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**THE GLOBAL IMBALANCE
AND
THE DEVELOPMENT OF CAPITAL FLOWS
AMONG ASIAN COUNTRIES**

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**Capital Flow and need for infrastructure
bond market and finance to SMEs in Asia**

- 1, High rate of savings in Asia**
 - 1-1, Domestic Savings,**
 - 1-2, Foreign reserves**
- 2, Invest into US and European bond market**
- 3, Short term investment from outside of Asia**
 - Stock investment and hedge funds**
- 4, Huge needs for long term investment**
- 5, Infrastructure investment and SME finance**

The global economy → more interconnected

→ the size and volatility of capital flows has increased

→ excess liquidity and the risk of potential asset bubbles.

In several Asian countries (Thailand, Indonesia etc.)

(i) certain macro-prudential regulations

(ii) capital controls

(iii) micro-prudential regulations

had been introduced

→ In order to stabilize capital inflows from outside of the region.

an integral component of international finance from surplus countries to deficit countries, the Asian crisis a decade ago, once again emerges as a hot topic.

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.

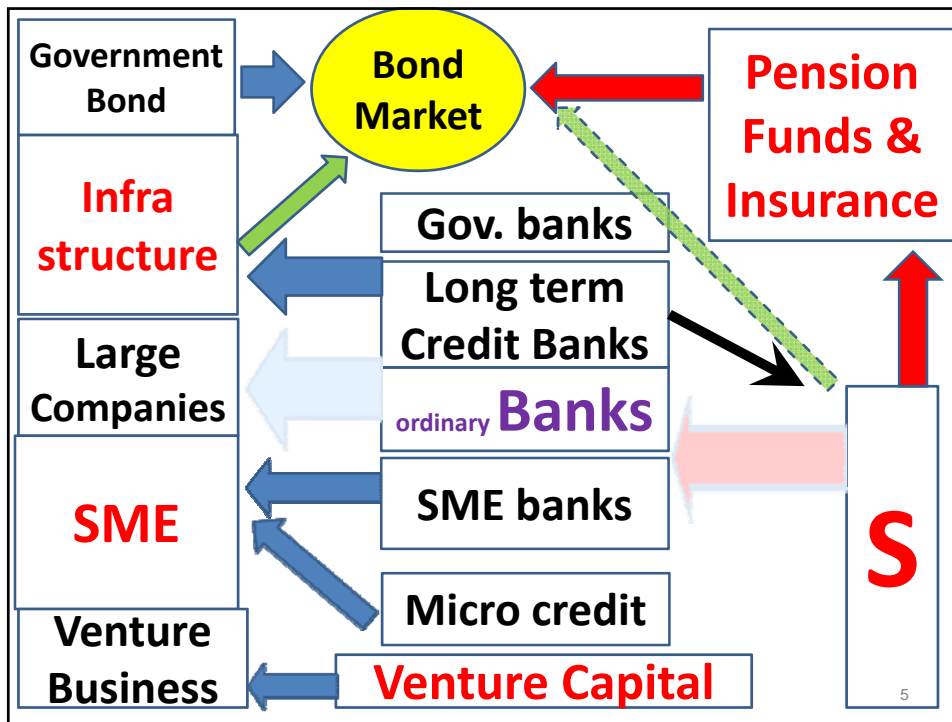
(2) To facilitate financial inclusion of SMEs, which are the most numerous type of business structure in Asia, creating a SME database

and

developing regional trust funds.

(3) Supply side of finance: Need for long term Investors

→ such as Pension funds and Insurance



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

1, High savings rate of Asia

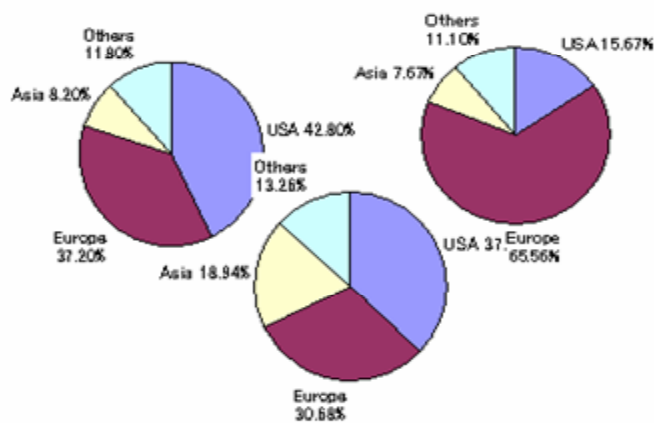
Table 1 Savings and investment ratios in Asia

	Savings/GDP					Investment/GDP				
	1990	1995	2000	2005	2007	1990	1995	2000	2005	2007
China	35.2	39.6	38.0	47.3	48.6	36.1	41.9	35.1	43.3	44.2
Hong Kong	35.7	29.6	31.9	33.0	32.2	27.0	34.1	27.5	20.6	21.3
Indonesia	32.3	30.6	31.8	27.5	28.2	30.8	31.9	22.2	24.6	24.9
Korea	37.3	36.5	33.9	33.2	30.8	37.5	37.6	31.0	30.1	29.4
Malaysia	34.4	39.7	46.1	42.8	42.2	32.4	43.6	26.9	20.0	21.9
Philippines	18.7	14.5	17.3	21.0	20.9	24.2	22.4	21.2	14.6	15.2
Singapore	44.0	50.1	46.9	48.6	51.4	37.1	34.5	33.3	19.9	22.6
Taiwan	27.8	26.8	25.5	25.6	28.7	22.9	25.2	23.3	21.4	21.2
Thailand	34.0	36.9	32.5	31.0	33.9	41.3	42.1	22.8	31.4	26.8

