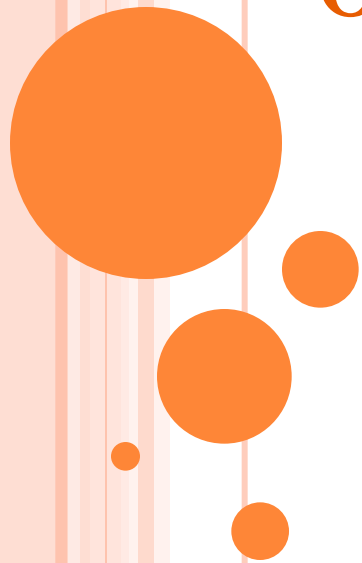


CAPITAL PLANNING, LIQUIDITY MANAGEMENT AND PROFIT OPTIMIZATION

CAFRAL



INTRODUCTION

- The global crisis of 2009 which started with Lehman brother collapse, and assumed epic proportions has underlined the importance of sound bank liquidity and adequate capital buffers. Under the pre-crisis capital adequacy rules, the minimum regulatory capital levels of banks were insufficient in relation to the exposures and actual losses of the banks suffered during the financial crisis. Also the quality of regulatory capital appeared often insufficient to absorb bank losses effectively. Moreover, Basel I and II focused on capital only, with no internationally agreed quantitative standards for liquidity.
- In response to the crisis, regulators came together and started working on new capital & liquidity standards with the aim of making the financial system more stable and resilient. The efforts culminated into the introduction of Basel III guidelines. While it is generally agreed upon that banks undervalued liquidity prior to the recent financial crisis, one must also consider the tradeoff between resilience to liquidity shocks and the cost of holding lower-yielding liquid assets.

INTRODUCTION CONTD..

- The credit risk associated with a bank is decomposed into “insolvency risk” the term creditors, and “illiquidity risk” the probability of a default due to a run when the conditional probability of default due to deterioration of asset quality assuming no run by short institution would otherwise have been solvent.
- Thus while capital takes care of the “insolvency risk”, the “illiquidity risk” is covered by sufficient liquid assets. Banks and supervisors have recognized the operational benefits of additional capital and liquidity, along with the benefits in terms of market perception. A relatively high CRAR and strong liquid asset pool represents a more robust bank to investors and funding markets.
- Thus, overall, one expects capital and liquid assets to exhibit a non-linear relationship to bank profitability in which increasing liquid assets would improve a bank’s profitability, as long as the marginal benefit of holding additional capital or liquid assets outweighs the opportunity cost of their low relative return.
- Thus the onus is on banks to internally determine their optimal capital and liquidity buffers so as to not to compromise on profitability.

NEED FOR CAPITAL – IS IT ONLY A REGULATORY REQUIREMENT ?

- Buffer against failure - Reduces the risk of failure by providing a buffer against losses and shortfalls in cash flow
- Source of Funds - Funds the growth & expansion or modernization plans
- Creditor's Protection - Utilized to pay-off unpaid debts in case of liquidation or crisis
- Risk Appetite - Encourages banks to undertake less risk as capital is at risk in case of failure
- Liquidity - Provides access to financial markets to meet liquidity needs

