

Sustainable Growth For ASIA SME and Infrastructure

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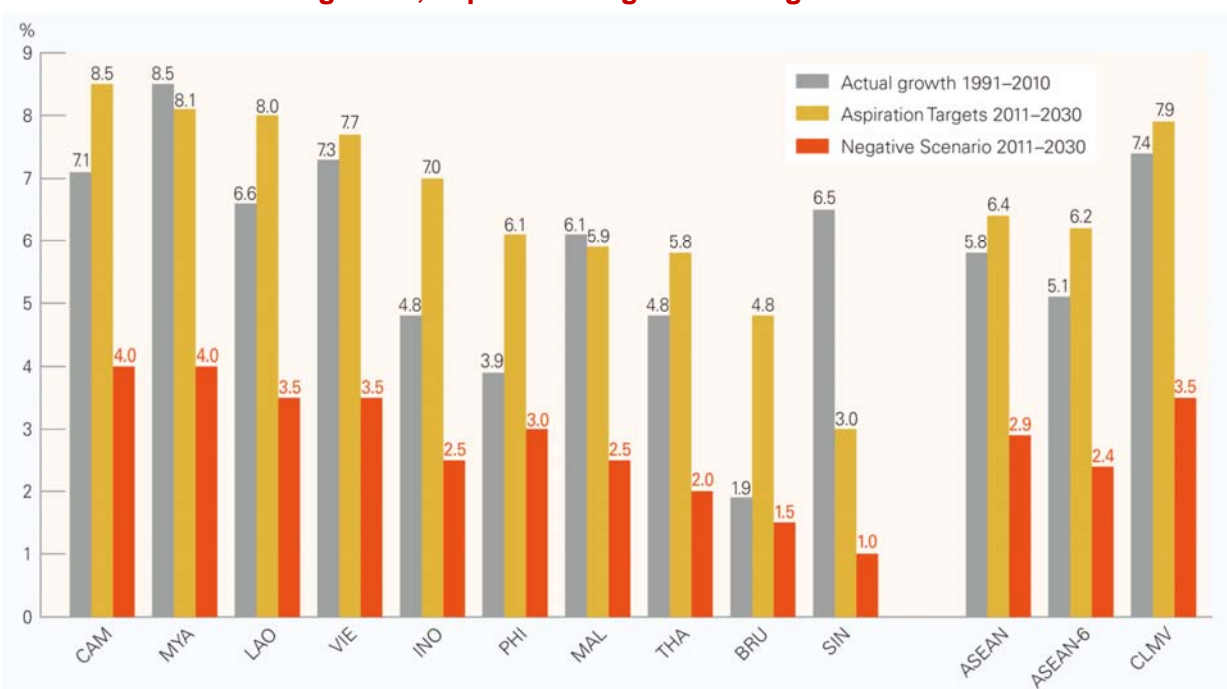
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February 27, 2014

ASEAN GDP Growth to 2030: Aspirations vs. Negative Scenario
Actual 1001-2010 growth; aspiration targets and negative scenario for 2010-2030



Source: ASEAN 2030: Toward a Borderless Economic Community
Asian Development Bank Institute 2014

Conditions for Sustainable Growth

1 Maintain political and macroeconomic stability
Sound monetary & fiscal policy and exchange rate policy

2 Support inclusive growth (income equality)
Housing policy, Inheritance tax (but savings kept abroad)
Equalization --- TAX (inheritance tax) & Transfer

3 Strengthen Central–Local government relations
Fiscal sustainability; Local government bonds

4 Promote competitiveness and innovation
Financing facilities for venture business and SMEs

→ *Hometown Investment Trust Funds*

→ *Banks -> difficult to lend start-up business*

5 Protect the environment and ensure
stable energy supply

6 Develop financial market
*Financial Inclusion, financial regulation and
financial education (access to finance)*

7 Education and Healthcare
*Good public school → Equal education
quality of teachers*

8 Enhance seamless connectivity
Infrastructure investment, free trade
→ *Pension funds and Insurance → long term investment*

9 Improve governance and transparency

Asian Financial Markets' Main Features

1. Bank-dominated financial system
2. Small share of bond markets --->
Needs for long term financing
3. Lack of long-term investors such as
pension funds and Life insurance
4. Bench mark bond market (sovereign bond)
Infrastructure bond, corporate bond
5. High percentage of SMEs
6. Large share of Microcredit (finance
companies); Lack of venture capital

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Where do Asian savings go?

Economy	Savings and Investment Ratios in Asia					
	Savings/GDP Ratio (%)			Investment/GDP ratio (%)		
	2007	2010	2011	2007	2010	2011
PRC Mainland	51.9	53.4	53.8	41.7	48.2	48.7
Hong Kong, China	33.3	29.9	29.2	20.9	23.7	23.8
Indonesia	27.3	33.3	31.1	24.9	32.5	32.9
Japan	28.5	23.8	23.9	23.7	20.2	21.4
Republic of Korea	31.5	31.9	29.6	29.4	29.2	28.2
Malaysia	37.5	32.9	33.1	21.6	21.4	21.8
Philippines	22.1	24.8	22.3	16.9	20.5	20.5
Singapore	48.4	46.0	45.8	21.1	23.8	26.0
Thailand	32.8	30.6	30.4	26.4	25.9	25.6