Source) Asian Development Bank, Key Indicators, 2008

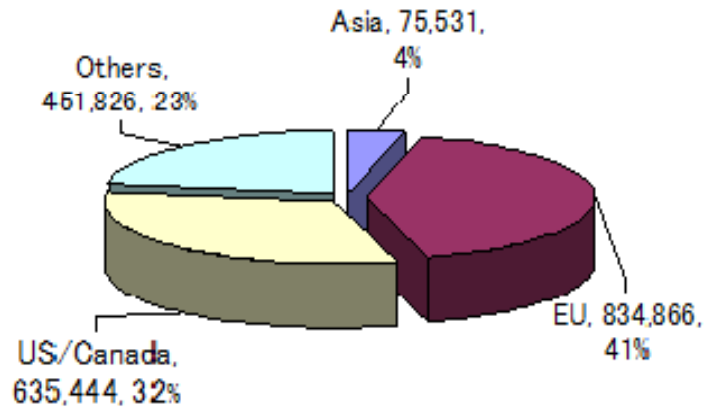
Direction of Portfolio Investment

Figure 1, From Asia, Figure 2, To Asia, Figure 3, Europe

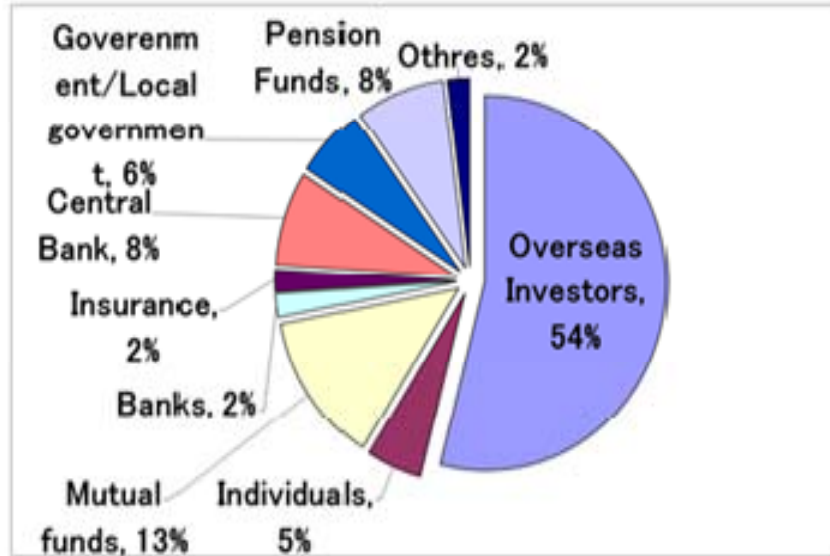


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**Debt Securities Investment from Asia
(unit: million dollar)**



US Treasury Bond Market



US Treasury bonds (Holdings)

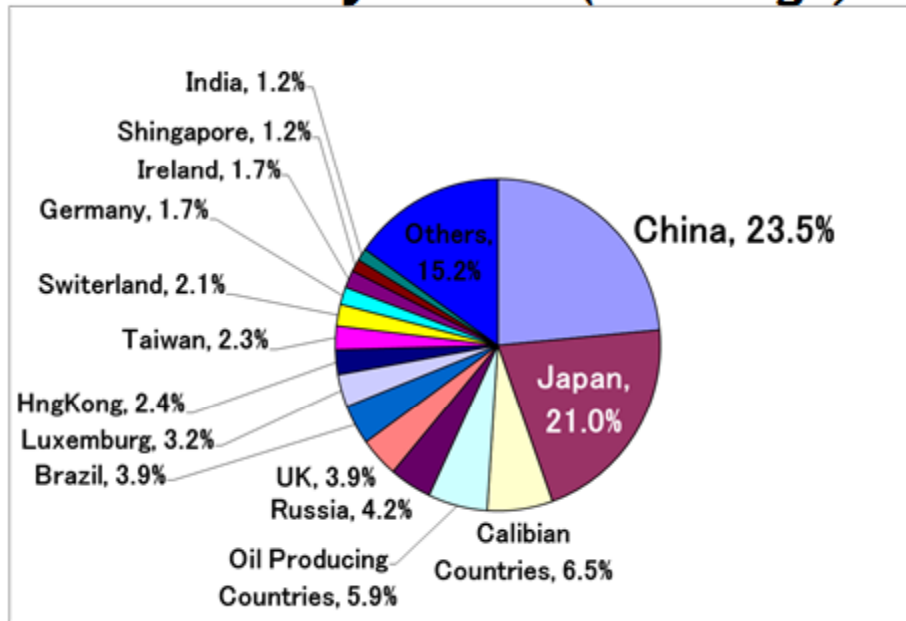
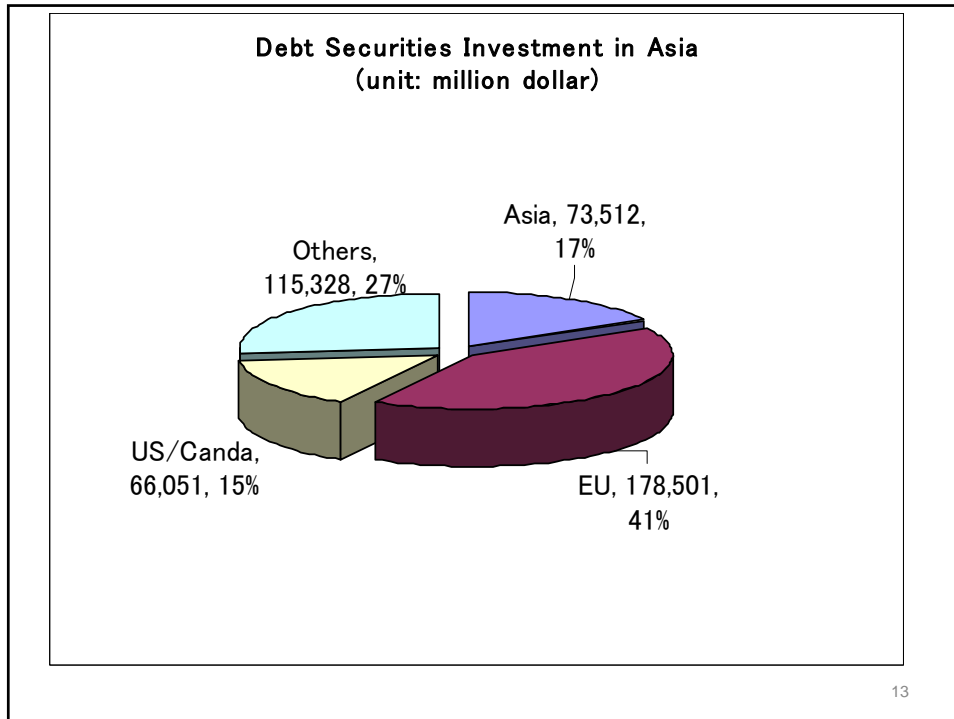


Table 4 Where are investors into Asia ?

Country	Country		UK	Euro region	Other Europe
Thailand Total=3,108	No1 EU	10.33	4.57	5.67	0.09
	No2 US	8.88			
	No3 Singapore	1.8			
	No4 Indonesia	1.57			
	No5 Hong Kong	1.55			
Malaysia Total=3,781	No1 EU	13.18	5.57	7.54	0.07
	No2 Singapore	7.51			
	No3 USA	5.67			
	No4 Hong Kong	1.96			
	No5 Australia	1.43			
Singapore Total=2,016.86	No1 EU	629.28	356.82	260.54	11.91
	No2 USA	290.31			
	No3 Australia	169.66			
	No4 Malaysia	167.83			
	No5 Korea	90.3			

12



Why Asians do not invest in Asia ?

