Improving the Financing Needs, Credit Rating of SMEs and CRD Database

Submitted by: Keio University
Improving the Financing Needs, Credit Rating of SMEs and CRD Database

Presented by Naoyuki Yoshino
Professor, Keio University, Japan,
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yoshino@econ.keio.ac.jp

Outline of Presentation
1, SME dominates Asian Economy
2, SMEs are difficult to borrow money from Banks
3, Heavy reliance on Micro-credit
4, Book Keeping, Data collection
5, Financial Education for SMEs
6, Interest rate ceiling, Amount of sales
7, SME database, Information Asymmetry
8, E-Fund (E-financing) for SMEs
Need for the Structural Reform in Asian Financial Market

(1) “Using Asian Savings for Asian Investments” through development of Infrastructure bond markets to help develop bond markets in Asia.

(2) To facilitate financial inclusion of SMEs, which are the most numerous type of business structure in Asia, creating a SME database and developing regional trust funds.

(3) Supply side of finance: Need for long term investors → such as Pension funds and Insurance

Diagram:
- Government Bond
- Infrastructure
- Large Companies
- SME
- Venture Business
- Bond Market
- Gov. banks
- Long term Credit Banks
- ordinary Banks
- SME banks
- Micro credit
- Venture Capital
- Pension Funds & Insurance
SMEs in Thailand

<table>
<thead>
<tr>
<th>Type of Enterprise</th>
<th>No. of Enterprises (% of total)</th>
<th>No. of employment (% of total)</th>
<th>GDP Mill. Baht (% of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMEs</td>
<td>2,366,227 (99.6%)</td>
<td>8,900,567 (76.0%)</td>
<td>3,244,974 (38.2%)</td>
</tr>
<tr>
<td>Large Enterprise and Others</td>
<td>9,141 (0.4%)</td>
<td>2,810,767 (24.0%)</td>
<td>5,239,226 (61.8%)</td>
</tr>
</tbody>
</table>

Total 2,375,368 (100%) 11,711,334 (100%) 8,484,200 (100%)
SMEs in China
(Red Mark is SMEs’ share)

Loan Supply Curve
**SME versus Large Companies**

Interest Rate

Information Asymmetry

SME Loan Supply Curve

Large Companies

Loan Supply
Bank’s Profit Function
$$\Pi = r(L)XL - \rho(L,Z)\times L - C(L)$$
Subject to Balance Sheet Condition (L=D)
→ First Order Condition
$$r = -r'(L)\times L - \rho(L,Z) - \rho'(L)\times L - C'(L)$$
$$r = d1\times L - \rho(L,Z) - \rho'(L,Z)\times L - C'(L)$$
$$\frac{dr}{dL} = d1 - 2\times \rho'(L,Z) - \rho''(L,Z)\times L - C''(L)$$

\(\Pi\)=Profits, r(L)=loan rate of interest, L=amount of bank loan, D=Deposit
\(\rho\)=Default ratio, C(L)=Cost function of bank, Z=CRD data

Basel Capital Requirements

*Basel III*
1, Adequate Capital for Banks
2, To keep healthy
3, SME loans will decline
4, Micro credit
5, Loan sharks
6, Education to SMEs and borrowers


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**Financial Education for SMEs**

**Education Program and Textbooks**

1, Financial Planners Association
   **Individual Borrowing**
2, Central Bank of Japan
   Text books, **Educate School teachers**
   Regional Education Program
3, Various Financial Associations
   Bankers Association, Stock Exchange
Financial Planning for SMEs

(i) Education for SMEs
(ii) Japan’s Banks provided consultation services to SMEs
(iii) Financial Education for SMEs
   → Text book and Education training
   → Book Keeping
     → Data collection

Keeping books by SMEs

<Financial statements>
   (i) Cash & deposits
   (ii) Amount of Sales
   (iii) Inventories
   (iv) Buying price
   (v) Amount of goods laid in
   (vi) Various costs
      Equipment and Personal costs
   (vii) net profits
How much interest rate could SME pay?

1. Amount of loans / Net profits
2. Number of years to borrow
3. Expected growth rate of sales
4. Interest rate SME has to pay
5. Ratio of savings out of net profits

Japan’s Interest rate ceiling

= 98% → 45% → 29% → 20% (2010)
\[ nL_{t-1} + C_t = Y_t + \Delta L_t \quad \text{...(1)} \]
\[ C_t = cY_t \quad (c: \text{marginal propensity to consume}) \]
\[ Y_t = (1 + a)Y_{t-1} \quad (a: \text{Expected growth rate of net sales}) \]
\[ a = \frac{\Delta Y}{Y} = \frac{\Delta p}{p} + \frac{\Delta r}{r} = \left( \text{Rate of Inflation} \right) + \left( \text{Growth rate of real net sales} \right) \]
\[ L_0 = \text{Initial amount of borrowing} \]
\[ Y_0 = \text{initial net sales} \]
\[ L_n = \text{Amount of loans at the end of n-th period.} \]
\[ \frac{L_n}{I_n} < \frac{(1 - c)(1 + a)}{(r - a)} \left[ 1 - \left( \frac{1 + a}{1 + r} \right)^n \right] \quad \text{...(2)} \]