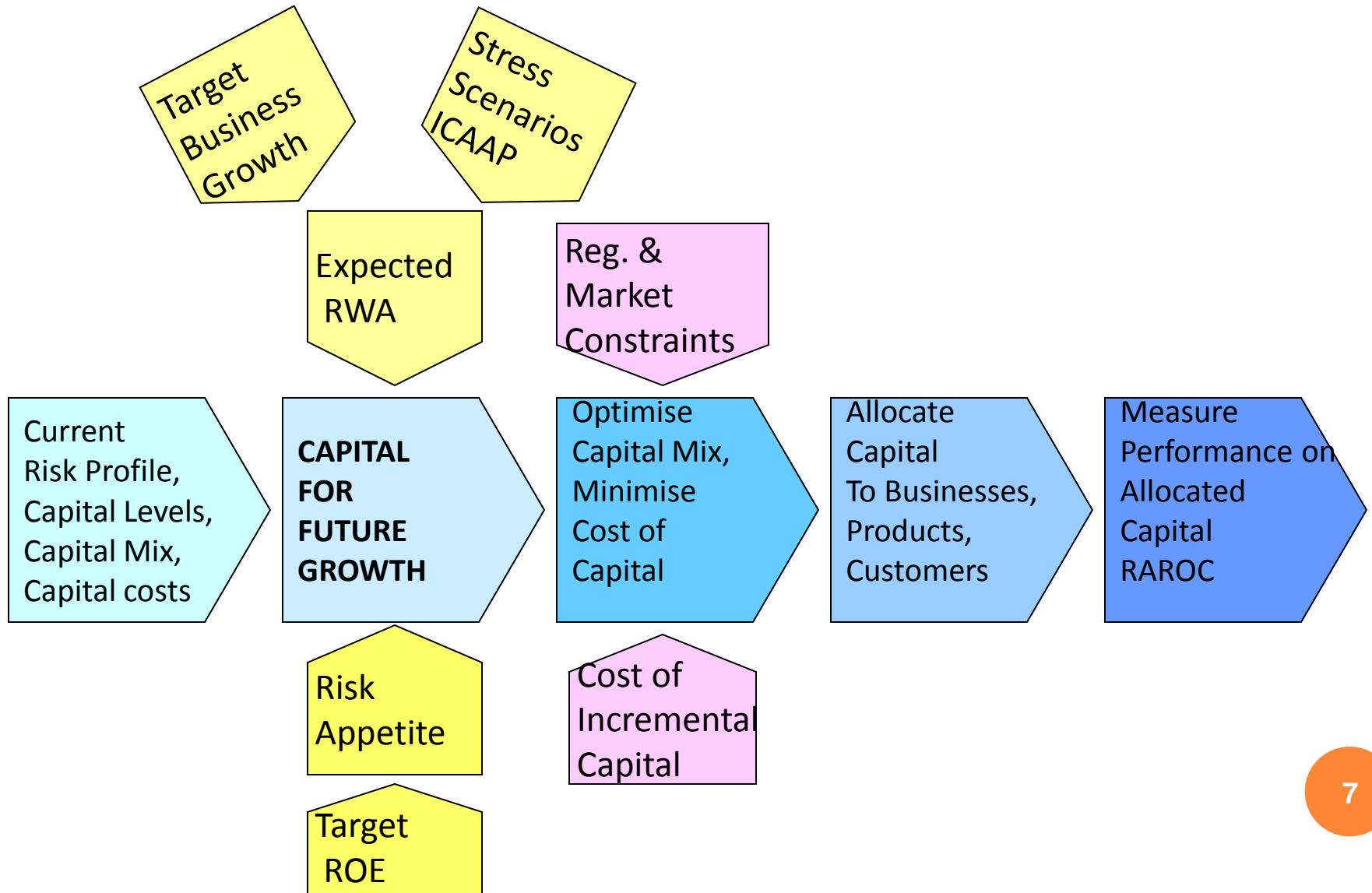
THE NEED FOR CAPITAL PLANNING

- Basel III will result in less available capital to cover higher RWA requirements and more stringent minimum coverage for quantity and quality of bank capital
- More capital will be required to continue to operate above higher minimum buffers, but then,
 - Capital is scarce
 - Capital is costly
 - Capital is not continuously available
- Government reluctant to provide additional equity infusion.
 - Need for optimal use of capital
 - As on September 14, the CRAR of SCBs stood at 12.80%

CAPITAL PLANNING PROCESS

- Capital planning should be in tune with the business plan of the bank at present keeping in mind the desired business plan for the future. It should follow a forward looking approach taking into consideration, the target growth, target RoE and target CRAR (to cover both Pillar 1 and Pillar 2 risks). To achieve the objective capital planning should be an integral part of ICAAP.
- Within the regulatory and Market constraints (for raising capital), the aim of the capital planning process should be to arrive at an optimal Capital Mix, Minimize the Cost of Capital and ensure efficient use of allocated capital. This can be ensured by measuring the performance of the business on parameters like RAROC rather than merely the amount of profit generated by a business unit.

CAPITAL PLANNING PROCESS



BANK CAPITAL LEVELS DURING FINANCIAL CRISIS

- Quantum of good quality capital (primarily, Common Equity) required under Basel II was too low
- As reported in an IMF paper, Tangible common equity ratios for some banks had fallen to below 2% of RWA whereas, the reported Tier 1 ratios were significantly higher at 7-8%
- This shows that banks did not focus on quality of capital.
- Are banks banking on bonds which are actually borrowings ?

INDIAN BANKS VIS-À-VIS INTERNATIONAL BANKS

- Which are the countries which are more or less capitalized than Indian Banks. Are they better countries. Higher capital does not mean higher efficiency ?
- Higher Capital leads to higher public confidence.
- But Higher Capital levels need not necessarily reflect the Resilience of a Bank to withstand potential shocks considering the differential treatment to Pillar II risks across various jurisdictions

LEVELS OF CAPITAL RATIOS OF BANKS IN SELECT ECONOMIES

Levels of Capital Adequacy Ratios of Banks in Select Economies

Country	2007	2008	2009	2010	2011*
Advanced economies					
France	10.2	10.5	12.4	12.3	...
Germany	12.9	13.6	14.8	16.1	16.6
Greece	11.2	9.4	11.7	11.4	12.3
Italy	10.4	10.8	12.1	12.3	...
Japan	12.3	12.4	15.8	16.7	...
Portugal	10.4	9.4	10.5	10.2	10.5
Spain	11.4	11.3	12.2	11.8	...
United Kingdom	12.6	12.9	14.8	15.9	...
United States	12.8	12.8	14.3	15.3	15.5
Emerging and developing economies					
Brazil	18.7	18.2	18.9	17.6	18.2
China	8.4	12	11.4	12.2	11.8
India	12.3	13	13.2	13.6	...
Malaysia	14.4	15.5	18.2	17.5	16.4
Mexico	15.9	15.3	16.5	16.9	16.5
Russia	15.5	16.8	20.9	18.1	17.2