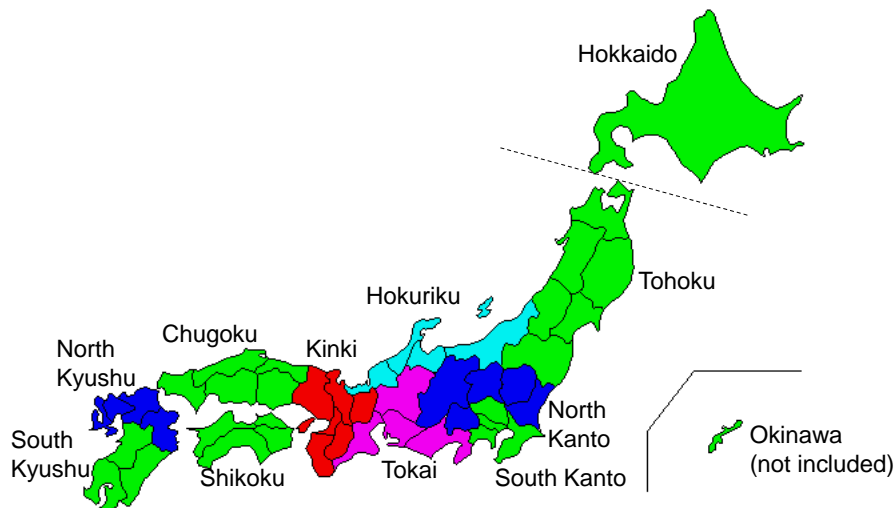
- 1, Lack of Financial Products**
- 2, Lack of Information about Assets**
- 3, Infrastructure bond**
- 4, Community Investment**
- 5, Green Projects Financing**

Source of Financing Infrastructure Investment :
(Pros and Cons)

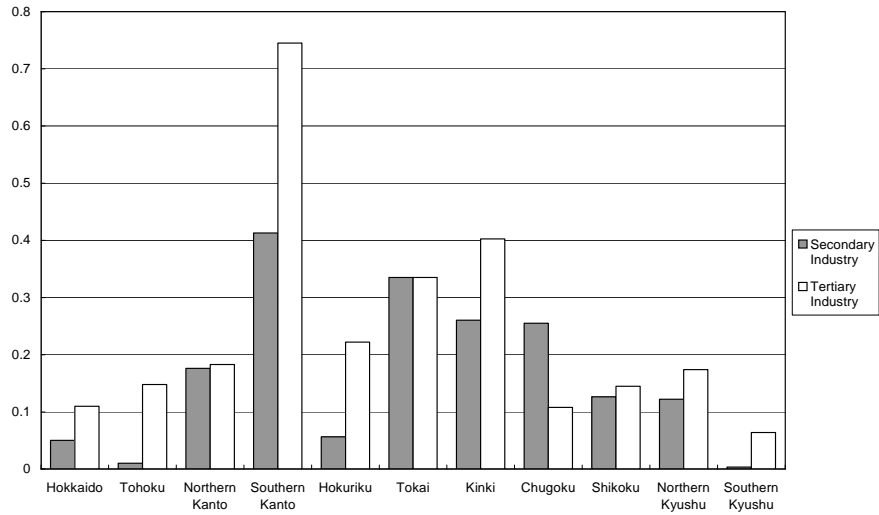
- (1) by tax payers' money;**
- (2) use of national savings such as national savings banks (or postal savings);**
- (3) issue government bond to construct infrastructures;**
- (4) utilizes both public money and private sector money (i.e. Public-Private-Partnership).**

15

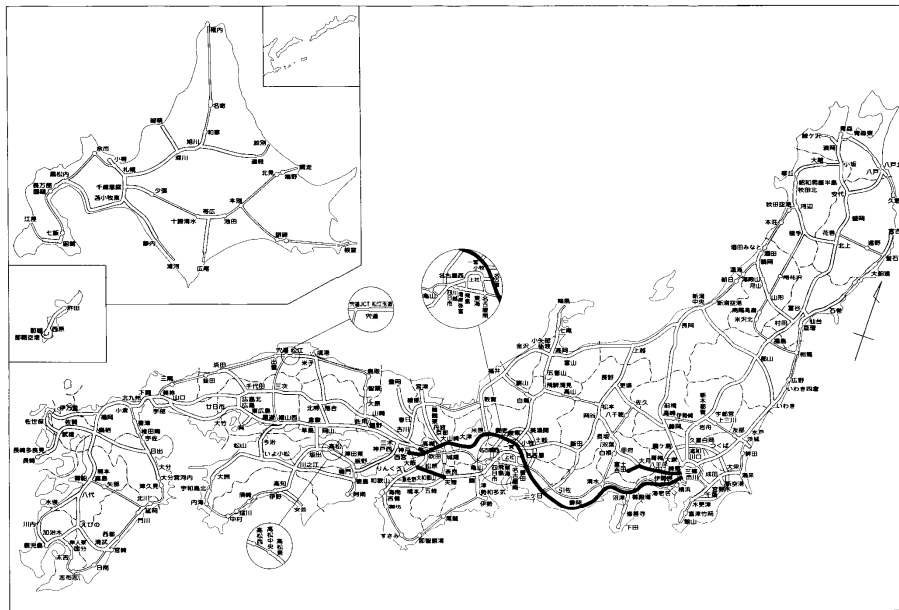
Map of Japan from the North to the South



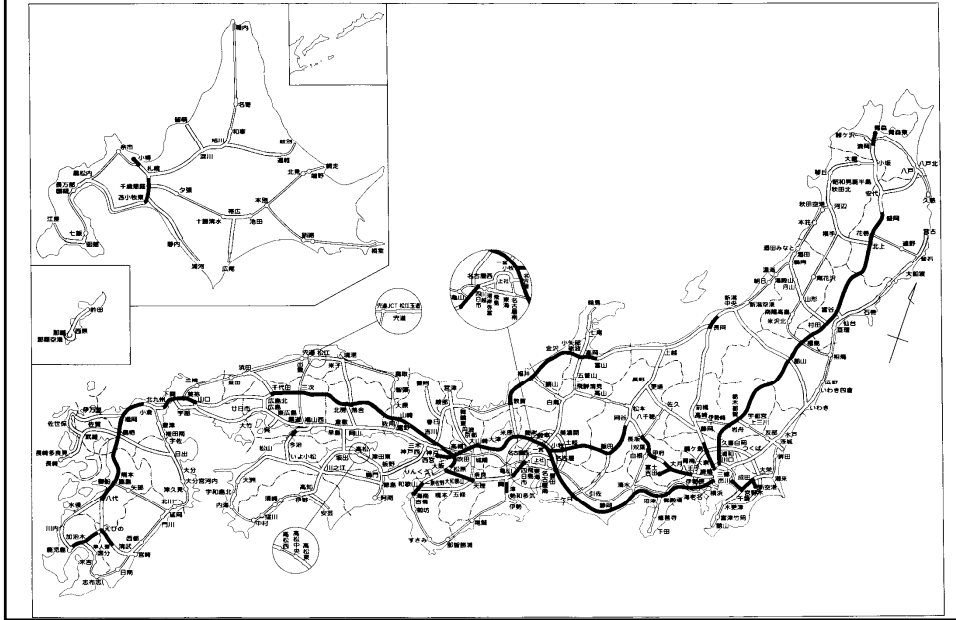
Marginal Productivity of Public Capital (Regional Disparity)



