How Do Small Businesses Finance their Growth Opportunities?

- The Case of the Recovery from the Lost Decade in Japan -

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Motivation

- How do small firms finance their growth opportunities?
- Well-developed financial system: bank loans
  - Well-developed financial institutions enhance economic growth, because they can allocate resources to firms with growth opportunities (Levine, 2005).
- Poorly financial system: trade credit (Fisman and Love, 2003; Ge and Qiu ,2007)

Motivation

- Traditional view: cost of trade credit is extreamely high.
  - Annual interest rates are over 40%. (Smith, 1987; Ng et al., 1999).
- When bank loans are unavailable, →use trade credit.
  - Less financially-developed countries (Fisman and Love, 2003), Tight Monetary Policy (Nilsen,2002), Financial distress (Wilner,2000; Cunat, 2007).

Motivation

- Shortcomings in Previous Studies
  - Previous studies: only ``2-10 net 30'' with annual interest rates of 40% or more.
  - A wide range of other credit conditions exist, ranging from ``0.5-30 net 90'' (a 3% annual interest rate) to ``5-15 net 30'' (a 120% annual interest rate), implying that the cost of trade credit is not always high. (Miwa and Ramseyer, 2008)

Questions

- This study investigates what the financial sources small firms with a greater need for external finance use in Japan.
- In particular, we examine whether trade credit is inferior to bank loans in Japan.

Questions

- Empirical test: the period of recovery from the ``lost decade'', the biggest recession since World War II in Japan
  - Japan：financially developed country (Rajan and Zingales, 1998).
  - Accommodative Monetary Policy
  - Period of Recovery

  →High Availability of Bank Debt

Questions

- If bank loans are superior to trade credit, →firms with greater need of external finance will use bank loans instead of trade credit in Japan.

Results

- Small firms with a greater need of financing use trade credit more during the period of recovery in Japan.
  - Especially in the unstable industries during the period of the Lost Decade.
- The main reason for using trade credit is not the lack of the availability of bank loans.
  - Firms with more collateral assets can more easily use bank credit, so they use trade credit less when bank credit is superior.
  - But, they use trade credit more.

DATA （Credit Risk Database：CRD）

- Established by Credit Guarantee Corporations and banks under the guidance of the METI and the SMEA
- Some financial institutions (and Credit Guarantee Corporations) offer their data to the CRD.
- The dataset in this study includes only corporations that existed for 4 years and more from 1997 to 2006 in CRD.
- The dataset includes information of a firm's balance sheet and profit & loss statement.
- Number of employees: the first quartile is 3, the median is 7, and the third quartile is 16.

法人統計との比較

Operating Income/Total Asset

	Total		-10M		10M-50M		50M-100M		100M-	
	MOF	CRD	MOF	CRD	MOF	CRD	MOF	CRD	MOF	CRD
1996	0.026	0.027	0.010	0.009	0.024	0.021	0.023	0.025	0.031	0.032
1997	0.026	0.027	0.009	0.009	0.019	0.021	0.026	0.025	0.032	0.032
1998	0.025	0.022	0.007	0.002	0.019	0.016	0.022	0.020	0.031	0.027
1999	0.019	0.019	-0.007	-0.004	0.012	0.013	0.018	0.018	0.026	0.026
2000	0.023	0.024	-0.012	0.002	0.014	0.016	0.024	0.021	0.030	0.029

Total Borrowings/Total Asset

	Total		-10M		10M-50M		50M-100M		100M-	
	MOF	CRD	MOF	CRD	MOF	CRD	MOF	CRD	MOF	CRD
1996	0.477	0.544	0.637	0.831	0.528	0.599	0.523	0.574	0.416	0.478
1997	0.470	0.543	0.629	0.837	0.545	0.597	0.509	0.574	0.408	0.473
1998	0.473	0.554	0.617	0.845	0.558	0.610	0.493	0.581	0.412	0.482
1999	0.484	0.563	0.655	0.864	0.593	0.628	0.463	0.591	0.412	0.483
2000	0.449	0.556	0.637	0.869	0.506	0.625	0.548	0.588	0.390	0.479

Table 3: The Median Ratios of Trade Payables and Short-and Long-term Borrowings (Normalized by Total Assets)

	Trade Payables	ST Borrowings	LT Borrowings
1996–2002	0.098	0.119	0.402
2003–2006	0.085	0.100	0.425
Total	0.092	0.111	0.412

Recovery from the “lost decade”

- After 2003, Japan experienced a long boom period.
- An exogenous increase in credit demand to finance working capital and investments.

Sales Growth

- Table 1 and 2
- In 1998, 1999, and 2002, the sales of small businesses fell more than 4%.
  - In the 1998–1999 recession, the level of sales decline was very serious in manufacturing, especially in the basic material, and processing and assembly sectors.
- Manufacturers (especially, the processing and assembly sector) recovered very rapidly after the 2002 recession.