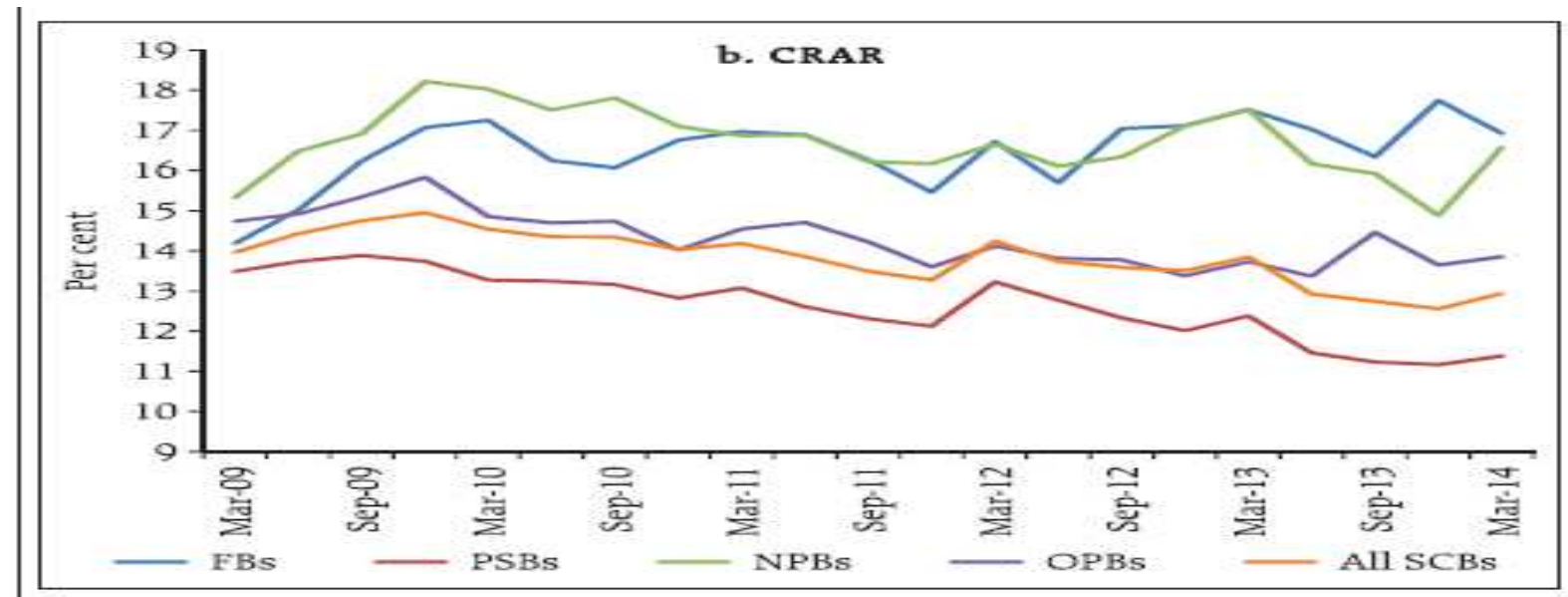
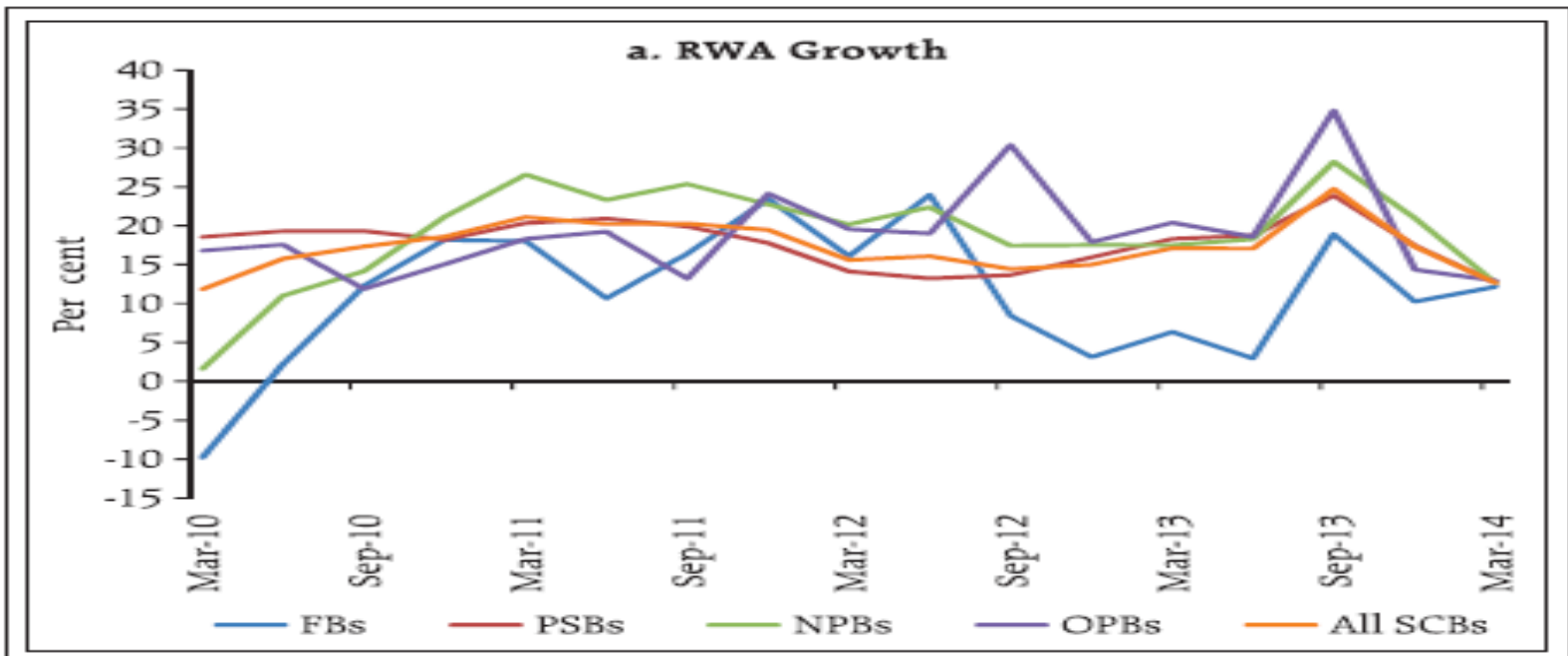
Source: Compiled from Financial Soundness Indicators, IMF