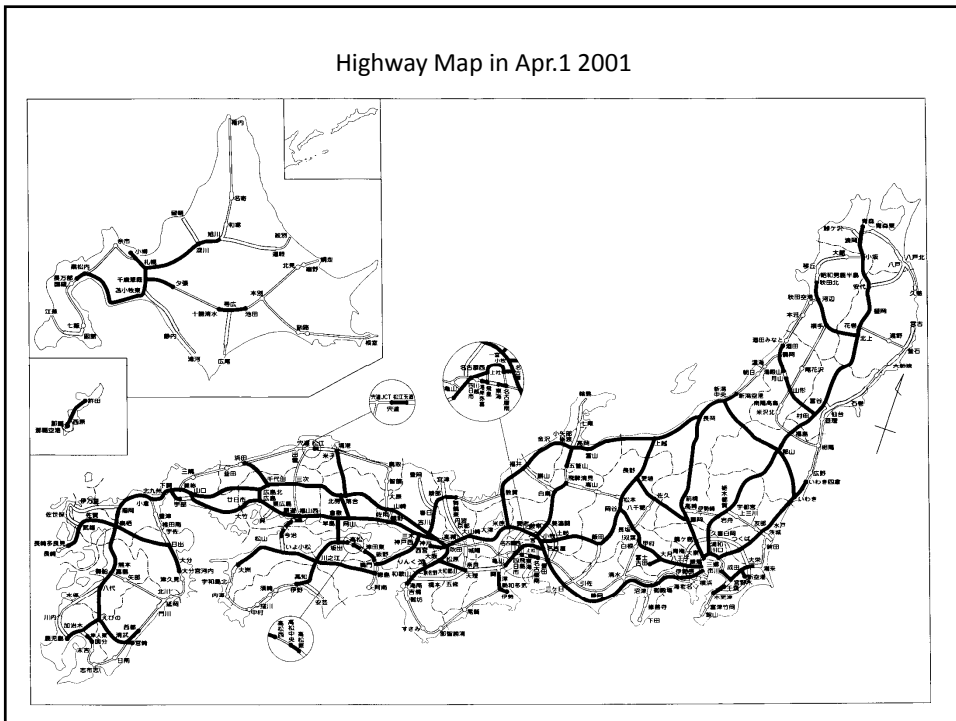
Highway Map in Apr.1, 1970



Highway Map in Apr.1, 1980



Highway Map in Apr.1 2001



Economic Effect of Public Capital (Productivity Effect)

TFP Regression

$$\ln\left(\frac{TFP_t}{TFP_{t-1}}\right) = \ln\left(\frac{Y_t}{Y_{t-1}}\right) - s_{L,t} \ln\left(\frac{L_t}{L_{t-1}}\right) - (1 - s_{L,t}) \ln\left(\frac{K_{p,t}}{K_{p,t-1}}\right)$$

$$\ln(TFP_t) = \alpha + \beta \ln(\text{Public Capital}_t) + u_t$$

Translog Production Function

$$Y_t = f(K_p, L, K_g)$$

Regressor	(1)	(2)	(3)	(4)
	Strict	Strict	Broad	Broad
Constant	-9.546**	-7.148**	-9.806**	-8.066**
Dummy (1974-)	6.448**	4.599**	5.495**	4.183**
Dummy (1990-)	2.639	2.557**	1.641	1.603*
Public Capital	0.587**	0.432**	0.600**	0.487**
Public Capital (1974-)	-0.367**	-0.261**	-0.310	-0.235**
Public Capital (1990-)	-0.134	-0.129**	-0.080	-0.079*
Trend Term	—	0.110**	—	0.086**
R-Squared	0.991	0.998	0.996	0.999
D.W.	0.382	1.112	0.475	1.187

Year	1956-69	1960-64	1965-69	1970-74
Private Capital Stock	0.7558	0.7304	0.6463	0.4131
Public Capital Stock	0.6487	0.8016	0.8168	0.0842

Year	1975-79	1980-84	1985-89	1990-98
Private Capital Stock	0.3124	0.2578	0.2280	0.1995
Public Capital Stock	0.0397	0.0590	0.2525	0.2246

Note: *: statistically significant at 5% level

** : statistically significant at 1% level

Dummy(1974-) : dummy variable (after 1974=1, before 1973 = 0)

Dummy(1990-) : dummy variable (after 1990=1, before 1989 = 0)

Public Capital (1974-) : coefficient dummy (after 1974 = 1, others = 0)

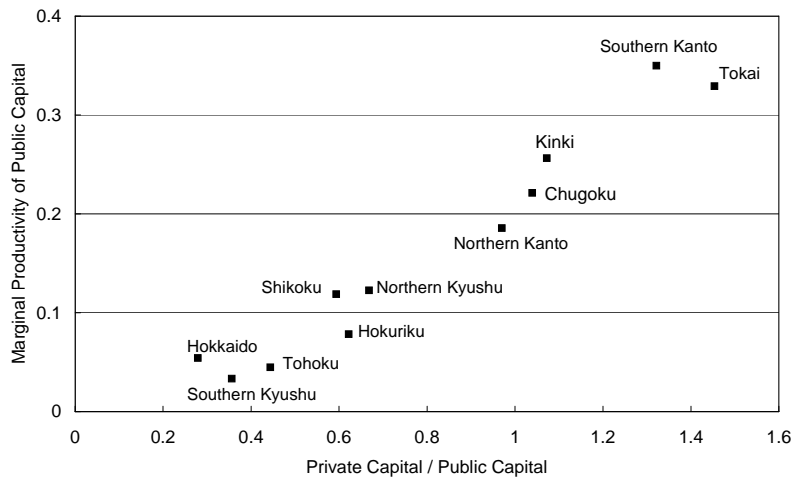
Public Capital (1990-) : coefficient dummy (after 1990 = 1, others = 0)

Source: Yoshino, Nakajima and Nakagishi (1999) Table 2-4

Effectiveness of Public Capital Stock

- "Private capital/Public capital ratio" to "Marginal productivity of Public capital" -

Secondary Industry (Industrial Sector)



Determinants of regional allocation of public investment (Political Power plays a role)

Table3 Allocation of Public Infrastructure in Japan: (Pooled data, 47 prefecture)

