Hometown Investment Trust Funds: Finance for Start-up Businesses

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Barriers for SMEs in Accessing Financial Institutions, Collateral, Higher interest rate, long term process

A. People's Republic of China
- Supply-side:
  - High lending rate
  - Complicated procedures
  - Collateral/guarantee
  - Lending policy of FI
  - Short loan term
  - Exclusive lending attitude of FI
- Demand-side:
  - Lack of knowledge
  - Insufficient management
  - No demand on SMEs

B. India
- Supply-side:
  - Collateral/guarantee
  - Lending policy of FI
  - Complicated procedures
  - Exclusive lending attitude of FI
  - High lending rate
- Demand-side:
  - Short loan term
  - Lack of knowledge
  - No demand on SMEs
  - Insufficient management

C. Republic of Korea
- Supply-side:
  - Collateral/guarantee
  - Lending policy of FI
  - Complicated procedures
  - Exclusive lending attitude of FI
  - High lending rate
- Demand-side:
  - Short loan term
  - Lack of knowledge
  - Insufficient management
  - No demand on SMEs

D. Malaysia
- Supply-side:
  - Collateral/guarantee
  - Lending policy of FI
  - Complicated procedures
  - Exclusive lending attitude of FI
- Demand-side:
  - High lending rate
  - Short loan term
  - Lack of knowledge
  - No demand on SMEs
  - Insufficient management

Start up businesses and farmers

Hometown Investment Trust Funds: Springer

A Stable Way to Supply Risk Capital

Yoshino, Naoyuki; Kaji Sahoko (Eds.) 2013,

Japan, Cambodia, Vietnam, Peru, Mongolia

Access to Digital Technology, Internet
Internet On-line trade

Start ups
Farmers
Innovators

Internet Company
Advertise

Consumers

FSA: Registration
Roof top Solar Fund
300 $/ per person
<table>
<thead>
<tr>
<th></th>
<th>Vegetables’ Fund.</th>
<th>Soup Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each investor</td>
<td>100 US Dollar</td>
<td>200 US Dollar</td>
</tr>
<tr>
<td>Total</td>
<td>52,500 $</td>
<td>32,000 $</td>
</tr>
</tbody>
</table>
Agricultural Funds
Beans and Wine
TRUST is important

1. Regular meetings with producers (every quarter)
2. Look for good products and advertise by internet
3. Give advise to innovators
4. Order the products though internet
5. Payment and Delivery
6. Reputation
7. Trust of community, Trust by customers
Village Funds for Green Energy

1. Collect Small Amount of Money
2. Solar power panel with battery
3. Use solar power for local manufacturing
4. Use solar power for agriculture
5. Sales of village products will increase
6. Construct Another solar power plant
7. Step by step approach to increase electricity in the village
Revitalization of Tsukubane Hydro Power (Nara state)
250 investors, total 525 thousand US dollars, Japan

Original Dam was constructed more than 100 years ago
Solar Power projects in Japan
Various Private Financial Investors in Asia

1. **Banks** --- **Safer projects**
   - Brown field (infrastructure)
   - Invest into operation period
   - Securitization after certain period of time
   - Privatized projects by the government

2. **Insurance and Pension funds** (Brown fields)
   - Long term projects (10 years – 20- 30 years)

3. **Revenue Bonds** (floating interest rate)
   - Uncertain income streams

4. **Equity Investments**
   - Construction period and Green fields
Injection of Increased tax revenues from the spillover effect into energy projects in order to increase the rate of return for private investors

Spillover effects of electricity supply

Source: Yoshino and Taghizadeh-Hesary (2017)
Spillover Effects of Infrastructure Investment

- Electricity Supply
  - (User charges)
  - (low rate of return)
- Non-affected region
- Employment
- Private investment
  - SME development
- Spillover effect
- Increase of property tax revenue
Injection of Increased Tax revenues

Increase of tax revenues by spillover effects

user charges
Injection of fraction of tax revenues as subsidy

Toll revenue from Highways

Injection of subsidies $\text{Sub}(t)$

$\mathcal{R}(t-1)$

Return to private investors

Private funds

Increase in tax revenues by spillover effect $(T(t-1))$

Source: Yoshino and Nakahigashi (2016)
The Southern Tagalog Arterial Road (STAR Highway), Philippines, Manila