CAPITAL RATIOS - INDIAN BANKS VIS-A-VIS GLOBAL BANKS

- CRARs of the banks vary from jurisdiction to jurisdiction .
- This may be due to different treatments given to various capital instruments, different treatment to pillar II risks, and various stages of migration to Basel III

CAPITAL RATIOS - PSBs VIS-A-VIS PRIVATE SECTOR BANKS IN INDIA

- SCBs – CRAR at 13.88% (Total capital funds amounting to 8,879 billion INR)
- PSBs – CRAR at 12.38%
- Private Sector Banks – CRAR at 16.84%



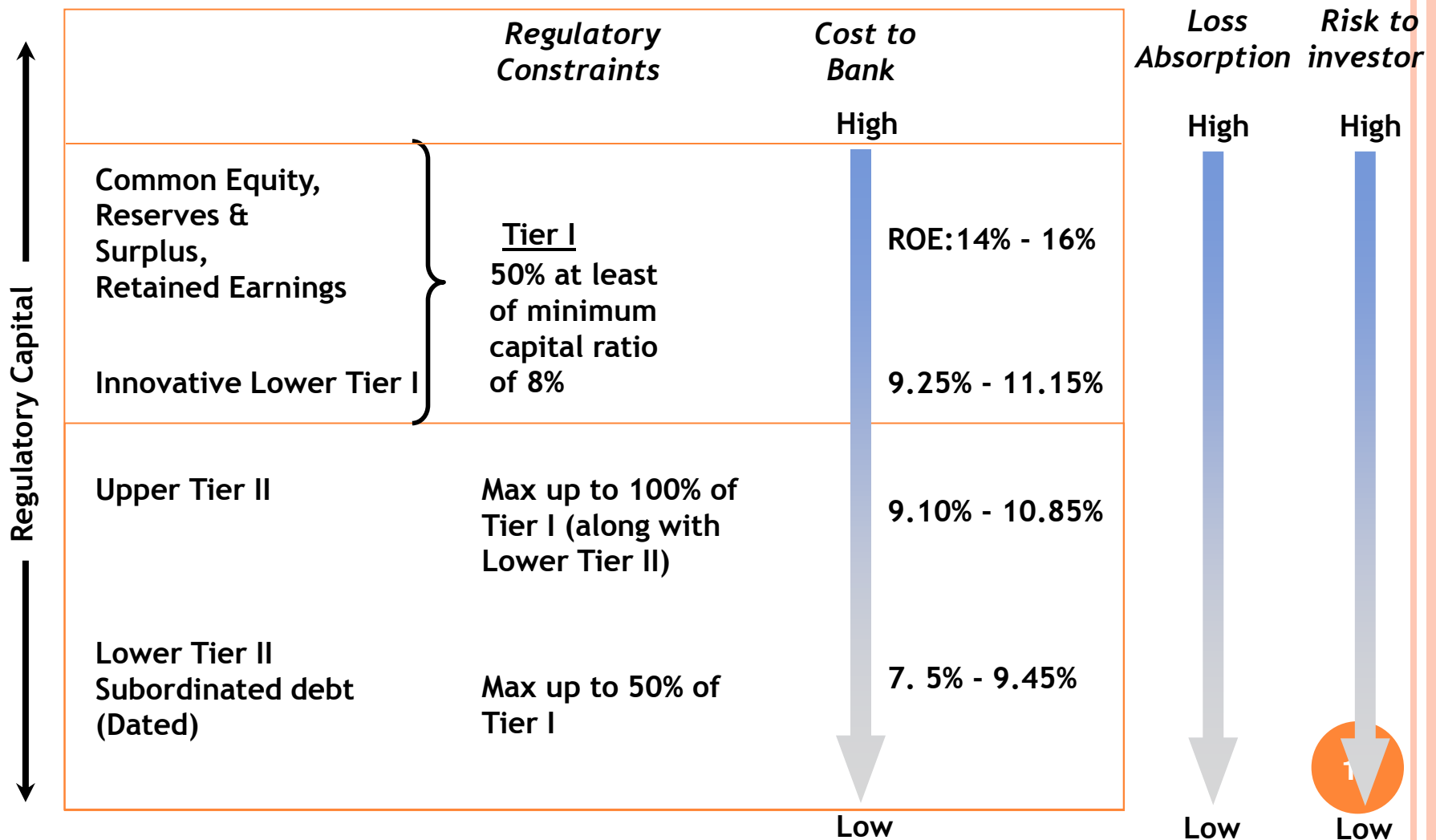
CAPITAL REQUIREMENTS

- The total capital requirement to meet the Basel III requirements would be Rs.4,60,120 crore (Rs.2,39,720 crore Common Equity Tier-I) (Rs. 1,55,900 crore Additional Tier-I) and (Rs.64,500 crore Tier-II).
- Assumptions: Gross Domestic Product (GDP) growth rate for the next five years as 6.5 percent and dividend pay-out ratio as 20 percent as percentage of net profit and credit growth rate at 18 percent and further RWAs growth at 16 percent.

