Strengthening Financial Stability: Macroprudential Policies, Tools and Frameworks

Seminar on Crisis Management and Bank Resolution

Abuja, Nigeria

16-20 January 2017

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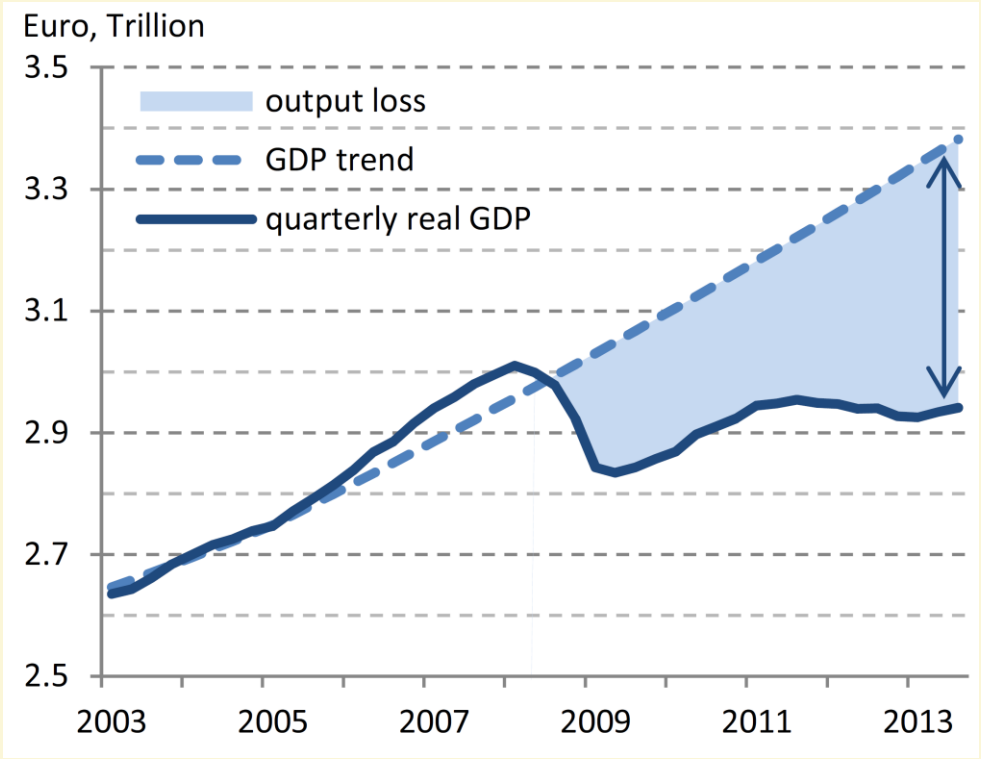
Agenda

- Microprudential vs Macroprudential
- Macroprudential Policy Strategy and Intermediate objectives
- Macroprudential Indicators of financial system vulnerability
- Macroprudential Tools/Instruments
- Country examples of Macroprudential Policy implementation
- Institutional Arrangements