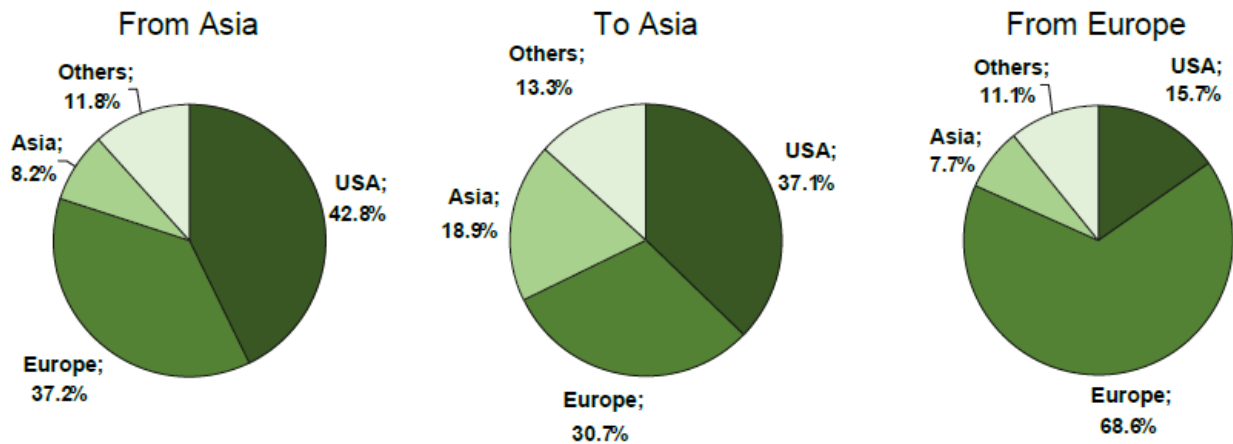
Note: Savings rate = gross national saving/GDP; Investment rate = gross capital formation/GDP.

Source: IMF, World Economic Outlook Database.

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Portfolio Investment Flows: To and From Asia (2011)

Portfolio Investment from the Asian Region to the World and Vice Versa
Direction of Portfolio Investment



Source: IMF, Coordinated Portfolio Investment Survey (CIPS).

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Analytical Framework for ASEAN SMEs

1. Human resource **development** (Local government) (skills, entrepreneurship, **Public School, teachers**)
2. Financial market development (**SME financing**)
3. Technology policy and R&D (**Hometown Trust**)
4. Marketing SMEs products and services (market access, **Use of Internet**)

$$Y_{SME} = A * F(N, K) \quad \text{where} \quad (K = K_p + K_g)$$

K_p = Banks, Bond Markets, Stock Markets, Own Capital

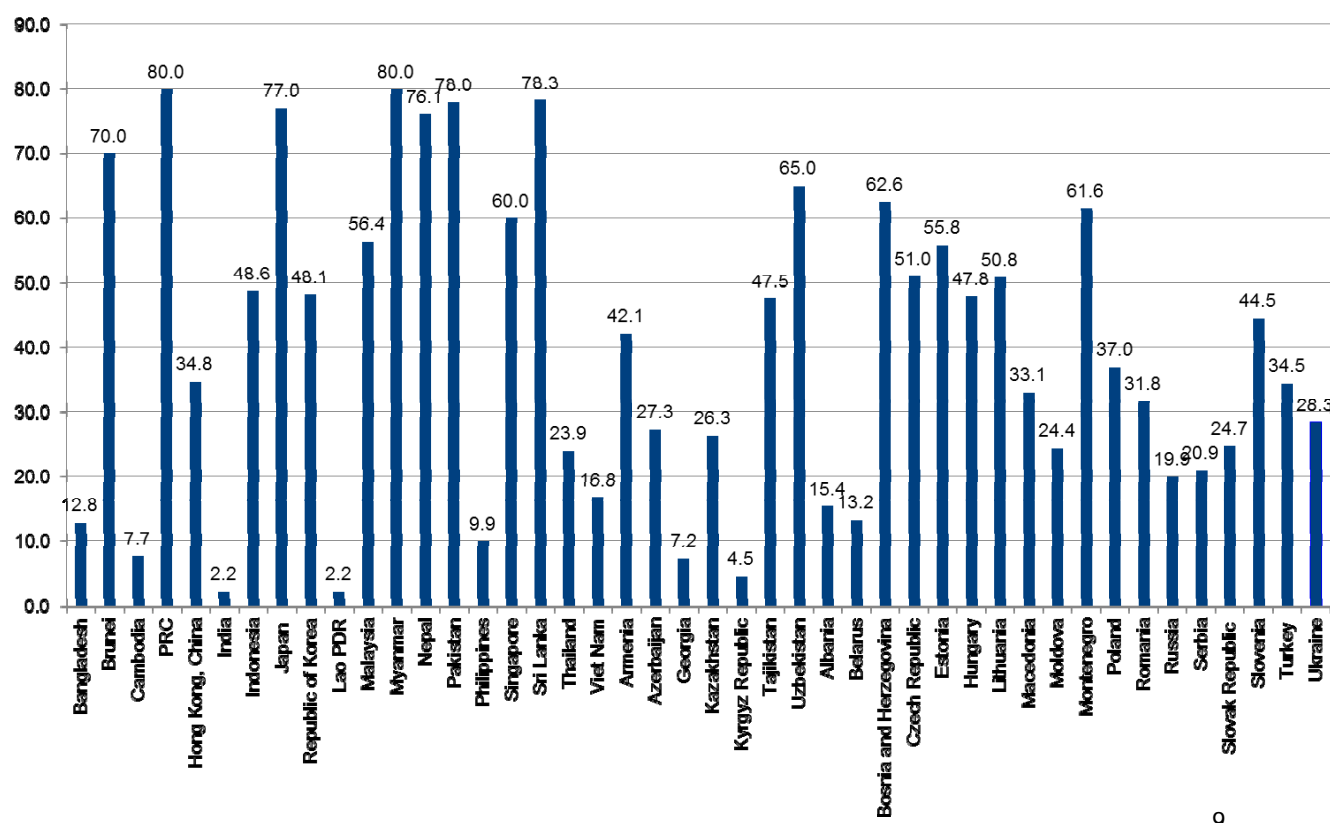
K_g = Infrastructure

Also Important

- Business-enabling environment and entry barriers for new firms
- Presence of industrial clusters/production networks
- Networking and dissemination of information