Credit Demand

- Figure 1: the ratio of firms that increased inventories by a large amount.
- After 2003, the ratio of firms with higher inventory growth increased, and this appeared to be independent of industry.
  →After 2003, small businesses needed credit to finance inventory investment after 2003,
  - especially in the manufacturing sector.

Financial Sources

- What sources of finance do small businesses with higher credit demands use?
  - Only focus on trade credit and bank loans.
  - Only manufacturing firms.
- The inventory growth rate as a proxy of credit demand.
  - The firms with higher inventory growth have higher credit demand and need increasing short-term credit.
- Divide samples for four groups by the level of inventory growth rates: less than -1%, between -1% and 0%, between 0% and 1%, and more than 1%.

Simple Observation

- In Table 5: The Annual Growth of Short-term Borrowings
- In Table 6: The Annual Growth of Trade Payables

⇒Firms with higher credit demand use trade credit.

Simple Observation

- Comparisons by the Level of Sales and Inventory Growth: Table 8-9
- To exclude the presence of unsold goods, we divide the sample by the level of sales growth.
- The median trade payables growth rate is negative if we limit the sample to firms with higher inventories growth and greater falls in sales.
- The trade payables growth rate of firms with increasing inventories and sales is positive.

Simple Observation

- Do small businesses use trade credit since they cannot borrow enough from banks?
  - Tangible fixed assets to total borrowings ratio: proxy of credit worthiness (collateral assets).
  - Table 11: The median trade payables growth rates are positive apart form 1998, 1999 and 2002, not dependent on the level of collateral.

Simple Observation

- Comparison by Industry: Table 10
- Performance of processing and assembly sector is unstable.
  - Firms in unstable industries use trade credit more when they have short-term credit demand.
- Manufacturers do not increase short-term borrowings to invest inventories, both in periods of recessions and recoveries.

Regression

- $Short - term\ Borrowings\ Growth_{it}$
$$= \alpha 1 + \alpha 2 Credit\ Demand_{it} + X_{it}\alpha 3 + \alpha 4 Year\ Dummy_t + \eta_i + \varepsilon_{it}$$
- $Trade\ Payables\ Growth_{it}$
$$= \beta 1 + \beta 2 Credit\ Demand_{it} + Xi_t \beta 3 + \beta 4 Year\ Dummy_t + \eta_i + \varepsilon_{it}$$
- Inventory and sales growth rate as a proxy for *Credit Demand*

Hypothesis

- If bank loans are superior financial sources, borrowers use bank loans more to finance their credit demand.
  – The effect of *Credit Demand* for short-term borrowing growth is positive and larger than those effects for trade payables growth.
  – Also, *Credit Demand* have negative effect for the trade payables – current liabilities ratio.

Hypothesis

- If trade creditors offer credit immediately, borrowers use trade credit more.
  - Coefficient of *Credit Demand* is positive for trade payables growth rate and those effects are larger.
- Creditworthy firms use bank loans more (instead of trade credit) if trade credit is the extremely expensive.

Main Results

- Column (1) of Table 13: short-term borrowings growth rate.
  - The coefficient of inventories growth rates is positive and statistically significant at 1% level.
  - Firms that increase their inventories borrow more from banks.
  - Column (3):
    (Short-term borrowings$_t$/Current Liabilities$_t$)
    -(Short-term borrowings$_{t-1}$/Current Liabilities$_{t-1}$)
    →The coefficient is negative

Main Results

- Column (2) of Table 13: trade payables growth rate.
  - The coefficient of inventories growth rate is also positive and statistically significant. Similar in column (4)
  - Firms that increase more inventories use bank loans and trade credit.

Main Results

- The effects of sales growth
  - positive for trade payables and negative for short-term borrowings (columns (1) and (2)).
  - the results are similar in columns (3) and (4).
- These findings suggest that firms finance their growth opportunities using trade credit, not bank loans.

Creditworthy Firms

- Previous work: small businesses with a low availability of bank loans use trade credit more, because the cost of trade credit is extremely high.
- Small businesses with higher collateral assets use bank credit instead of trade credit?

Creditworthy Firms

- Tables 20-21 (collateral)
- Wealthy firms use trade credit instead of short-term borrowings.
- These findings do not support the hypothesis that firms use trade credit more because of the lower availability of bank loans.

Comparison by Industry

- In Table 16 - Table 19, we divide samples by type of industries.
- The performance of processing and assembly sector is unstable.
- Results: firms in unstable industries use more trade credit instead of bank loans.

Unstable Industries

- High Business fluctuations: the processing and assembly, and basic material sectors.
  - unexpected credit demands.
  - creditors need day-by-day monitoring about credit risk of borrowers.
- Only creditors that have updated information about those industries and borrowers can offer credit.

Conclusion

- Small firms with a greater need of financing use trade credit more during the period of recovery in Japan.
  - Especially in the unstable industries during the period of the Lost Decade.
- The main reason for using trade credit is not the lack of the availability of bank loans.
  - Firms with more collateral can more easily use bank credit, so they use trade credit less when bank credit is superior.
  - But, they use trade credit more.