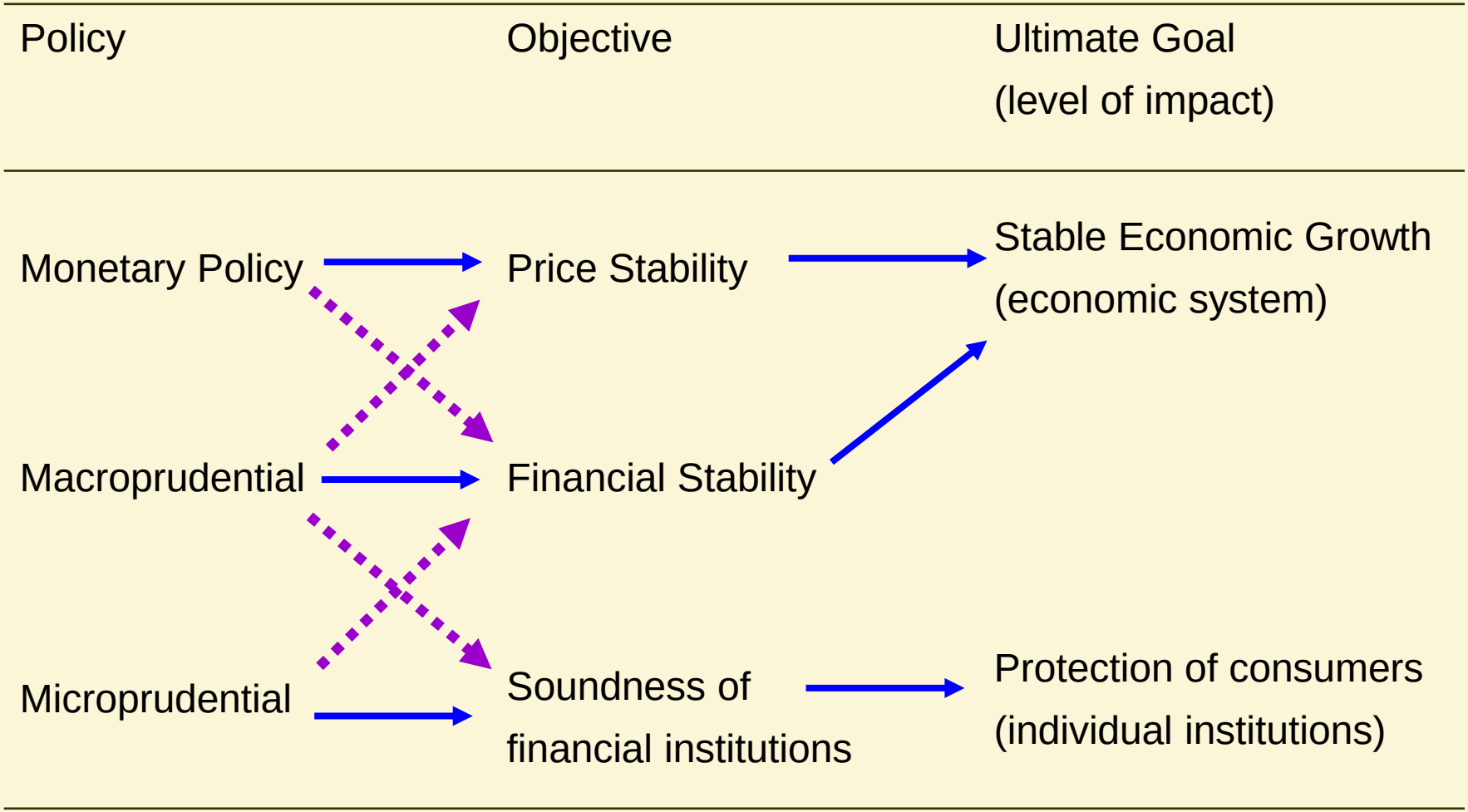
Macroprudential Approach and Systemic Risk



- 147 episodes of systemic banking crisis during 1970 - 2011
- Global financial crisis - in advanced economies:
  - median cumulative loss in output relative to its pre-crisis trend has been 33% of GDP
  - increase in public debt 21% of GDP
  - direct fiscal costs 3.8% of GDP
  - In the EU, GDP remains below its pre-crisis level and cumulated over the whole period is around 13% below its pre-crisis trend (coloured area in Figure)
    - amounting to loss of ½ year's GDP
  - compared with end-2007, an additional 10 million people unemployed in the EU