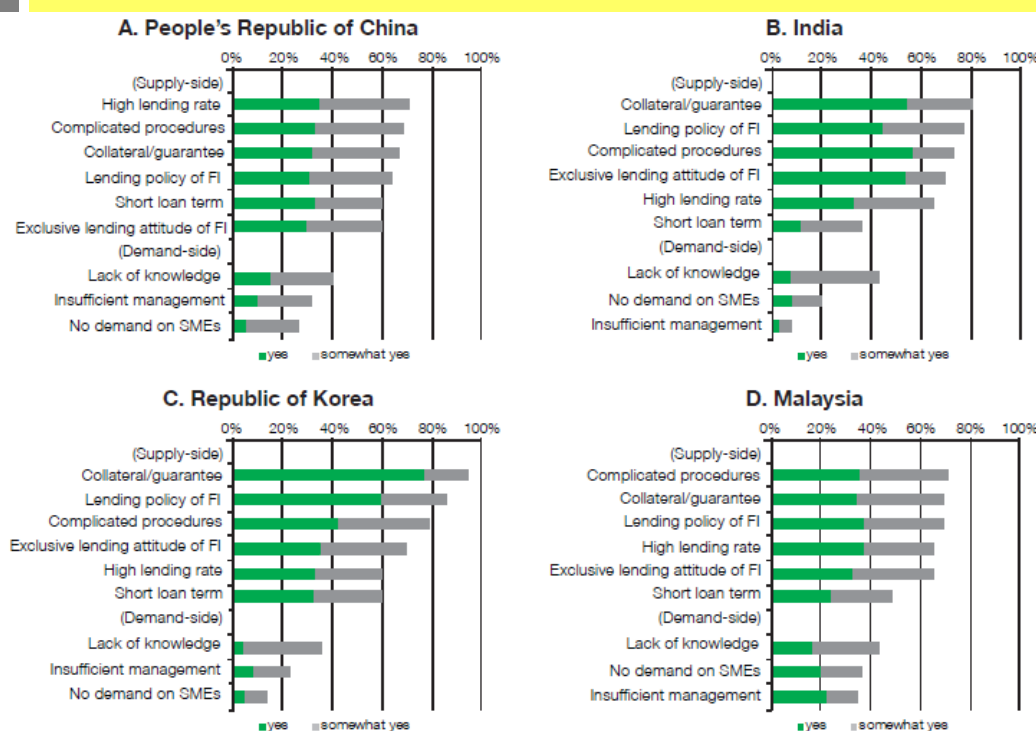
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SMEs Share in Employment (%)



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Barriers for SMEs in Accessing Financial Institutions



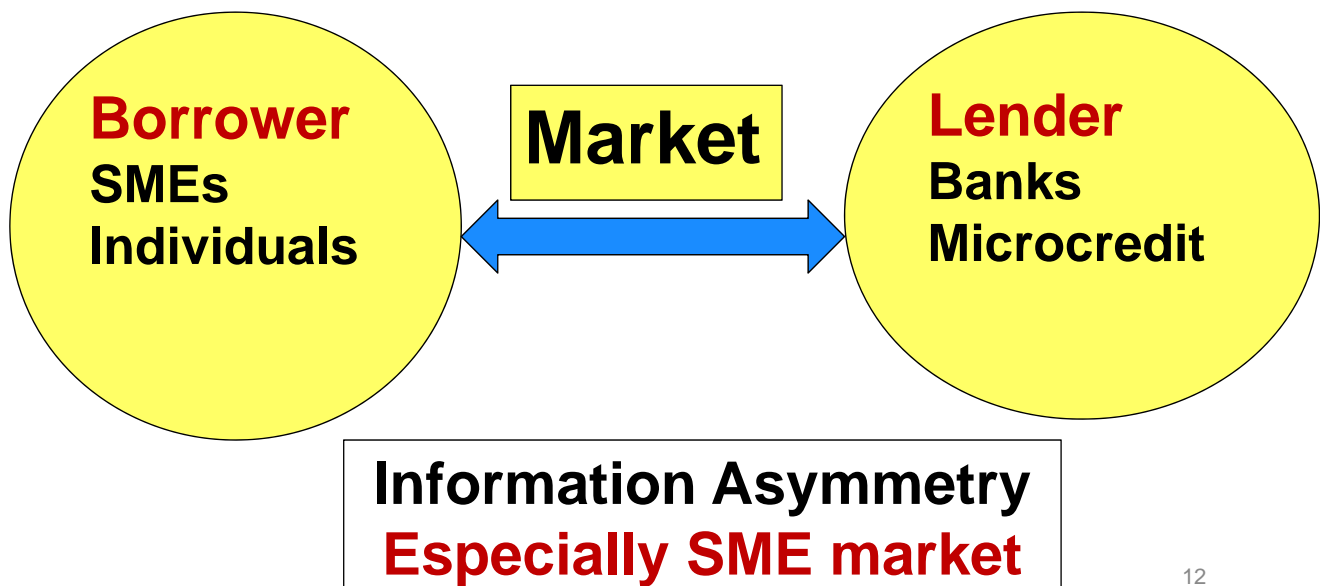
Source: ADB–OECD study on enhancing financial accessibility for SMEs: Lessons from recent crises. Mandaluyong City, Philippines: Asian Development Bank, 2013

Four Accounts by SME

- 1, Account to show **Bankers**
- 2, Account to show **tax authority**
- 3, His own account
- 4, Account to show to **his wife**