Coefficient	Explanatory Variables	Agriculture	Land Conservation	Industrial Infrastructure	Improvement of living standards y
α_0	Constant	-35.44 (-10.46**)	-34.26 (-11.32**)	-61.58 (-11.84**)	52.32 (8.00**)
α_1	Yp (Income)	0.01 (7.21**)	0.01 (13.18**)	0.02 (17.99**)	0.036 (25.86**)
α_2	Sp(AreaSize)	4970 (28.47**)	2090 (13.40**)	3855 (14.39**)	2730 (8.10**)
α_3	Rp(Political Power)	8280 (16.88**)	7274 (16.60**)	10956 (14.55**)	-7434 (-7.85**)
α_4	Dummy1	-23.21 (-6.69**)	-34.27 (-11.06**)	-59.81 (-11.23**)	-36.85 (-5.50**)
α_5	Dummy2	27.43 (9.26**)	-1.65 (-0.62)	65.87 (14.48**)	66.89 (11.70**)
Adj. R^2		0.675	0.486	0.458	0.527

(1) () denotes t-value

(2) ** is significant with 99.0% level,

Marginal Productivity of Public Capital, Japan (Production Function, 1956-1993)

Year	1956-59	1960-64	1965-69	1970-74
Private Capital Stock	0.7558	0.7304	0.6463	0.4131
Public Capital Stock	0.6487	0.8016	0.8168	0.0842

Year	1975-79	1980-84	1985-89	1990-93
Private Capital Stock	0.3124	0.2578	0.2280	0.1995
Public Capital Stock	0.0397	0.0590	0.2525	0.2246

Note: This is estimated from the simultaneous regression of production function and labor share function. The estimation method refers to Yoshino, Nakajima and Nakahigashi (1999).

Reprinted from Yoshino, Nakajima and Nakahigashi (1999) Table 2-4

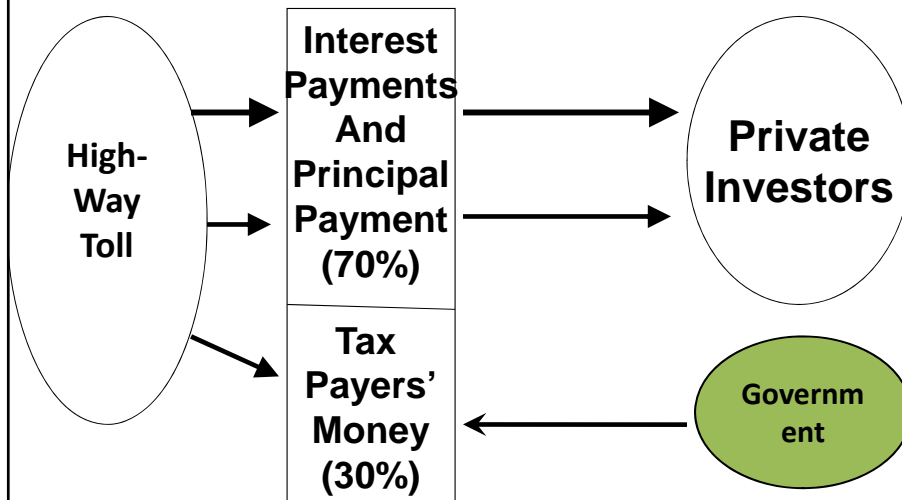
Marginal Productivity of Public Capital, Japan (Production Function, 1980-2004, Preliminary)

Year	1980-84	1985-89	1990-94
Private Capital Stock	0.1587	0.1499	0.0658
Public Capital Stock	0.3100	0.2654	0.2189

Year	1995-99	2000-04
Private Capital Stock	0.0633	0.1551
Public Capital Stock	0.1752	0.1615