Tax Revenues in three cities
Yoshino and Pontines (2015)
ADBI Discussion paper 549

Table 3.3  Calculated Increase in Business Beneficiary Group Relative to Nonbeneficiary Group

<table>
<thead>
<tr>
<th></th>
<th>t-2</th>
<th>t-1</th>
<th>t</th>
<th>t+1</th>
<th>t+2</th>
<th>t+3</th>
<th>t+4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lipa City</td>
<td>134.36</td>
<td>173.50</td>
<td>249.70</td>
<td>184.47</td>
<td>191.81</td>
<td>257.35</td>
<td>371.93</td>
</tr>
<tr>
<td>Ibaan</td>
<td>5.84</td>
<td>7.04</td>
<td>7.97</td>
<td>6.80</td>
<td>5.46</td>
<td>10.05</td>
<td>12.94</td>
</tr>
<tr>
<td>Batangas City</td>
<td>490.90</td>
<td>622.65</td>
<td>652.83</td>
<td>637.89</td>
<td>599.49</td>
<td>742.28</td>
<td>1,208.61</td>
</tr>
</tbody>
</table>

Construction  Operation period
Government Financing (Externality Effects)

1. Measure the negative external effects of CO$_2$ and NOX
2. Levy Tax on CO$_2$ and NOX
   → Transfer subsidies to renewable energy
3. Provide subsidy to renewable energy projects
   → Injection of tax revenues to investors in renewables
   → R&D (renewable energy sector)
Financing Scheme for Renewable Energy Projects Using HITs and Carbon Tax

Subsidies From TAX on CO2 Spillover Tax revenues

HIT = Hometown Investment Trust Fund.

Source: Authors.
Infrastructure Revenue Bond

Regional Development Agency issues Revenue Bond (user charges) plus (Spillover effects)

60% Private Investors
40% Government
Equity and Bond Investment in infrastructure

- **infrastructure development company issues bond**
- **And equities (Spillover effects)**

- **Issue bonds to Investors**
- **70%**
- **30%**

- **Equity Investors**
## Macroeconomic Effect of Infrastructure Investment

Spillover Effects Estimated from a Macroeconomic Translog Production Function

<table>
<thead>
<tr>
<th></th>
<th>1956-60</th>
<th>1961-65</th>
<th>2001-05</th>
<th>2006-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct effect</td>
<td>0.696</td>
<td>0.737</td>
<td>0.114</td>
<td>0.108</td>
</tr>
<tr>
<td>Indirect effect (K_p)</td>
<td>0.452</td>
<td>0.557</td>
<td>0.091</td>
<td>0.085</td>
</tr>
<tr>
<td>Indirect effect (L)</td>
<td>1.071</td>
<td>0.973</td>
<td>0.132</td>
<td>0.125</td>
</tr>
<tr>
<td>20% returned</td>
<td>0.305</td>
<td>0.306</td>
<td>0.045</td>
<td>0.042</td>
</tr>
<tr>
<td><strong>Increment</strong></td>
<td><strong>43.8%</strong></td>
<td><strong>41.5%</strong></td>
<td><strong>39.0%</strong></td>
<td><strong>39.1%</strong></td>
</tr>
</tbody>
</table>
4. Analysis of SME credit risk using Asian data

- Selection of the variables
- Principal Component Analysis
- Cluster Analysis
- Interpretation of the results
Examined Variable