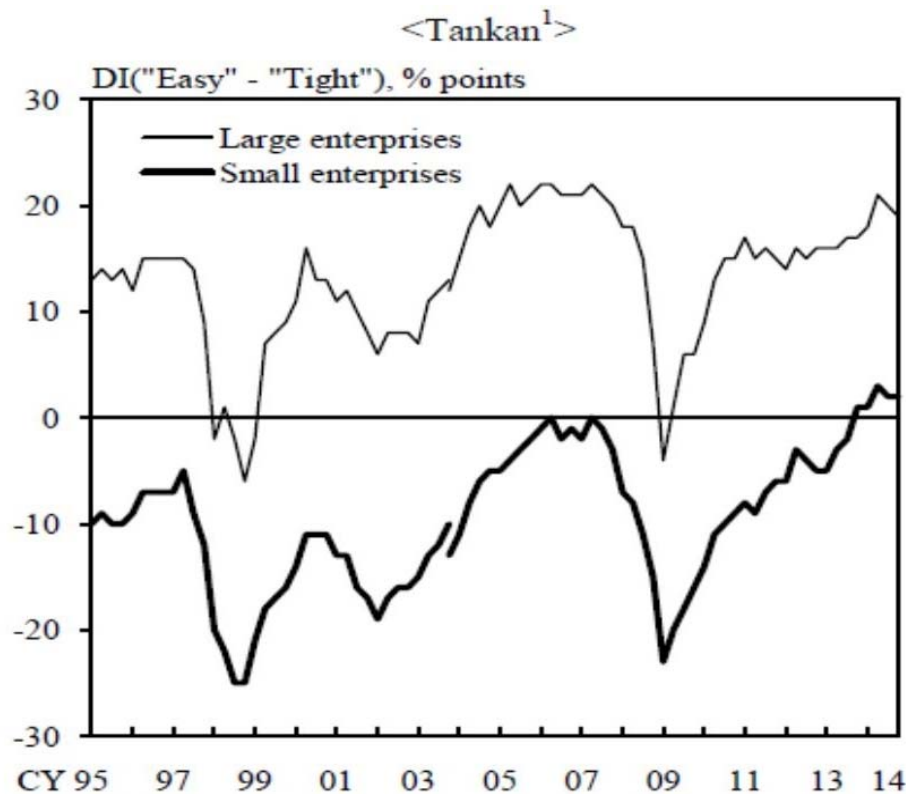
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Borrower, Lender and Market



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Access to Finance by SMEs and Large Firms in Japan



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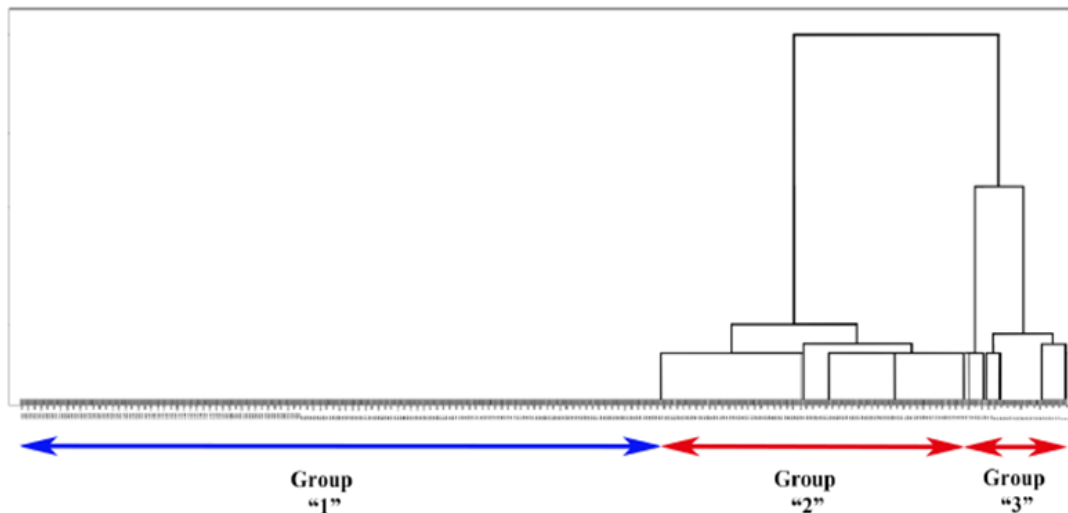
Examined Variable

No.	Symbol	Definition	Category
1	Equity_TL	Equity (book value)/total liabilities	Leverage
2	TL_Tassets	Total liabilities/total assets	
3	Cash_Tassets	Cash/total assets	Liquidity
4	WoC_Tassets	Working capital/total assets	
5	Cash_Sales	Cash/net sales	Profitability
6	EBIT_Sales	Ebit/sales	
7	Rinc_Tassets	Retained earnings/total assets	
8	Ninc_Sales	Net income/sales	Coverage
9	EBIT_IE	Ebit/interest expenses	
10	AP_Sales	Account payable/sales	Activity
11	AR_TL	Account receivable/total liabilities	

Note: Retained earnings = the percentage of net earnings not paid out as dividends, but retained by the company to be reinvested in its core business or to pay debt. It is recorded under shareholders' equity in the balance sheet. Ebit = earnings before interest and taxes. Account payable = an accounting entry that represents an entity's obligation to pay off a short-term debt to its creditors. The accounts payable entry is found on a balance sheet under current liabilities. Account receivable = money owed by customers (individuals or corporations) to another entity in exchange for goods or services that have been delivered or used, but not yet paid for. Receivables usually come in the form of operating lines of credit and are usually due within a relatively short time period, ranging from a few days to a year.