**Credit Rating System**

1. **AAA, AA, BBB, BBB, BBB**
2. **Single Number**
3. **Various Characteristics needed to be focused on:**
   (i) Growth potential
   (ii) Good Management
   (iii) Technology etc.
4. **Sudden Down-grading after Crisis**
Credit rating for large firms

1. It is based on historical data
2. Expect future based on past data
   Future credit rating will depend on
   future exchange rate, interest rate, etc.
3. Evaluate only on current situation
4. Cannot help how to revitalize
5. Cannot advise how to change
6. Big shock cannot be dealt with (Six Sigma)
7. Only Applicable to Large corporations

(i) Credit rating is a prediction of the future state under normal economic conditions and its effectiveness is very limited when an unexpected event occurs. The same thing can be said about credit examination and investment decisions.
(ii) If we attempted to reflect potential impacts of unexpected events in credit ratings, we would be unable to make such credit ratings that fit in for normal economic conditions.
(iii) Two opposite ideas about what credit rating ought to be: ratings flexibly responding to changing conditions and stable ratings.
(iv) Corporate finance credit ratings are likely vary according to various factors (changes in business results or external environments, etc.)
(v) There is a gap between simplicity represented by a rating symbol and complexity actually arising in the rating process.
(vi) If a credit rating depends on publicly available information alone, the slow-acting effect of the rating cannot be avoided.
(viii) Rapid and drastic downgrading of a credit rating could make the situation even worse.

Quantitative and Qualitative Data

1, Credit Rating based on mainly quantitative data
2, Changes in Credit Rating → Affects performance of company
3, → Corporate Credit Rating → Asset Credit Rating
**SME Data base (CRD Data base)**

- **SMEs** (14.4 million data)
- **Defaults** (1.7 million data)

**Credit Guarantee Corporations**
(Collect Data of SMEs)

**Financial Institutions**
200

- Regional Banks
- Credit Associations
- Credit Cooperatives
- Government Banks
- Central Bank

1, Government Support
2, Reliability
3, Security of Information

**CRD**

**Credit rating for large firms**

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Credit Rating for SMEs by Use of CRD Data

1. Credit Rating is only applicable to large companies
2. Credit Rating for SMEs based on CRD Data
3. Five ranking of SME (Japan’s case)
4. Credit Guarantee ratio is determined
5. CRD can obtain default risk ratio
6. Risk based Interest rate

Credit Rating of SMEs by Use of CRD Database

(i) Profitability  capital earnings ratio
(ii) Efficiency
(iii) Productivity
(iv) Safety  Liquidity ratio
(v) Growth Potential  profit growth
**CRD Database**

1. Sector, Location, Year of Establishment
2. Real estates, Age of Owner
3. Successor or not
4. Financial Data
   (i) Cash & Deposits,
   (ii) Liquidity Assets and Fixed Assets
   (iii) Total Assets
   (iv) Short term and long term borrowings
   (v) Sales, Profits

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**Risk Based Interest Rate**

(1) General Credit Risk
(2) Credit Cost Ratio
   
   \[
   \text{[Default ratio]} \times (1-\text{recovery rate})
   \]
(3) Costs = Personal and Equipment
(4) Interest rate to raise money
(5) Monitoring of SMEs by banks
Bankers and Micro credits have to provide honest service to SME borrowers

1, Association of Micro credit companies was established in 2009 in Japan.
Education to money lenders (micro credit companies)
2, Self regulations by the Association
3, More than 50% joins the Association
Borrower, Lender and Market

Borrower
SMEs
Individuals

Market

Lender
Banks
MicroCredit

Information Asymmetry
How much Borrowed?

Asia’s Characteristics
1, Large Share of SMEs (Small and Medium Enterprises)
2, Bank Dominated Market
3, Long term commitment
4, Large Share of Micro Credit
5, High Savings Rate
Collateral based Lending

1. Collateral --- Land and Real estate
2. Have to look at the business activities of borrowers
3. Tuna and other collateral
4. Bankruptcy Law
   Cannot pay back the loans
   Priority of lenders
   Sell collateral into the market

Bank based SME financing and Regional financing to Riskier Borrowers

1. Bank Loans to relatively safer borrowers
2. Regional mutual funds / Regional fund

E-Finance, E-Fund
Examples of Trust Funds by Internet in Japan; E-fund
1, Solar Power Panel
2, Japanese Sake (=Japanese wine) producers’ fund
3, Forest trust fund
4, Music trust fund
5, Wind Power Generator
6, Green Finance

Separate Accounts of SME financing
1, Traditional Bank finance
   Private banks
2, SME fund, Regional mutual funds, E-Finance
   Sell these mutual funds through banks’ branch offices
3, Separating two accounts
   (i) Banking accounts (Guarantee by FDIC)
   (ii) SME funds, Regional mutual fund (non-guarantee)
References

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