SOURCES OF CAPITAL

- Equity from the Public, QIP, FDIs, DVRs, Rights, etc.
- Foreign Direct Investment (FDI) in public sector banks of India is permitted up to 20% (Portfolio investment and FDI) via government approval subject to Banking Companies Act. Investment cap of 20% is also applicable to nationalized banks such as SBI and its associate banks.
- Non-common Equity Capital Instruments viz. Additional Tier I & Tier II Bonds
- Other avenues :
Revaluation Reserves – 45% can be reckoned as Tier II
Prudential Dividend Policy

COMPONENTS OF REGULATORY CAPITAL FUNDS UNDER BASEL II AND THE COST TO BANK



CAPITAL RAISING— CHALLENGES

- Bank complacency from financial strength and current capital ratios
- Investor interest close to zero –because of
 - Investor constraints on equity holdings post conversion
 - Belief in bank immunity to default and thus irrelevance of the loss absorption feature
 - High risk perception in the loss absorption feature
- The right structuring is essential to convince investors and price the deals correctly
- Exploring off-shore markets where such instruments have found better investor acceptance
- The pricing will depend on the prevailing market rates thus the banks are exposed to interest rate risk

IMPLICATIONS OF BASEL III

Additional regulatory adjustments

- Phasing out of IPDI (Innovative Perpetual Debt Instruments) issued under Basel II.
- Reciprocal cross holdings
- Investments in JV & Subsidiaries
- Investments in banking, insurance and financial entities
- Investments in own shares

ISSUES RAISED WITH RBI

- Intangible Assets
- Reciprocal cross holdings

Applicability of Phasing in of deduction from
Common Equity

BASEL III - RECENT AMENDMENTS BY RBI

ADDITIONAL TIER I CAPITAL INSTRUMENTS

- Loss absorption : Write-down could be temporary or permanent
- Exercise of Call Option : Reduced from 10 to 5 years
- Maximum limit of 1.5% withdrawn
- Permitted issuance to Retail Investors
- Coupon discretion : If current year profits are not sufficient, Revenue Reserves can be utilized

BASEL III - RECENT AMENDMENTS BY RBI

TIER II CAPITAL INSTRUMENTS

- Minimum Maturity : Reduced from 10 to 5 years
- Maximum limit of 2% withdrawn
- Permitted issuance to Retail Investors

BUSINESS IMPLICATIONS OF HIGHER CAPITAL REQUIREMENTS

- Raising fresh capital & replenishing Phased out Hybrid capital instruments
- Balancing targeted growth with available capital
- Question of Passing on additional capital cost or Retain?
- Maintaining Return on capital
- Strategies for Capital Conservation
- Managing Leverage with demand for capital & credit

SOME GLOBAL BANKS HAVE ALREADY REACTED

- European, American, Asian, Australian banks have already issued Basel III compliant capital instruments
 - Deutsche Bank raised EUR 10 billion capital in October 2010
 - Lloyds Banking Group issued CoCo Bonds in Nov 2009
- UBS issued bonds in 2011 that will be written down in case CET1 ratio falls below 5% and intends to reduce RWA's closer to 300 billions francs under Basel III rules and won't pay dividends till 2013 – 14 till reserves build up
- HSBC lowered its growth plans by 3% in response to stricter capital rules
- Credit Suisse cut its 2010 dividend by 35 percent and lowered growth plans in next 3 to 5 years by 3 percent

OTHER AVENUES OF RAISING CAPITAL

- Revaluation Reserves

The revaluation can be reckoned as part of tier 2 to an extent of 45%

- Prudential Dividend Policy

Capital management – challenges

- Savings Rate is falling , Widening Deficits:

The domestic savings have been consistently declining, resulting in widening CAD

- Recovering Economy & Increasing Demand for Bank Credit:

With the economy showing green-shoots of economic revival, credit demand is bound to pick up. To support the likely increase in credit demand, banks will need additional capital.

--With government is unwilling to provide additional capital to PSBs, GOI share in Banks is set to decline to ensure fresh capitalization.

STRATEGIES FOR CAPITAL OPTIMIZATION

- Maintain a balance between Minimum Ratios and ROE: unduly high amounts of capital will subdue ROE and affect future ability to raise capital
- Should it be a passive, reactive or proactive Strategy?
- Long Term Plan (Strategic): Reduce Required Capital (↓ RWA)
 - Suspend potential future expansion, mainly in portfolios where regulatory capital needed is relatively high
 - Downsize high risk portfolios actively
 - Allocate capital more effectively by focusing on high RAROC areas
 - Increase returns by better management of NPAs
 - Increase operational effectiveness
- Short Term Plan (Tactical): Increase Available Capital Resources
 - Support CET1 by issuing common stock. Constraints?
 - Retain more profits by restricting dividends and share buy-back
 - Support Tier 1 by issuing PNCPS, PDI. Constraints?
 - Support Tier 2 by issuing eligible T2 instruments

REDUCTION OF PILLAR II RISKS

- Reduce additional CRAR (to cover Pillar II risks) over and above minimum Regulatory requirement.
- Focus on reducing material pillar II risks viz. Credit Concentration, IRRBB, Liquidity, residuals risks, etc.

KEY CONSIDERATIONS

- What is the response time and operational readiness for each strategy?
- Which capital is deficient?
- Can it be organically increased or does it have to be raised?
- What are the cost constraints and can the capital be raised in a cost effective manner?
- How much capital is needed and timing?
- Stakeholder reactions?