<table>
<thead>
<tr>
<th>No.</th>
<th>Symbol</th>
<th>Definition</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Equity_TL</td>
<td>Equity (book value)/total liabilities</td>
<td>Leverage</td>
</tr>
<tr>
<td>2</td>
<td>TL_Tassets</td>
<td>Total liabilities/total assets</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cash_Tassets</td>
<td>Cash/total assets</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>WoC_Tassets</td>
<td>Working capital/total assets</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Cash_Sales</td>
<td>Cash/net sales</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>EBIT_Sales</td>
<td>Ebit/sales</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Ret_PpeAsset</td>
<td>Retained earnings/total assets</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Ninc_Sales</td>
<td>Net income/sales</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>EBIT_IE</td>
<td>Ebit/interest expenses</td>
<td>Coverage</td>
</tr>
<tr>
<td>10</td>
<td>AP_Sales</td>
<td>Account payable/sales</td>
<td>Activity</td>
</tr>
<tr>
<td>11</td>
<td>AR_TL</td>
<td>Account receivable/total liabilities</td>
<td></td>
</tr>
</tbody>
</table>
## Factor Loadings of Financial Variables after Direct Oblimin Rotation

<table>
<thead>
<tr>
<th>Variables (Financial Ratios)</th>
<th>Component</th>
<th>Z1</th>
<th>Z2</th>
<th>Z3</th>
<th>Z4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity_TL</td>
<td></td>
<td>0.009</td>
<td>0.068</td>
<td>0.113</td>
<td><strong>0.705</strong></td>
</tr>
<tr>
<td>TL_Tassets</td>
<td></td>
<td>-0.032</td>
<td><strong>-0.878</strong></td>
<td>0.069</td>
<td>-0.034</td>
</tr>
<tr>
<td>Cash_Tassets</td>
<td></td>
<td>-0.034</td>
<td>-0.061</td>
<td><strong>0.811</strong></td>
<td>0.098</td>
</tr>
<tr>
<td>WoC_Tassets</td>
<td></td>
<td>-0.05</td>
<td><strong>0.762</strong></td>
<td>0.044</td>
<td>0.179</td>
</tr>
<tr>
<td>Cash_Sales</td>
<td></td>
<td><strong>-0.937</strong></td>
<td>0.021</td>
<td>0.083</td>
<td>0.009</td>
</tr>
<tr>
<td>EBIT_Sales</td>
<td></td>
<td><strong>0.962</strong></td>
<td>0.008</td>
<td>0.024</td>
<td>-0.004</td>
</tr>
<tr>
<td>Rinc_Tassets</td>
<td></td>
<td>0.014</td>
<td><strong>0.877</strong></td>
<td>0.015</td>
<td>-0.178</td>
</tr>
<tr>
<td>Ninc_Sales</td>
<td></td>
<td><strong>0.971</strong></td>
<td>-0.012</td>
<td>0.015</td>
<td>0.014</td>
</tr>
<tr>
<td>EBIT_IE</td>
<td></td>
<td>0.035</td>
<td>0.045</td>
<td><strong>0.766</strong></td>
<td>-0.098</td>
</tr>
<tr>
<td>AP_Sales</td>
<td></td>
<td><strong>-0.731</strong></td>
<td>-0.017</td>
<td>-0.037</td>
<td>-0.016</td>
</tr>
<tr>
<td>AR_TL</td>
<td></td>
<td>0.009</td>
<td>-0.041</td>
<td>-0.104</td>
<td><strong>0.725</strong></td>
</tr>
</tbody>
</table>

Note: The extraction method was principal component analysis. The rotation method was direct oblimin with...
Cluster analysis: the average linkage method

Dendogram Using Average Linkage
Grouping Based on Principal Component (Z1-Z2) and Cluster Analysis

Note: Group 1 = healthiest SMEs; group 2 = in-between SMEs; group 3 = least healthy SMEs.
Robustness check of the method

\[ Y = c + \alpha_1 Z_1 + \alpha_2 Z_2 + \alpha_3 Z_3 + u \]

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>Z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>1.14</td>
<td>0.09</td>
<td>13.06**</td>
<td>0</td>
</tr>
<tr>
<td>Z1</td>
<td>1.00</td>
<td>0.16</td>
<td>6.31**</td>
<td>0</td>
</tr>
<tr>
<td>Z2</td>
<td>-2.17</td>
<td>0.14</td>
<td>-15.40**</td>
<td>0</td>
</tr>
<tr>
<td>Z3</td>
<td>-1.02</td>
<td>0.21</td>
<td>-4.75**</td>
<td>0</td>
</tr>
</tbody>
</table>

McFadden R-squared: 0.76
Reference:


