Risk Aggregation in the Indian Financial System

Dr. Ajay Shah

I. What is "good" risk aggregation?

II. Evaluating the Current State of Risk Aggregation

III. Government as a large risk aggregator

IV. Efficient mechanisms and markets to allocate risk

V. Regulation and management of systemic risk

VI. Capital adequacy and liquidity regime

VII. Distress Resolution

VIII. Key trends in risk aggregation

Can Risk be Transformed?

- The Transformation of Risk
  - Diversification
  - Risk Transfer
- Risk transfer can take place in three ways:
  - To the household balance sheet
  - To the "rest of the world"
  - The residual risk stays on the balance sheet of financial firms

*An efficient financial system must have sufficient capacity for **diversification** and **mechanisms for transfer** so that risks originated in the real economy can be **evaluated, priced, held and managed well**.*

Risk Aggregation

Key elements of 'good' risk aggregation

- Presence of an adequate number (and size) of risk aggregators to absorb a wide range of risks originated by the financial system
- Efficient mechanisms, liquid markets and regulations to allocate risk to entities best equipped to take them on must be available
- Risk aggregators must have the ability to measure, monitor , price and manage risk
- Robust capital adequacy and liquidity norms to enable risk aggregators to withstand sudden shocks
- There must be mechanisms to resolve the failure of aggregators and originators swiftly
- Transparent management and regulation of risk aggregators to ensure they are able to deal with plausible stress events
- Reliable and high quality data on risk aggregators must be available to monitor and manage counterparty risk and potential systemic risk to the financial system
- No risk aggregator should become 'too-big-to-fail'

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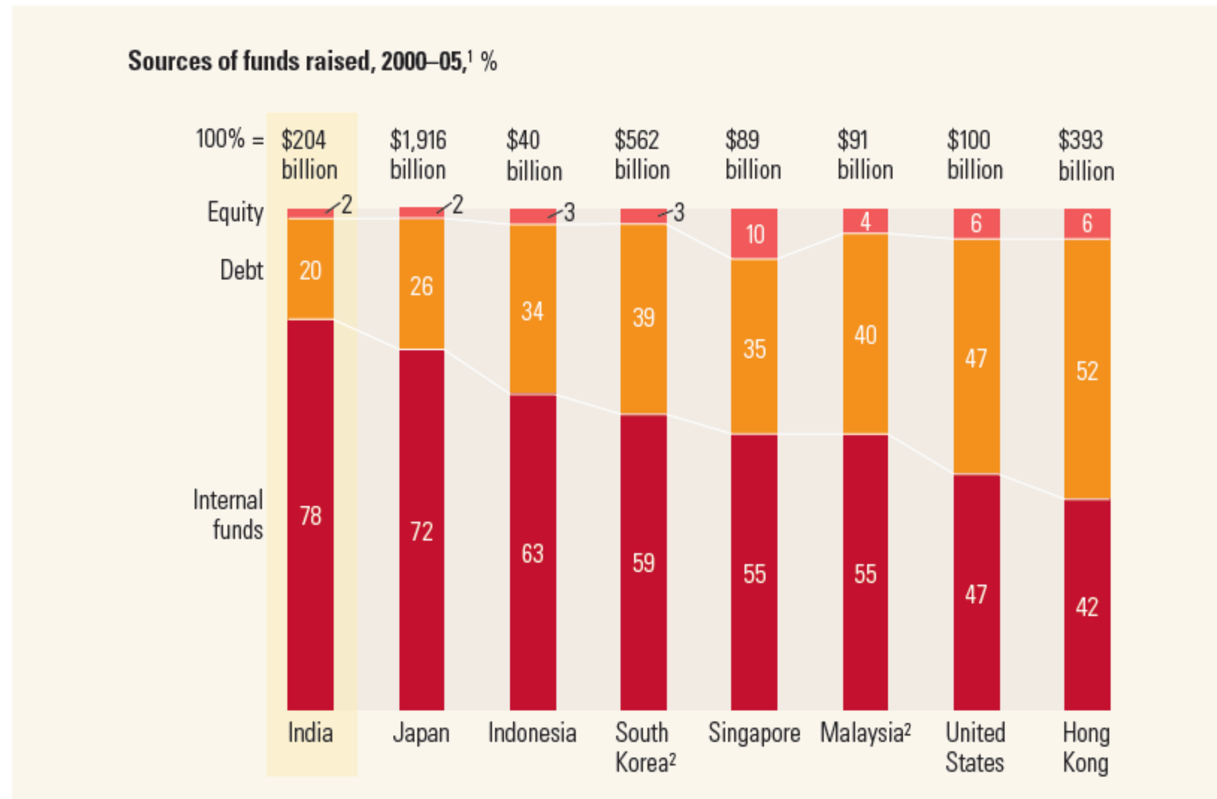
Current Scenario