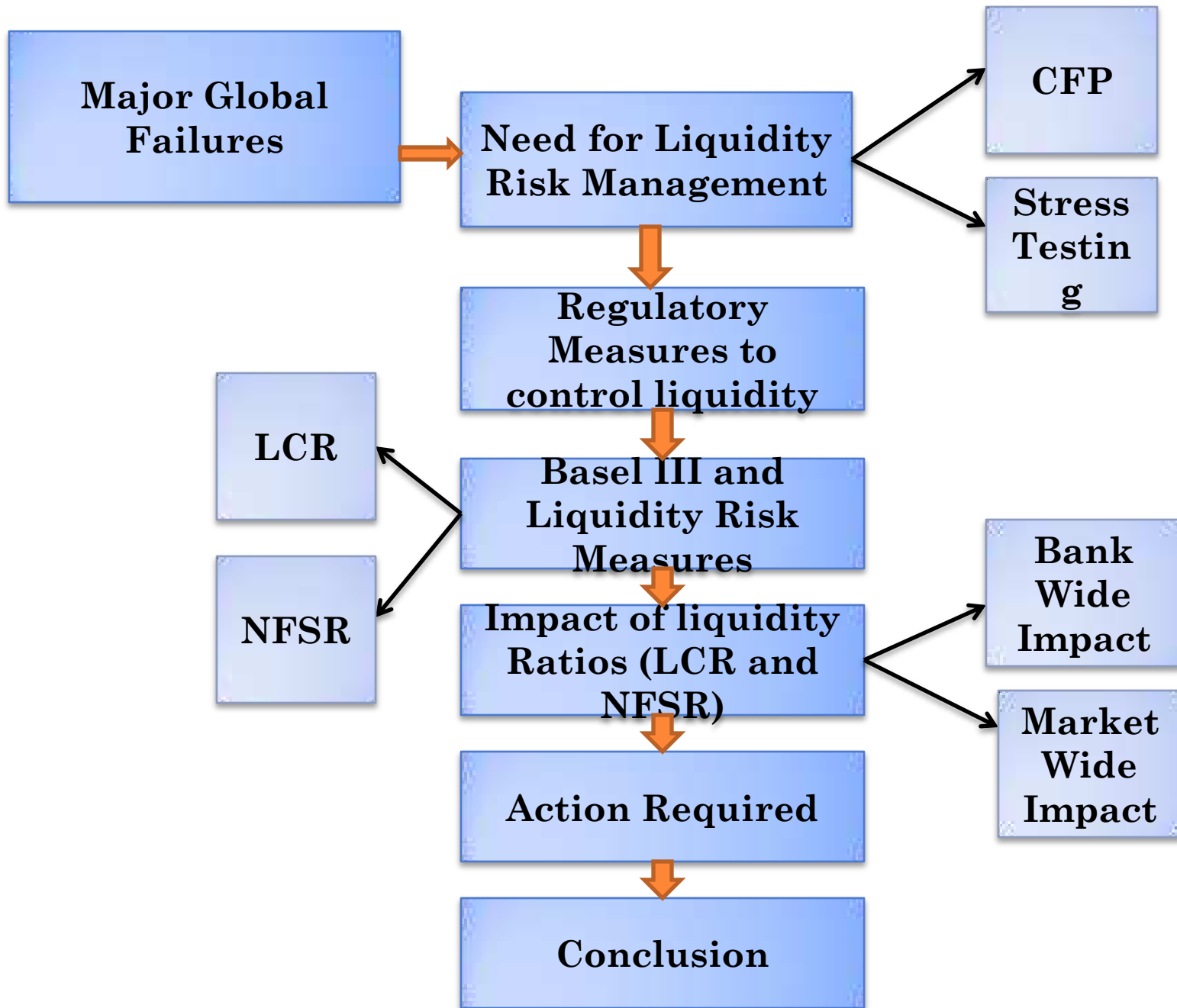
LIQUIDITY MANAGEMENT

GLOBAL BANK FAILURES

- More than 70% of the predicted bank failures in 2008 and more than 80% of the predicted bank failures in 2009 were attributed to liquidity risk.
- Banking behemoths such as Bear Sterns and Lehman Brothers collapsed as a result of liquidity mismanagement and too much reliance on short term funding.

Other major Bank Failures due to Liquidity Crunch

- Northern Rock
- Sachsen LB, Germany
- Netbank



LIQUIDITY RISK MANAGEMENT

- Determines the volume and composition of assets, in view of the liability side of the balance sheet.
- Assess the pattern of cash outflows.
- Diversify funding sources and ensure secured term funding, to limit short-term liquidity pressure.
- Identify assets which satisfy both liquidity and expected return requirements.
- Forecast the triggers and severity of short-term liquidity pressure and establish channels to obtain contingency funding through Contingency Funding Plan (CFP) and Stress Testing.
- Estimate the impact of liquidity stress on NII and net worth.

MONETARY TOOLS TO CONTROL LIQUIDITY

- Open market operations
 - Is outright buying or selling of government securities
- Liquidity Adjustment Facility
 - Repo And Reverse Repo
 - Marginal Standing Facility(MSF)
- Cash Reserve Ratio (CRR)
- Statutory Liquidity Ratio (SLR)
- Market Stabilization Scheme (MSS)
- Intervention in forex market

- Collateralized Borrowing and Lending Facility by RBI and CCIL

BASEL III AND LIQUIDITY RISK MEASURES

- The BCBS has introduced two new liquidity ratios (LCR and NFSR) for banks Liquidity Management.
- A major issue during the crisis was caused by banks being unable to roll over short-term financing .
- By introducing the new ratios, the Basel Committee aims to:
 - Strengthen banks against adverse shocks
 - Eliminate structural mismatches between assets and liabilities
 - Encourage more stable sources of funding – medium and long-term rather than short-term options
 - Maintain liquid assets to meet cash outflows under stressed conditions.
- The liquidity requirements set by the Basel Committee are likely to prove an even bigger challenge than those on capital.