25

Figure 5 Infrastructure Revenue Bond



26

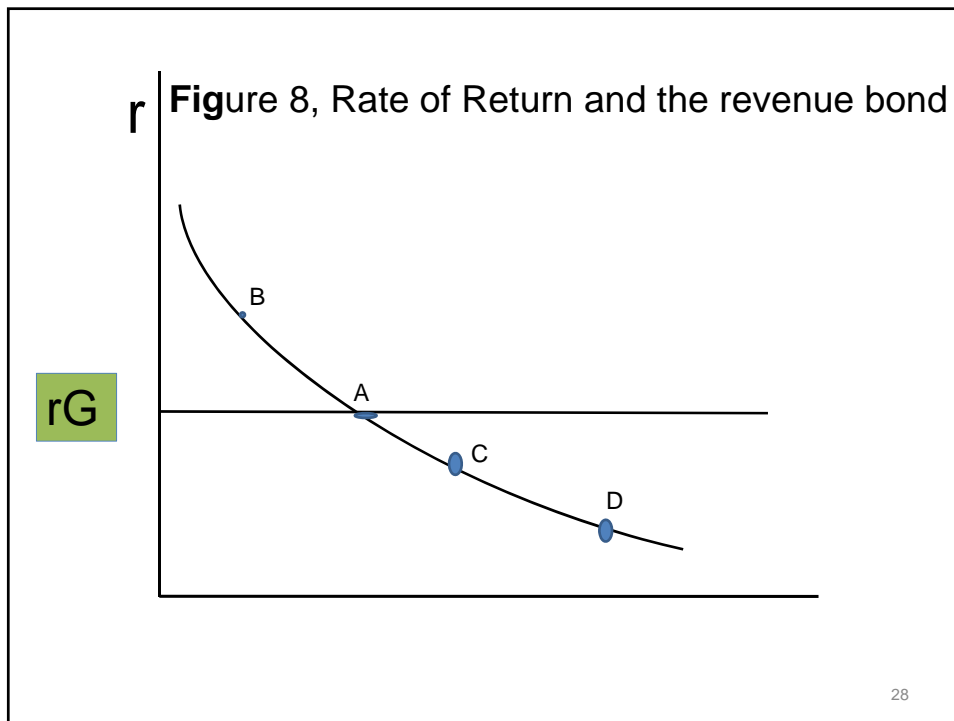
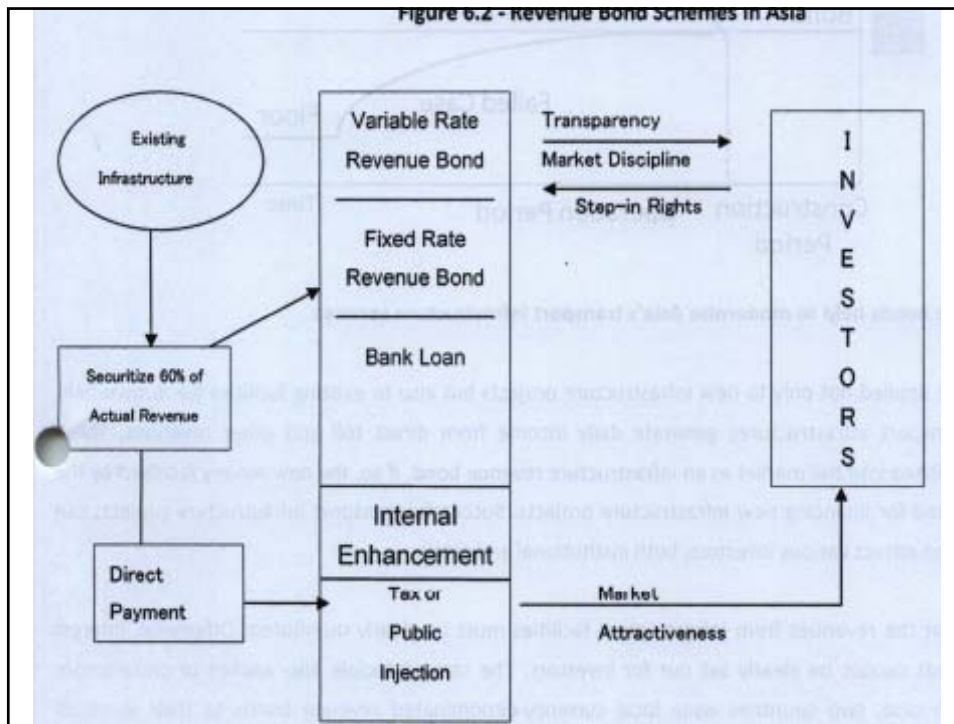
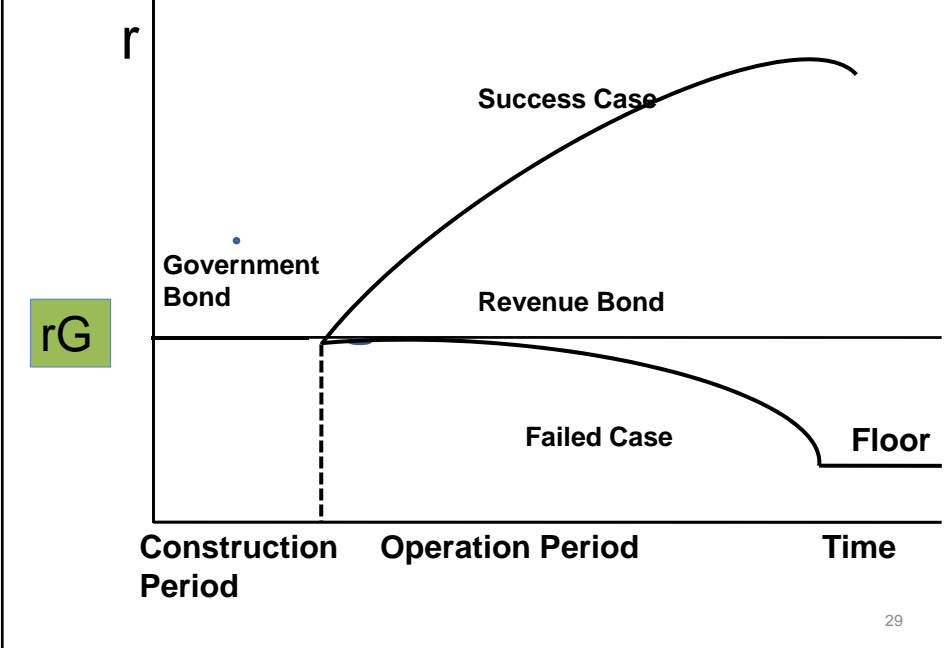


Figure 9, Convertible from Government Bond to Revenue Bond



Private Sector Green Trust Fund

(1) Brown Field

Construction by the government
introduce private sector funds afterwards

(2) New Projects (Green filed)

Riskier
good to be based on market basis

*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

31

Investors

Large Projects and Professional Investors

Pension Funds

Insurance companies

Mutual Funds

Community Type Infrastructure

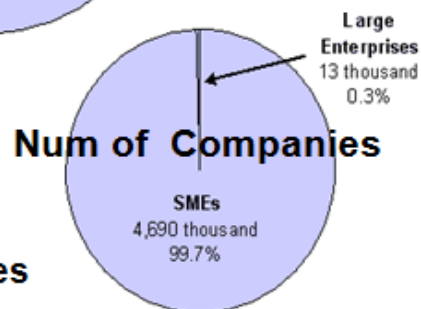
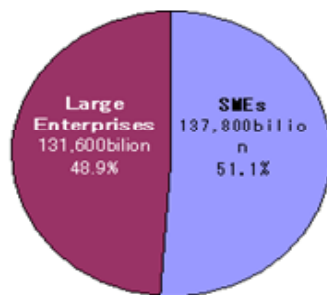
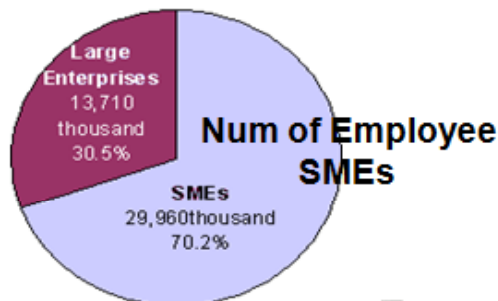
Wind power Generator Funds

Japanese Wine Fund

SMEs in Thailand

Type of Enterprise	No. of Enterprises (% of total)	No. of employment (% of total)	GDP Mill. Baht (% of total)
SMEs	2,366,227 (99.6%)	8,900,567 (76.0%)	3,244,974 (38.2%)
Large Enterprise and Others	9,141 (0.4%)	2,810,767 (24.0%)	5,239,226 (61.8%)
Total	2,375,368 (100%)	11,711,334 (100%)	8,484,200 (100.0%)

SME JAPAN

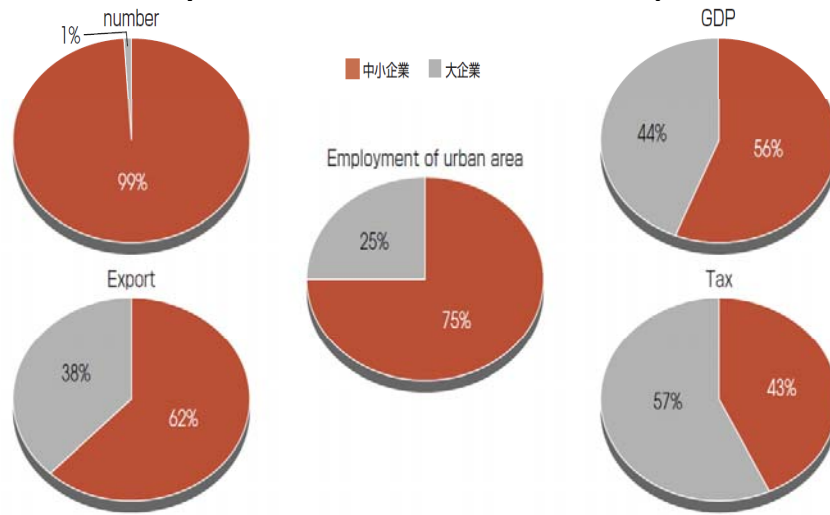


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50
34

SMEs in China

(Red Mark is SMEs' share)