Are the needs of the real economy being met?

- Private Indian companies mainly rely on internal funds to meet their financing requirements. During 2000 to 2005, internal funds accounted for nearly 80% of total funds raised

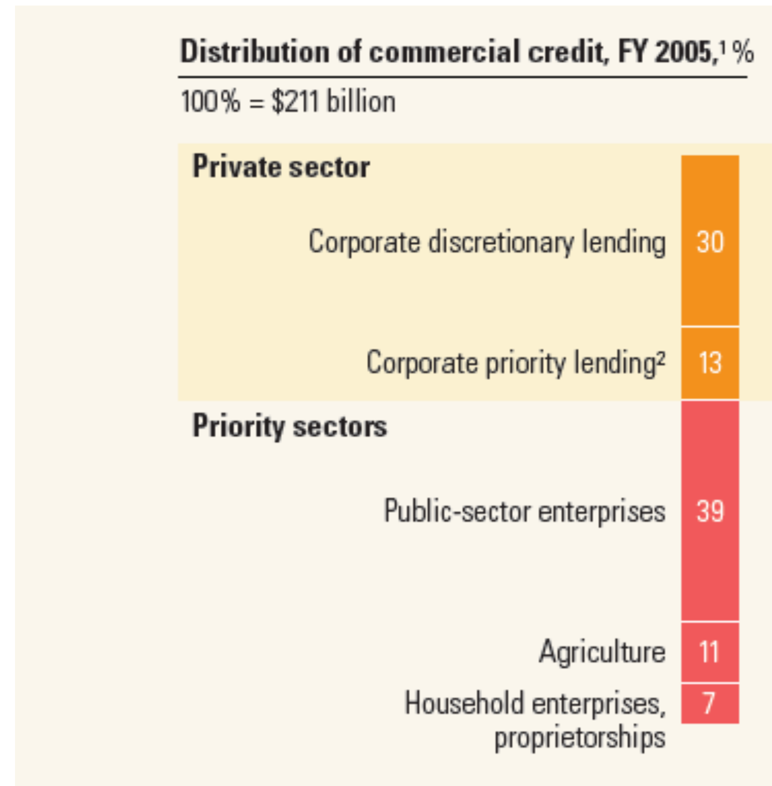


[1]Source: McKinsey Report 2006- India's Financial System : More market, less government

Current Scenario

Are the needs of the real economy being met? (2/3)

- As on 2005, private corporations receive just 30% of the country's total commercial credit excluding corporate lending mandated by priority sector requirements