LIQUIDITY COVERAGE RATIO

LCR= Stock of High quality liquid assets

Total net cash outflow over the next 30 days (under stress conditions)

- Compliance with LCR ensures that HQLA is at least 100% of net cash outflows by January 01,2019.
- HQLA should be readily sold or used as collateral to obtain funds under stress scenarios. HQLA should be unencumbered (without legal, regulatory or operational impediments)
- HQLA exclusively as contingent source of funds.
- Need for CFPs to identify the triggers and the sources of funds.
- Will force banks to hold more liquid assets and prepare for short-term

	01.01.2015	01.01.2016	01.01.2017	01.01.2018	01.01.2019
Minimum LCR	60%	70%	80%	90%	100%

NET STABLE FUNDING RATIO

$$\text{NSFR} = \frac{\text{Available Stable Funds (ASF)}}{\text{Required Stable Funding (RSF)}} > 1$$

- ASF is defined as the total amount of bank capital, preferred stock with maturity ≥ 1 year, liabilities with effective maturities ≥ 1 year, demand deposits and/or term deposits with maturities < 1 year, and wholesale funding with maturities < 1 year multiplied by a specific ASF factor assigned to each particular asset type.
- Required stable funding (RSF) is defined as the weighted sum of the value of assets held and funded by the bank multiplied by a specific RSF factor assigned to each particular asset type.
- NSFR, including any revisions, will move to a minimum standard by 1 January 2018.

BANK WIDE IMPACT

- **High costs of Adjustment**

Banks which fall short of meeting these two liquidity ratios will need to adjust their balance sheets.

On the asset side:

- Holding more high quality liquid assets
- Shortening the maturity of some lending

On the liabilities side:

- Holding more retail deposits and more longer-term wholesale funding.

- **Reduced profitability**

- Costly for banks to adjust their balance sheets by holding more (relatively low yield) high quality liquid assets
- Raising medium and long-term wholesale funding and reducing long-term lending.
- These measures will reduce the yield on banks assets and increase the cost of their liabilities.

OTHER ISSUES

- Assembling and reporting the necessary data
- Running a wide range of stress and scenario tests- Modelling cash flows
- Monitoring and assessing their maturity mismatches, concentrations of funding and the availability of unencumbered assets
- Holding additional liquidity to meet 'Pillar 2' requirements
- Putting in place more recovery plans to cover both capital and liquidity.

MARKET WIDE IMPACT

- Retail deposits will become more expensive and less 'stable' as retail depositors chase the best rates.
- Increased demand for longer maturity wholesale funding resulting in such funding becoming more expensive.
- Risk management of individual financial firms could lead to market illiquidity at an aggregate level.
- Further investigations are needed to assess the effectiveness of Basel III liquidity standards.

ACTION REQUIRED BY BANKS

On Liabilities side:

- Extending the maturity of liabilities where possible.
- Focus on increasing 'stable' retail deposit rather than 'less stable' retail deposit and
- Explore medium-term funding through the wholesale market and through issuing bonds and other securities.

On Assets side:

- Switching from less liquid securities and other assets to government bonds and other instruments that count as HQLA.
- Entering into liquidity swaps, for example with insurance companies, to exchange less liquid assets for HQLA.
- Reducing the maturity of some lending so that it falls below the one year cut-off point that is so critical to the NSFR.

Other Requirements

- Establish data and reporting systems
- Data collection and reporting, and
- Changes in business processes and technology systems.
- Banks may also be taking actions to meet other regulatory requirements that are beneficial for their liquidity positions. These include:
 - Raising new capital
 - Sale of long-term assets

CONCLUSION

- New Basel III banking regulation emphasizes the liquidity risk measures LCR and NSFR.
- The new liquidity standards aim at strengthening individual banks' liquidity risk management
“idiosyncratic liquidity risk was not the major contributor to bank failures during the 2007–2009 financial crisis”.
- Additional measures to provide a comprehensive view of aggregate liquidity need to be developed.
- An adequate policy response requires a mix of macro and micro prudential policy tools.
- Policy makers need to be conscious of the inherent limitations and weaknesses of the LCR and NSFR.

Profitability

PROFIT OPTIMIZATION

- Optimization vs. Maximization
- Sustainable long term goal (Optimization)
- Regulatory constraints on profits (To maintain capital, liquidity, reserve requirements, directed lending not a restriction but an opportunity)

WHY PROFITABILITY BASED PERFORMANCE MEASUREMENT

- Traditionally, a common metric used to measure performance has been Net Income. However, it does not totally serve the purpose of measuring how effectively a bank is functioning in relation to its size and does not truly reflect its asset efficiency.
- Net Interest Margin captures the spread between the interest costs and earnings on bank's liabilities and assets and indicates how well the bank manages its assets and liabilities. But it fails to measure the operational efficiency of a bank.
- Profitability based measurement on the other hand can serve as a more robust and inclusive means to measure the performance by gauging the extent of operational efficiency as well as capturing the nuances of bank's diversifying earnings through non-interest income activities and management of their costs.

PARAMETERS FOR PROFIT MEASUREMENT

- ROA
- ROE
- NIM

One essential aspect of Profit measurement is the measures we use for profitability management. Rather than using a simple profit based approach, the use of profitability ratios should be encouraged while taking management decisions regards business mix and capital allocation.