Cluster analysis: the average linkage method

Dendrogram Using Average Linkage



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Factor Loadings of Financial Variables

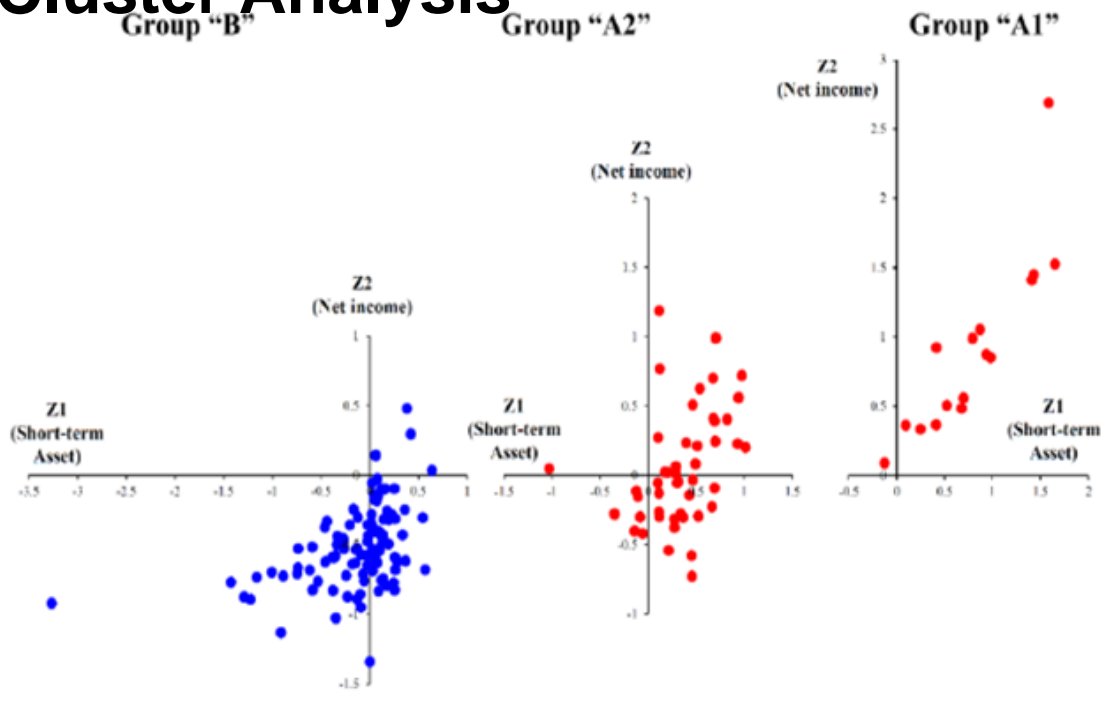
Variables (Financial Ratios)	Component			
	Z1	Z2	Z3	Z4
Equity_TL	0.009	0.068	0.113	0.705
TL_Tassets	-0.032	-0.878	0.069	-0.034
Cash_Tassets	-0.034	-0.061	0.811	0.098
WoC_Tassets	-0.05	0.762	0.044	0.179
Cash_Sales	-0.937	0.021	0.083	0.009
EBIT_Sales	0.962	0.008	0.024	-0.004
Rinc_Tassets	0.014	0.877	0.015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

Note: The extraction method was principal component analysis, The rotation method was direct oblmin with Kaiser normalization.

- (i) Sales **Z1**
- (ii) Assets **Z2**
- (iii) Liquidity (Cash) **Z3**
- (iv) Total Debt **Z4**

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Grouping Based on Principal Component Analysis (Z1-Z2) and Cluster Analysis



Credit Rating for SMEs and financial education by Use of SME Database

- 1, Credit Rating is only applicable to large companies
- 2, Credit Rating for SMEs based on SME Data
- 3, Three ranking of SMEs (Asian country)
Five ranking of SMEs (Japan's case)
- 4, Credit Guarantee ratio is determined
- 5, SME data can produce default risk ratio
- 6, Risk based Interest rate
- 7, Financial education for SMEs



Hometown Investment Trust Funds

A Stable Way to Supply Risk Capital

Yoshino, Naoyuki; Kaji Sahoko (Eds.)
2013, IX, 98 p. 41 illus., 20 illus. in color

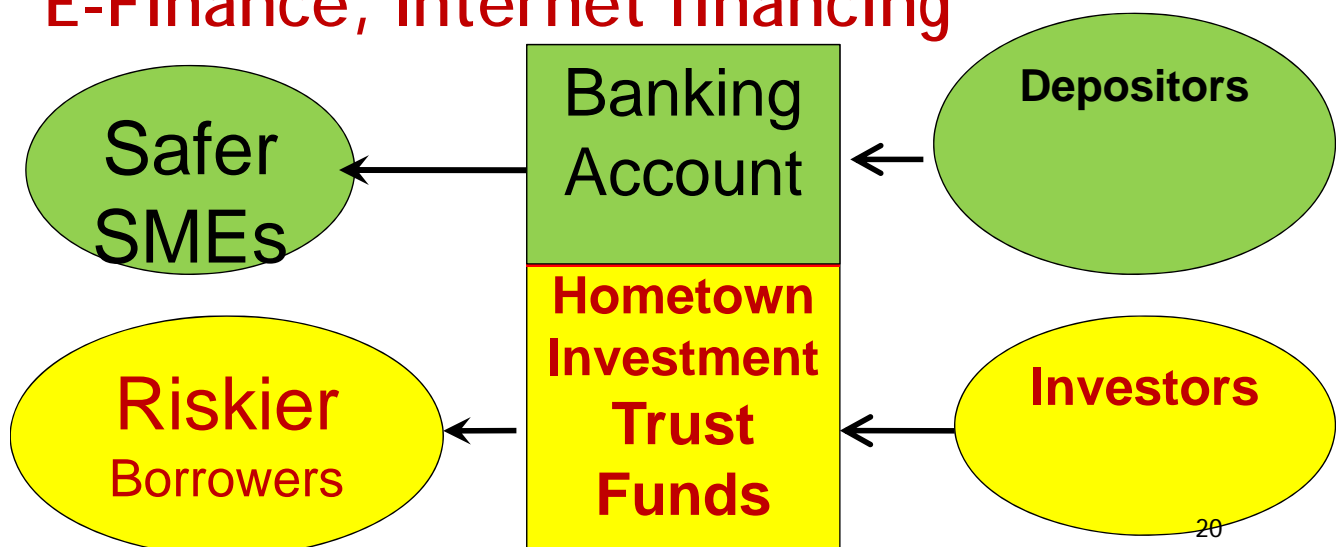
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Bank-based SME financing and regional financing to riskier borrowers

1. Bank Loans to relatively safer borrower
2. Hometown Investment Trust Funds

E-Finance, Internet financing



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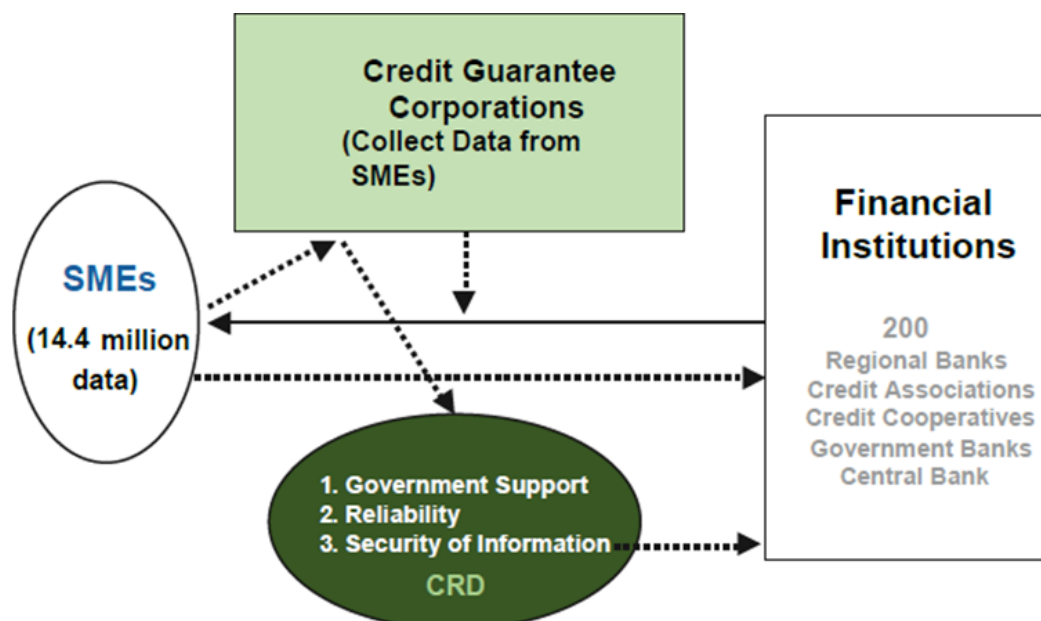
Agricultural Funds ***Beans and Wine***



Dec 11 2013 , Tehran - I
IRAN



Credit Risk Database of Credit Guarantee



Source: Yoshino (2012).

Credit Guarantee Mechanism

- 1, Credit Guarantee System
 - 100% guarantee
 - Partial guarantee (80%, 20%)
- 2, Differential guarantee ratio to each bank
 - based on their past performance
- 3, How to avoid moral hazard ?
- 4, To reduce information asymmetry
- 5, Temporary downturn of business
- 6, Structural downturn of business
- 7, Costs and Benefits of Credit Guarantee

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Optimal Credit Guarantee for SMEs

Policy Objective Function

$$U = w_1 (L - L^*)^2 + w_2 (\rho - \rho^*)^2$$

$$\text{where } L^* = (1 + a)L_{t-1} \quad \rho^* = \alpha \times \rho_{t-1}$$

Banks' Profit Maximization

$$\text{Max.} \quad \Pi = r_L(L) \times L - \rho(L, Z, P_L) \times L - r_D \times D - C(L, D)$$

$$\text{subject to} \quad (1 - \rho) \times L + \rho \times L = D + A \quad \text{Banks' B/S}$$

where Z = credit guarantee, P_L = land price

Optimal Credit guarantee ratio is obtained as

$$Z^* = f\{(L - L^*), (\rho - \rho^*), w_1, w_2, \rho'_L, \rho'_Z, d_1\}$$

→ **Optimal credit guarantee ratio is not 100%.**

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Regulation of Money Lenders in Rural Regions

1, Money lenders, **Interest rate = 96% in Japan**

2, License --- Banks

Registration --- Finance companies

3, **New Finance Company Law**

(i) Highest interest rate = 20%

(ii) Amount of borrowing < 1/3 of Income

(iii) Minimum Capital requirement

(iv) Paper test to run business

(v) Self regulatory organization was set up

two steps of monitoring and supervision

(vi) Consumers' complaints

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Two Types of Investors

Community Type Infrastructure

→ Hometown Investment Trust Funds

Wind power Generator Funds

Japanese Wine Fund

Local Airport

Agricultural Sector

Large Projects and Professional Investors

Pension Funds

Brown fields

Insurance companies

not green field

Mutual Funds

Reference—Cargill and Yoshino: "Postal Savings and Fiscal Investment in Japan". Oxford University Press

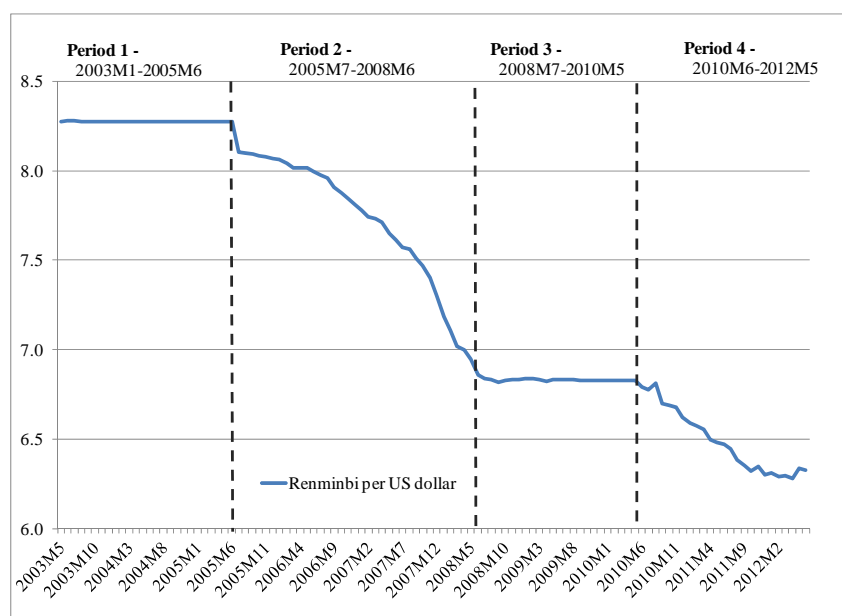
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Dynamic Transition of Exchange Rate Regime in China

Naoyuki Yoshino, Sahoko Kaji, Tamon Asonuma*

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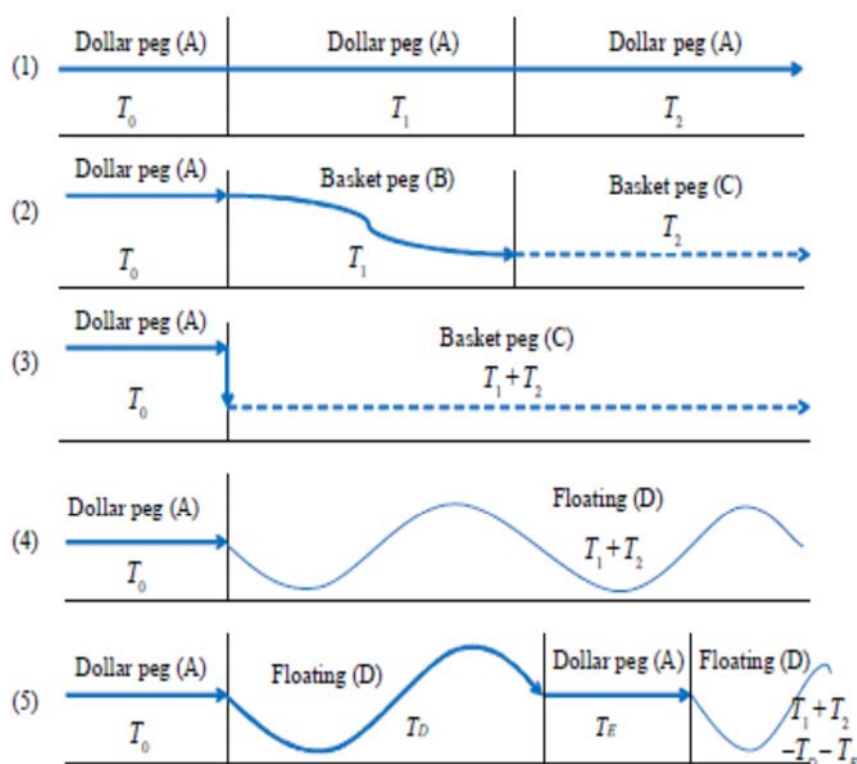
Sources: IMF IFS.

$$CNY_t = (b_{0,1} + \sum_{i=\{2,3,4\}} b_{0,i} D_i) + \sum_{j \in C} (b_{j,1} + \sum_{i=\{2,3,4\}} b_{j,i} D_i) X_{j,t} + u_t, \quad (1)$$

Table 1. Estimates of Weights on the US Dollar Rate

Sample period	Period 1 7 May 2003– 22 July 2005	Period 2 25 July 2005– 30 June 2008	Period 3 1 July 2008– 28 May 2010	Period 4 1 June 2010– 1 June 2012
Estimated weights on the US dollar rate	0.999** (0.001)	0.842** (0.036)	0.918** (0.017)	0.819** (0.039)

Figure 3. Five Policies to Follow in the Transition to Stable Regimes



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Quantitative analysis (cont.)