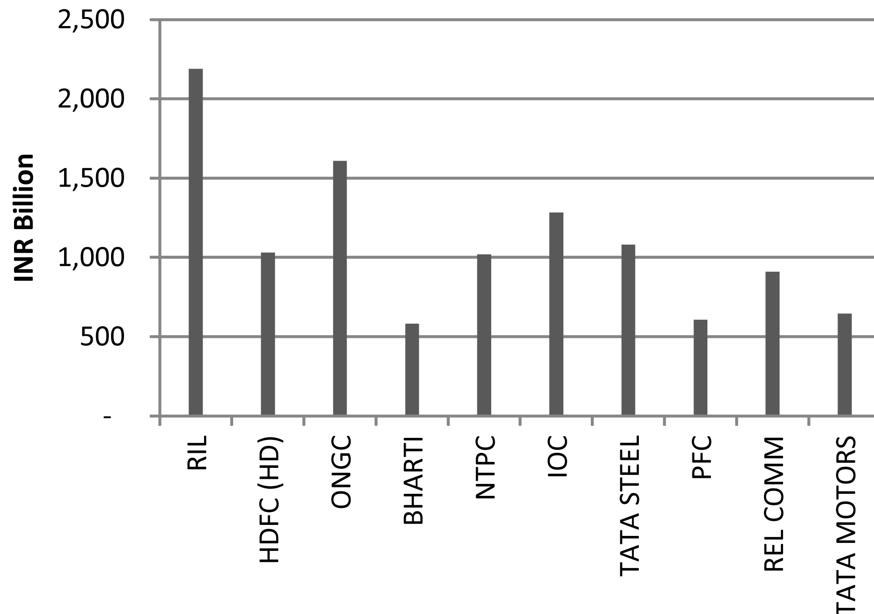


[1]*Source: McKinsey Report 2006- India's Financial System : More market, less government*

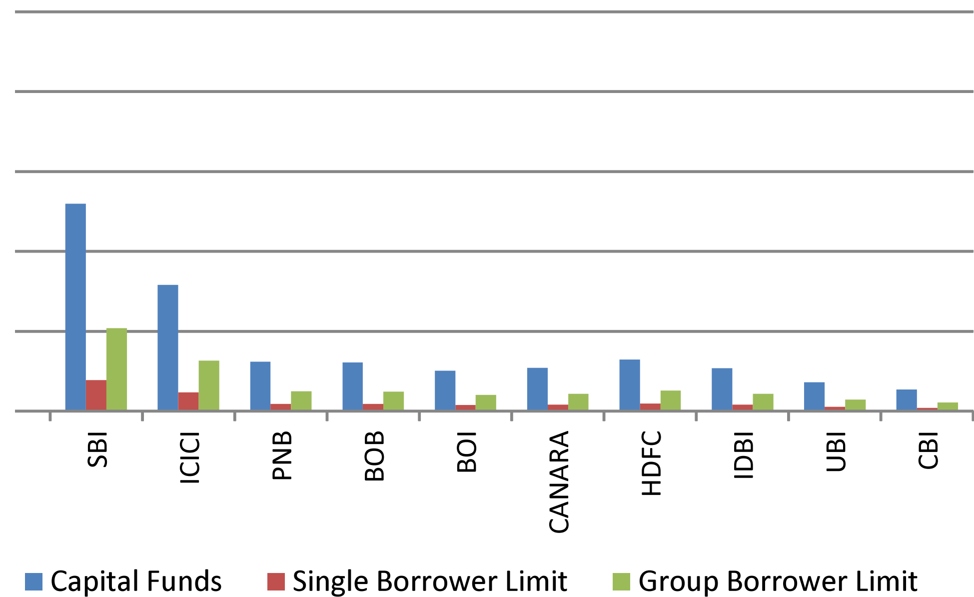
Current Scenario

Are the needs of the real economy being met? (3/3)

- A comparison of the asset size of the top ten corporates and exposure limits of the top ten banks below reveals the disparity in credit demand and supply



Assets of top 10 corporates as of 2011



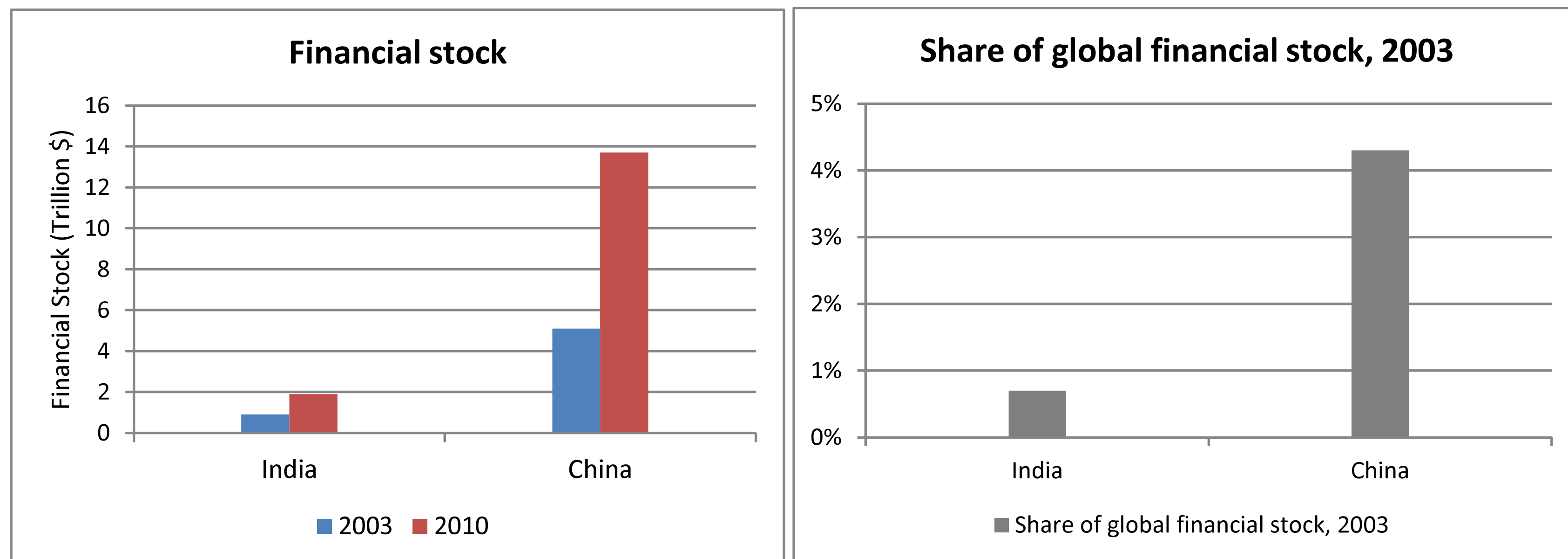
Capital funds and exposure limits of top 10 corporates as of 2011

Source: Respective financial statements and pillar-3 disclosure of banks, 2011

Current Scenario

Financial depth of the economy

- Financial depth in India's economy, measured by the ratio of the stock of financial assets to GDP was just 137%, far below China's 323%



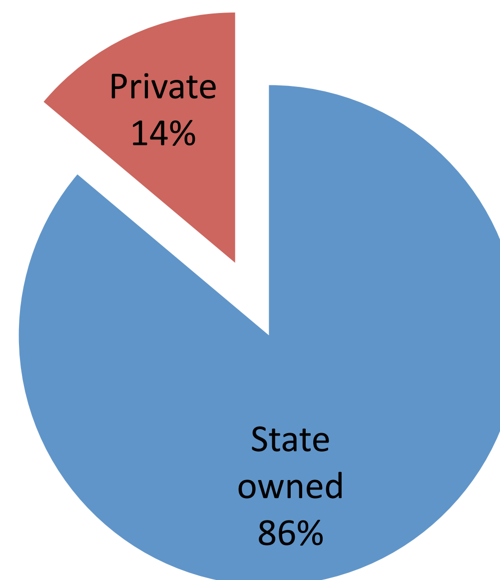
Source: Global Insight, MGI Global Financial Stock Database

Evaluation of the Current Scenario

Government as a large risk aggregator

- Risk aggregation in the Indian financial system even today is largely being executed by government owned institutions or directed by the government

Risk Aggregator	Liabilities/GDP
LIC*(as of Dec, 2010)	15.73%
SBI	13.37%
PNB	4.37%
ICICI	4.25%
BoB	4.16%
BoI	4.07%
HDFC	2.83%
NABARD	1.89%
SIDBI	0.55%
NHB	0.27%