OBJECTIVES

- Sustainable long term goal
- Business income (it should be consistently growing)
- Treasury income
- Derisk the balance sheet from market fluctuations – Challenges

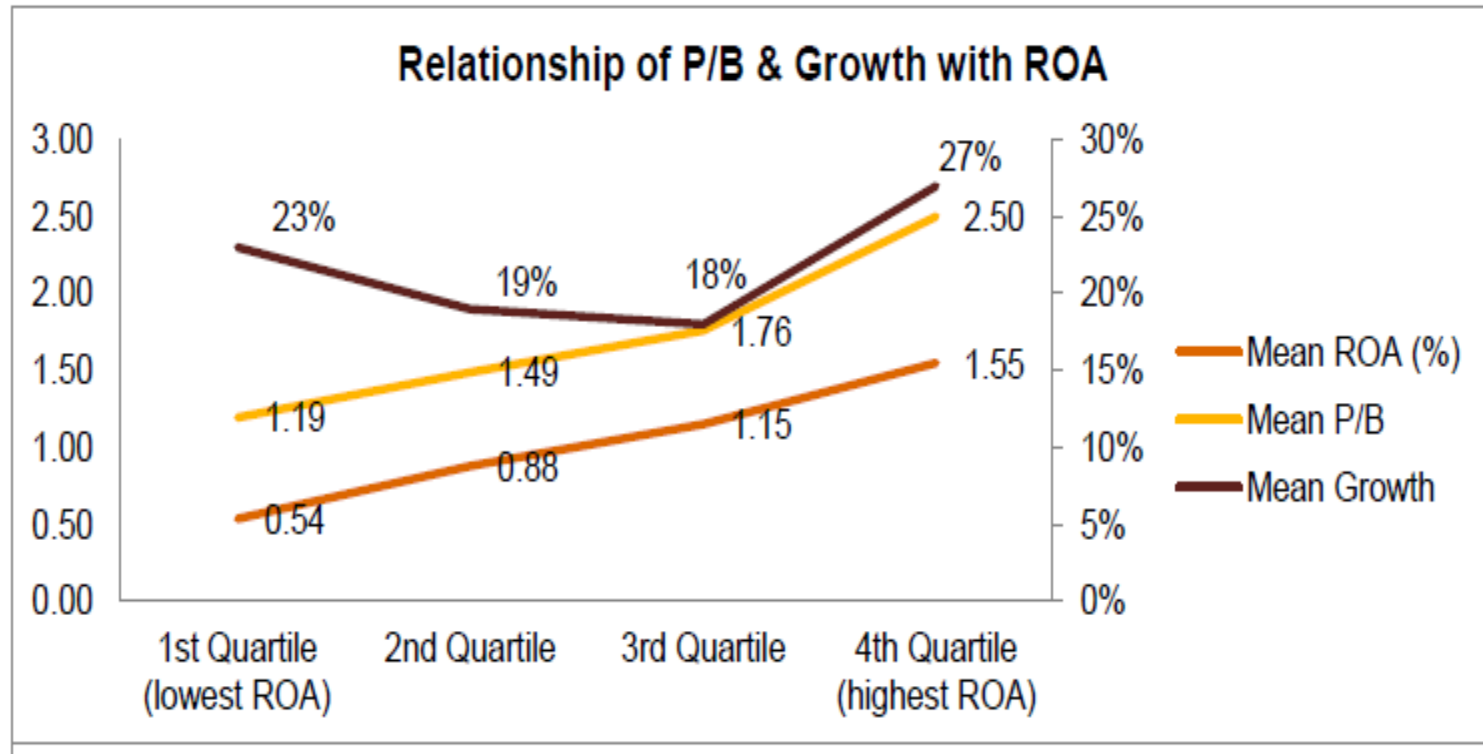
PROFITABILITY, GROWTH, MARKET VALUE

- Profitability is not correlated with balance sheet size .
- According to a study on Indian Banks by PwC, only two large banks figure in the top 10 banks ranked in terms of profitability – although as a group, smaller banks exhibit wider dispersion of profitability compared to larger peers.
- Banks with profitability \geq average have a relatively lower share of assets in Corporate/ Wholesale Banking segment vis-a-vis the rest.
- The listed banks, that that deliver better profitability experience higher valuation – measured in terms of Price/ Book (P/B) multiple at which their shares trade

PROFITABILITY, GROWTH, MARKET VALUE CONTD..

- Studying the asset portfolio mix across business segments for two silos viz. Banks with less than average ROA and Banks with greater than average ROA brings out the following key findings:
- Compared to Banks with $ROA < \text{average}$, Banks with $ROA \geq \text{average}$ have
 - Lower share of assets in Corporate/ Wholesale Banking
 - Higher share of assets deployed in Retail Banking
 - Higher share of assets deployed in Treasury operations

IMPACT OF ROA ON VALUATION(P/RICE TO BOOK VALUE)



IMPACT OF ROA ON VALUATION CONTD..

- The market rewards banks that can raise capital at higher rates of return by valuing their existing equity base at a higher premium compared to peers that compound capital at relatively lower rates of return.
- The implication of this is lower cost of capital and less dilution of equity for future fund raising initiatives of banks that are superior managers of capital.
- while the market expects banks to grow, growth for growth's sake without a handle on profitability may in fact be value eroding in terms of market multiple commanded by the bank.

SOURCES OF INCOME

- NII Consistent growth, consistent policies
- NPA Management, Write back of interest, Recovery in NPAs, etc.
- Recovery in Written off accounts

PROFITABILITY AND CAPITAL RAISING

- Profitability and capital raising are intricately linked.
- Profitability here is defined in terms of profitability ratios like RoE, RoA, RAROC, etc.

CONCLUSION

- The banks are governed by certain regulatory standards which dictate the minimum capital and liquidity requirements.
- Within the given regulatory and market constraints, the banks must ensure they are optimally deploying the already scarce capital and maintaining just enough liquidity (to meet the already stringent regulatory requirements) so as to not to compromise on profitability.