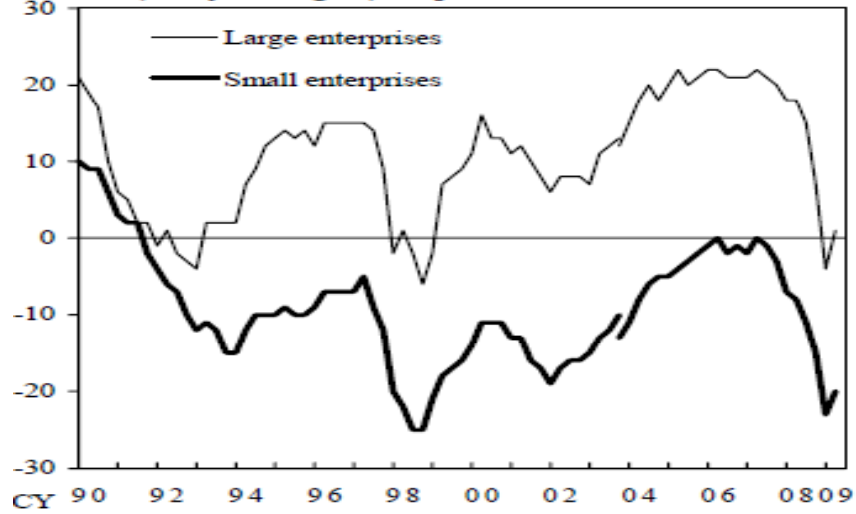


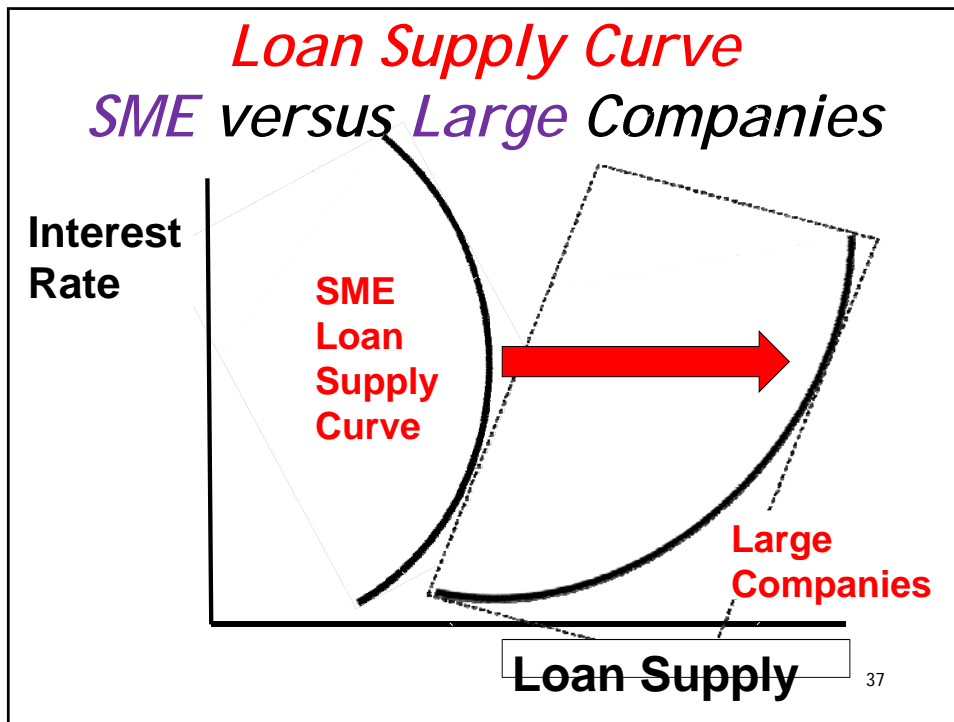
Source: Department of SMEs, China National Development and Reform Commission, June, 2004

(1) Financial Position

<Tankan¹>

DI("Easy" - "Tight"), % points





Bank's Profit Function

$$\Pi = r(L) \times L - \rho(L, Z) \times L - C(L)$$

Subject to Balance Sheet Condition ($L=D$)

→ First Order Condition

$$r = -r'(L) \times L - \rho(L, Z) - \rho'(L) \times L - C'(L)$$

$$r = d1 \times L - \rho(L, Z) - \rho'(L, Z) \times L - C'(L)$$

$$dr/dL = d1 - 2 \times \rho'(L, Z) - \rho''(L, Z) \times L - C''(L)$$

(+) (+) (+) (+)

Π =Profits, $r(L)$ =loan rate of interest, L =amount of bank loan, D =Deposit
 ρ =Default ratio, $C(L)$ =Cost function of bank, Z =CRD data

39

Discussions

1, Long term financing to corporations

Large corporations

2, large companies can access to bond market

3, SMEs and venture businesses

who will provide long term funds ?

4, Evaluation of risks of SMEs

5, SME database, CRD in Japan

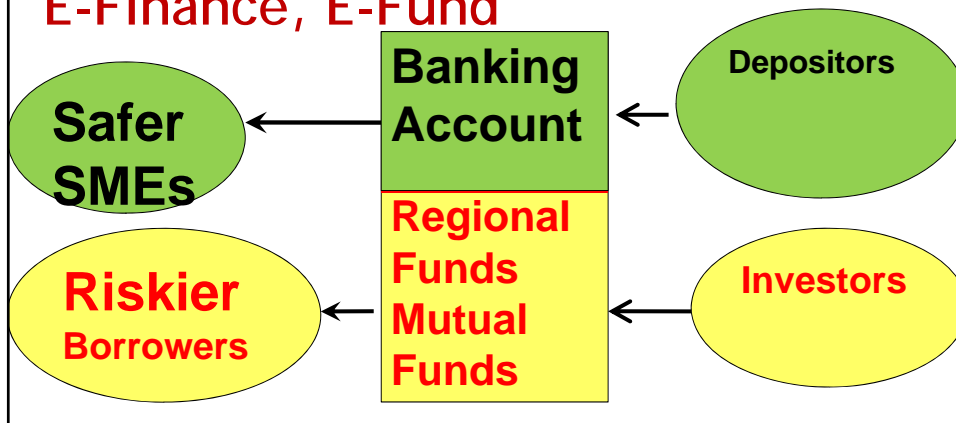
6, Regional mutual funds, E-funds

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



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)

41

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

42

Figure 1. Bank's balance sheet

Assets	Liabilities
Bank Loans Good Assets	Deposits
Non-Performing Loans (NPL) Bad Assets	Capital A(q ₂)

Revankar N. and Yoshino, N., (2008) "An Empirical Analysis of Japanese Banking Behavior in a Period of Financial Instability," *Keio Economic Studies*, Vol.45 No.1.