Liabilities of Top 10 risk aggregators

Source: Respective financial statements

Evaluation of the Current Scenario

Debt market dominated by government bonds

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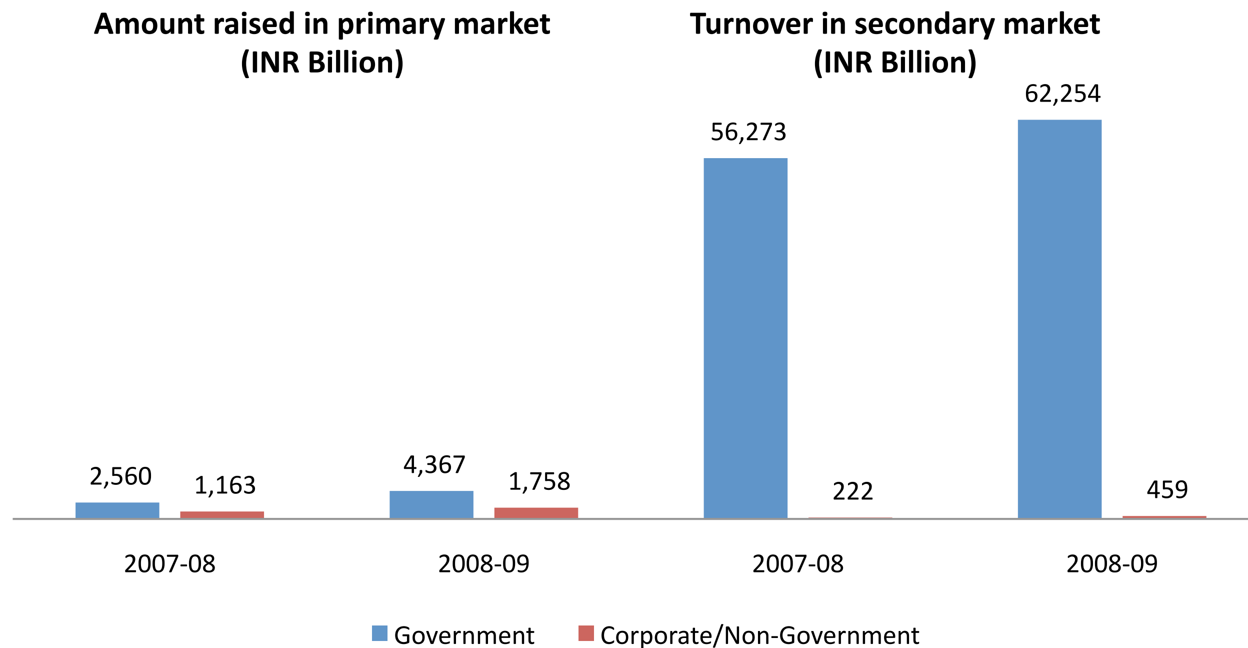

Source: ISMR, NSE, 2009

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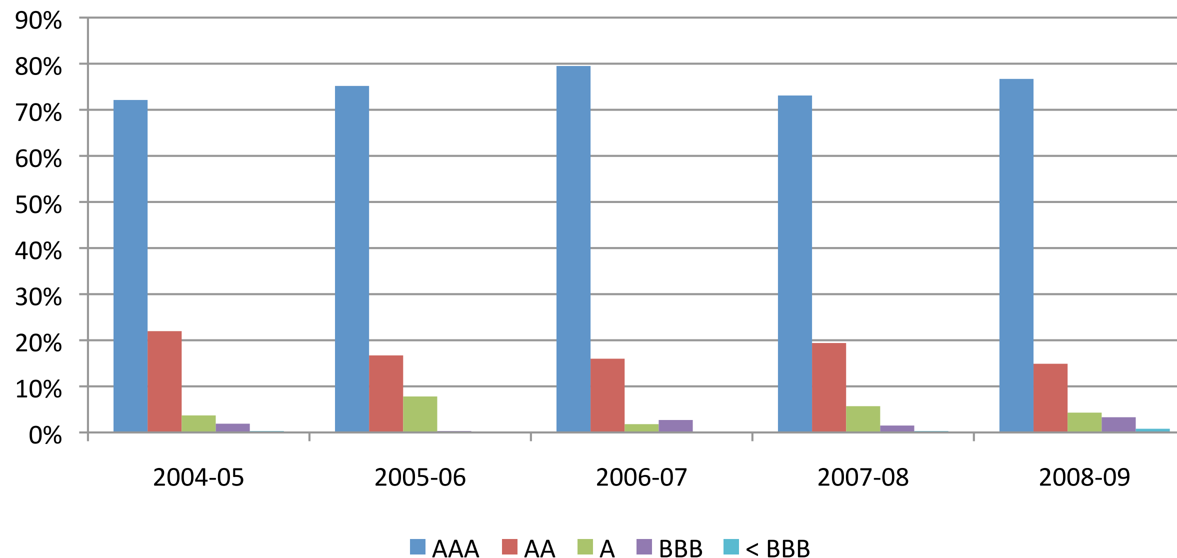
Evaluation of Current Scenario