✦ Cumulative losses : $T_0=0$, $T_1=18$, & $T_2=18$

$$L(T_1, T_2) \equiv \sum_{t=1}^{T_0+T_1+T_2} \beta^{t-1} (y_t - \bar{y}')^2$$

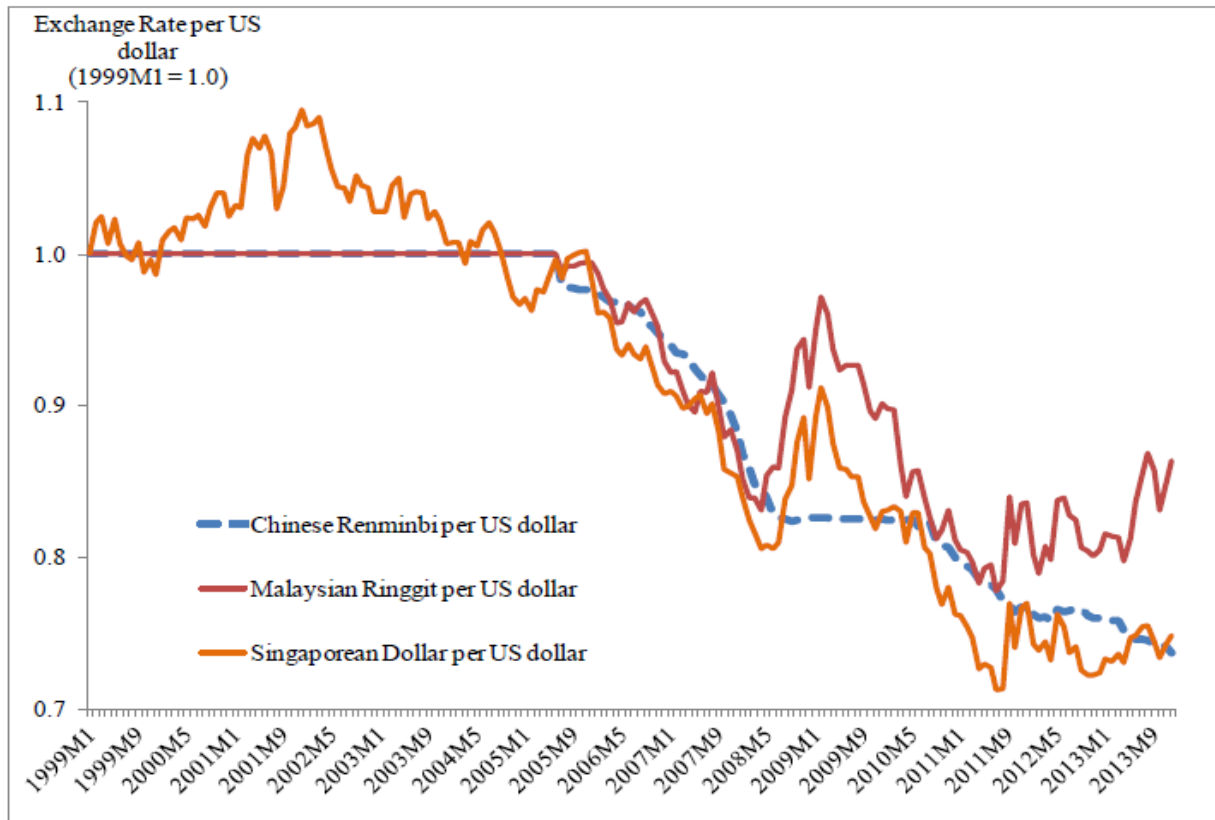
Table 8. Cumulative Losses and Optimal Values of Instruments

	Policy (1) Dollar peg	Policy (2) Basket peg	Policy (3) Basket peg	Policy (4) Floating	Policy (5) ^a Managed floating
Stable regime					
Adjustment	—	Gradual	Sudden	Sudden	Sudden
Instrument value	$i^* = 4.34$	$v^* = 0.58$	$v^{**} = 0.68$	$m^* = 0.016$	$m^{**} = 0.017$
Cumulative loss (value)	17.04	1.80	1.91	2.67	2.31
Cumulative loss (percent of $(\bar{y}^2)^*$) ^a	23.4	2.4	2.6	3.7	3.2

Source: Authors' calculations

Note: ^aWe calculate the value of \bar{y}^2 shown in Section IV and obtain $\bar{y}^2 = 72.8$. ^bFor $T = 7$, the cumulative loss is 3.54 ($m^{**} = 0.017$).

Motivation (cont.)



Sources: IMF IFS.

Quantitative analysis (cont.)

(1) Malaysia

	Policy (1)	Policy (2)	Policy (3)	Policy (4)	Policy (5)	Policy (6)
Stable regime	Dollar peg	Basket peg	Basket peg	Basket peg	Floating	Floating
Adjustment	-	Gradual	Sudden	Sudden	Sudden	Sudden
Basket weight	1.00	0.40	0.54	0.45	-	-
Cumulative loss (%)	17.51	17.35	17.46	17.46	24.31	25.93

Sources: Authors' calculations

(2) Singapore

	Policy (1)	Policy (2)	Policy (3)	Policy (4)	Policy (5)	Policy (6)
Stable regime	Dollar peg	Basket peg	Basket peg	Basket peg	Floating	Floating
Adjustment	-	Gradual	Sudden	Sudden	Sudden	Sudden
Basket weight	1.00	0.67	0.9	0.85	-	-
Cumulative loss (%)	45.60	45.56	45.64	45.61	60.51	64.18

Sources: Authors' calculations

References

- Yoshino N. (2012) “The Global Imbalance and the Development of Capital Flows among Asian Countries”, *OECD Journal: Financial Market Trends*, Volume 1, 2012
- Yoshino, N. Kaji, S. (2013) *Hometown Investment Trust Funds*, Springer, March 2013
- Yoshino, N and T. Hirano (2012) “Counter-Cyclical Buffer of the Basel Capital Requirement and Its Empirical Analysis”, chapter in *Current Developments in Monetary and Financial Law* (vol. 6): Restoring Financial Stability—The Legal Response, edited by the International Monetary Fund (IMF, 2012).
- Yoshino, N. and Farhad Taghizadeh (2015), “An Analysis of Challenges Faced by Japan’s Economy and Abenomics” *The Journal of Japanese Political Economy*, Taylor and Frances.
- Yoshino, N., Taghizadeh Hesary, F. (2015, Forthcoming), ‘Analytical Framework on Credit Risks for Financing SMEs in Asia’. *Asia-Pacific Development Journal*. United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP)
- Yoshino, N., S. Kaji and T. Asonuma (2015, Forthcoming), “Dynamic Analysis of the Exchange Rate Regime: Policy Implications for Emerging Countries in East Asia, *Review of Development Economics*, Blackwell publishing.