Yoshino, Naoyuki and Tomohiro Hirano (2011) "Pro-cyclicality of the Basel Capital Requirement Ratio and Its Impact on Banks" (*Asian Economic Papers*, MIT Press, Vol.10, No.2)).

43

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

44

Credit Rating System

1, AAA, AA, BBB

Single Number

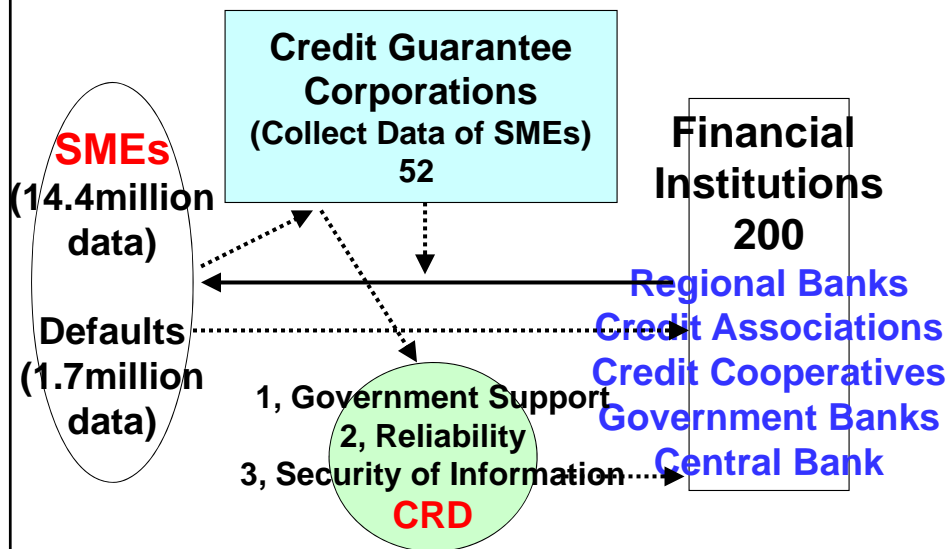
2, Various Characteristics needed to be focused on:

- (i) Growth potential
- (ii) Good Management
- (iii) Technology etc.

3, Sudden Down-grading after Crisis

45

SME Data base (CRD Data base)



46

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

47

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**

48

Risk Based Interest Rate

- (1) General Credit Risk
- (2) Credit Cost Ratio
[Default ratio]x(1-recovery rate)
- (3) Costs = Personal and Equipment
- (4) Interest rate to raise money
- (5) Monitoring of SMEs by banks

49

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

50

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

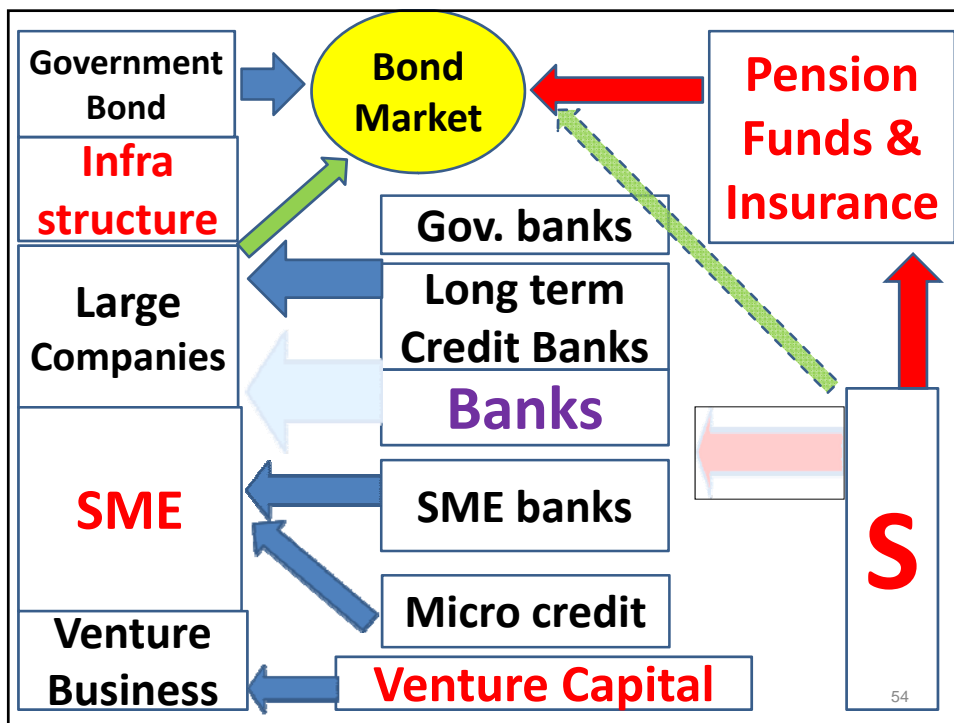
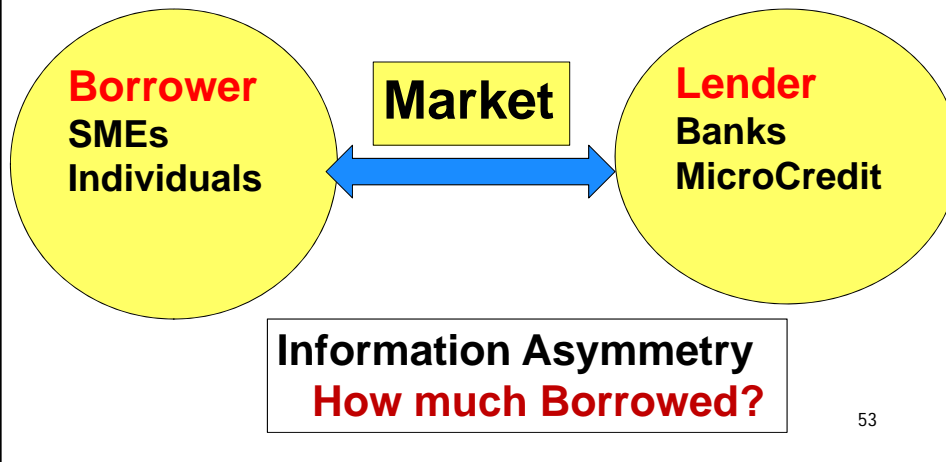
51

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

52

Borrower, Lender and Market



References

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*Development of Corporate Credit
Information Database and Credit
Guarantee System,*

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55