Efficient mechanisms and markets: Debt market

- Debt market is dominated by government bonds, with the corporate bond market accounting for only 3.3% of GDP in 2010
- Distribution of corporate bonds issued by rating indicates that the number of sub-investment grade issues is minimal and the proportion below AA is small (less than 8%)



Source: ADB Working Paper on the Indian Bond Market

Evaluation of Current Scenario

Efficient mechanisms and markets: Derivative market

- Derivatives market in India is highly regulated and is still in its nascent stages. Only foreign exchange and interest rate derivatives are allowed.
- Liquidity in the derivative markets is severely limited by regulations that allow only banks to participate as market makers.
- The credit derivatives market is absent as the RBI currently does not permit such derivatives, however, recently RBI released guidelines for the introduction of credit default swaps referenced to corporate bonds.

Derivative positions outstanding in the banking system book (in INR Billions)	
Total FOREX contracts outstanding	36.14
Single currency interest rate swap contracts outstanding	46.00
Overnight index swaps (OIS) based on overnight MIBOR outstanding	5.20

Source: RBI Deputy Governor, Shyamala Gopinath's speech. Figures above are as of 31st December 2009

Evaluation of current scenario

Management and regulation of risk aggregators: Key gaps

- Multiplicity of regulators controlling different sectors causing inter-agency coordination problem which is essential for the regulation of financial conglomerates
- Absence of supervision for cross market activities combined with lack of efficient mechanism for inter-regulatory exchange of information
- Presence of various statutes (such as SBI Act, the LIC Act, the GIC Act, the Bank Nationalization Act) governing the risk aggregators creating a non-level playing field

Lessons from the Dodd-Frank Act, 2010	
Identifying and addressing the systemic risk by setting up an oversight council which can identify systemically important entities	Ending the bailouts of too-big-to-fail companies using tax-payers money by creating an orderly liquidation mechanism
Expanding the authority of the central bank to regulate all financial institutions identified as systemically important	Increased oversight of credit rating agencies

Evaluation of current scenario

Capital adequacy and liquidity regime

- RBI guidelines on Basel II require banks to maintain a minimum ratio of total capital to risk weighted assets (CRAR) of 9.0%, with a minimum Tier-1 capital adequacy ratio of 6.0%

Bank	CRAR (2009-10)
SBI	13.39%
PNB	14.16%
ICICI	19.41%
BoB	14.26%
BoI	12.94%
HDFC	17.44%

- For liquidity management, banks are required to monitor their cumulative mismatches across all time buckets in their Structural Liquidity analysis.
- The mismatches during the time buckets of next day, 2-7, 8-14 days and 15-28 days in the normal course, are not to exceed 5 % ,10%, 15 % and 20 % of the cash outflows for respective buckets
- Banks are required to follow Basel 2's rating based approach

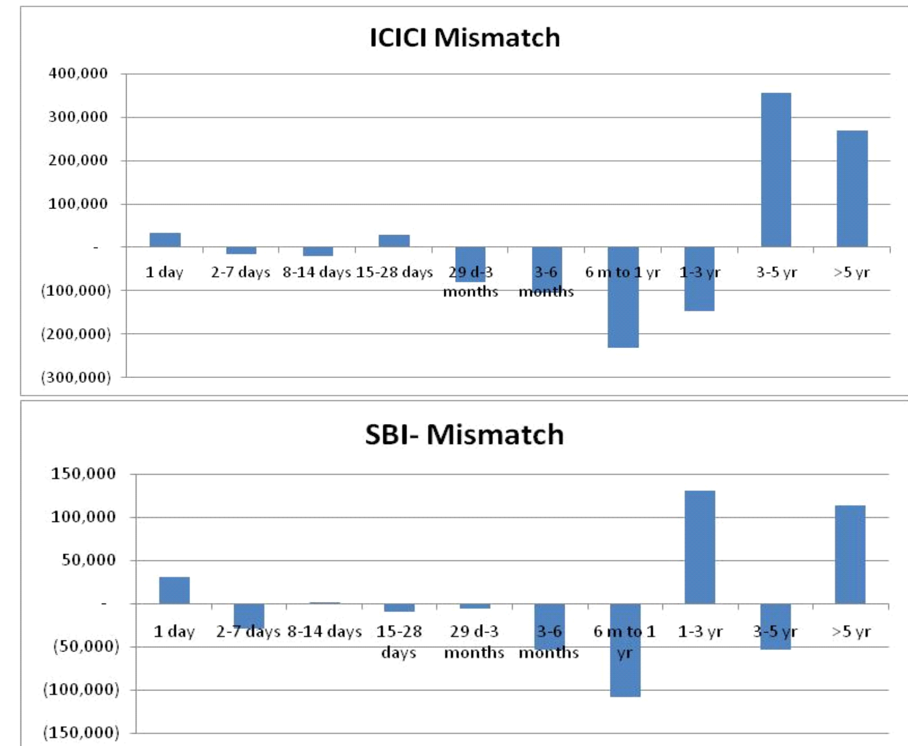
Source: Respective financial statements of the banks

Duration Risk: A Case Study

Case Study: Are Indian Banks carrying too much duration risk?

Typically banks finance their long term assets with short term liabilities. For instance, a commercial bank usually holds long term infrastructure bonds on its books as a part of its role as risk aggregator to the financial system. In normal market conditions such bonds may not have a negative impact on the bank's ALM. However during stressed liquidity conditions in the market, coupled with inflated liability as a result of distress, such bonds may become highly illiquid creating a negative liquidity mismatch in the short term bucket.

An analysis of the static liquidity positions of the top three banks in India reveals that the banks hold significant negative mismatches in the 3 to 6 month and 6 month to 1year buckets, leaving them open to liquidity risk in the event of a failure of the short term money markets.



Figures in crores

Evaluation of current scenario

Timely management of distress in risk aggregators

- Distress resolution in Indian financial markets is supported by clearing houses (like NSCCL) and Deposit Guarantors (like DICGC)
- NSCCL assumes the counter-party risk of each member and guarantees settlement through a risk management system, thus shielding the financial system, to an extent, from a systemic shock due to counterparty risk
- DICGC provides deposit insurance of INR 1 lakh per person, provides an extensive net for ‘unsophisticated’ depositors as over 98% deposits of all banks deposit fall below this limit

Key issues and recommendations as per the Raghuram Rajan Committee

- A Flat insurance premium of .05% is charged to all the banks thus creating less incentive for financial discipline for weaker banks
- DICGC lacks the financial capital required to cope with the failure of one or more large banks in a business cycle downturn
- DICGC lacks the operational capability to close down a bank swiftly, cleanly and pre-emptively
- DICGC should build capability for swift and clean intervention so that impaired banks can be resolved without delay
- Automatic triggers should be used to initiate corrective action and bank resolution

Key trends in risk aggregation

- **Establishment of the FSDC**: Focussed on strengthening the financial conglomerates monitoring framework, addressing regulatory gaps and inter-regulatory issues related to systemic risk.
- **RBI Guidelines for the introduction of the credit derivatives market**: The introduction of credit derivatives is expected to significantly deepen the corporate bonds market. However, the impact will be limited for now, as CDS is proposed to be allowed only on NCDs and not standardised syndicated bank loans.
- **Listing of securitised debt instruments**: SEBI has recently allowed exchanges to list securitised paper. This will lead to greater trading in the secondary market for securitised debt instruments as well as more efficient price discovery.
- **Establishment of FSLRC:** The government has embarked on a comprehensive rewrite of financial law, through the `Financial Sector Legislative Reforms Commission' (FSLRC), chaired by Justice Srikrishna. The decisions made by FSLRC are likely to have a far-reaching impact upon the capabilities of the Indian financial system in coming decades.

Moving Forward

Role of government as a large risk aggregator

Regulation and management of systemically important risk aggregators

Risk management capability within the financial system

Legal frameworks and institutional capacities to resolve distress

Thank you