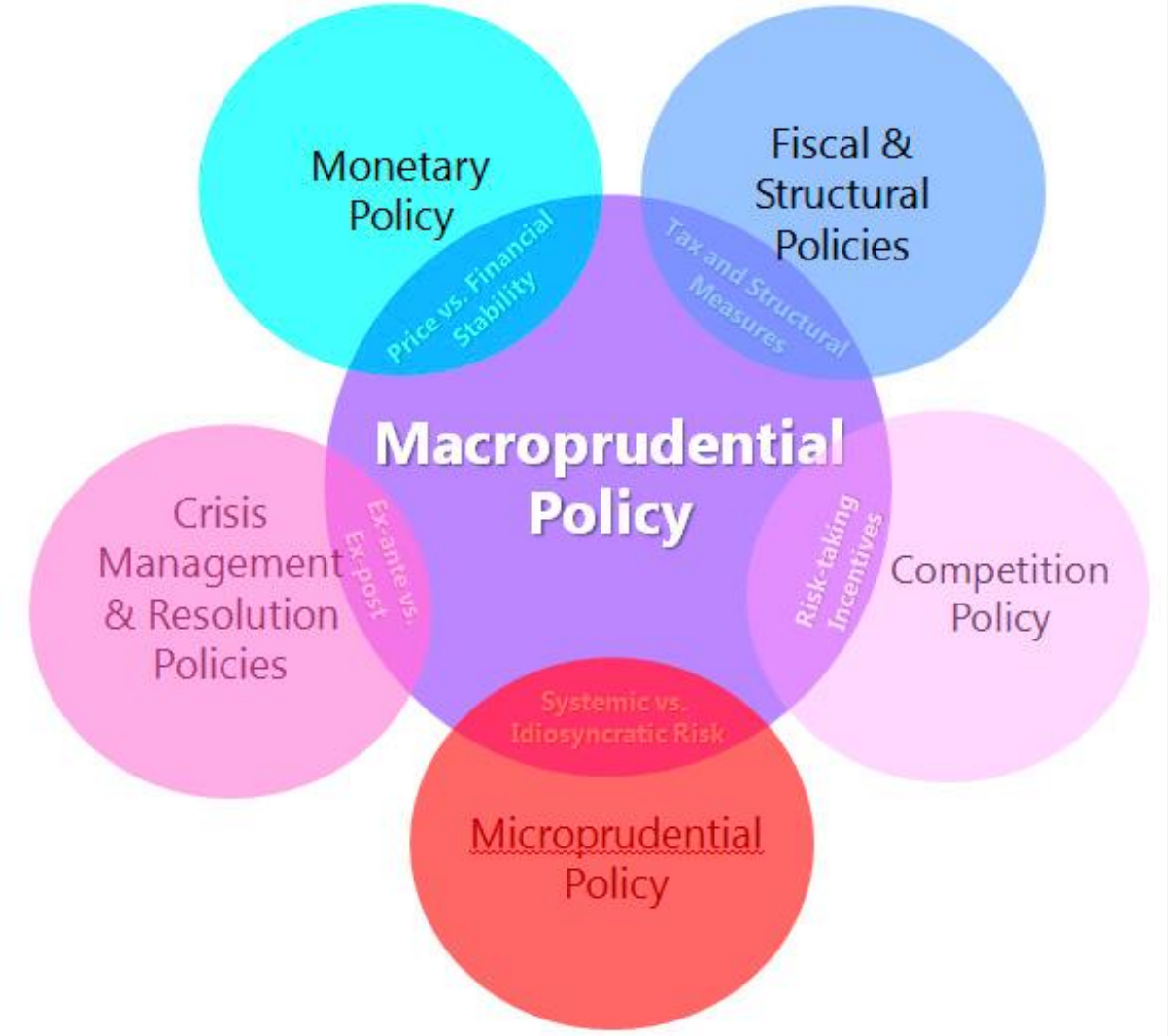
Source: ESRB: Flagship Report on Macro-prudential Policy in the Banking Sector

Macroprudential Policy Framework in context..



Source: Schoenmaker (2010). Solid lines-primary impact, dotted lines-secondary impact

Macroprudential Policy and Other Public Policies: The Context



Financial System Vulnerabilities: Which are the right questions to ask?

Source: IMF, Key Aspects of Macroprudential Policy, 2013

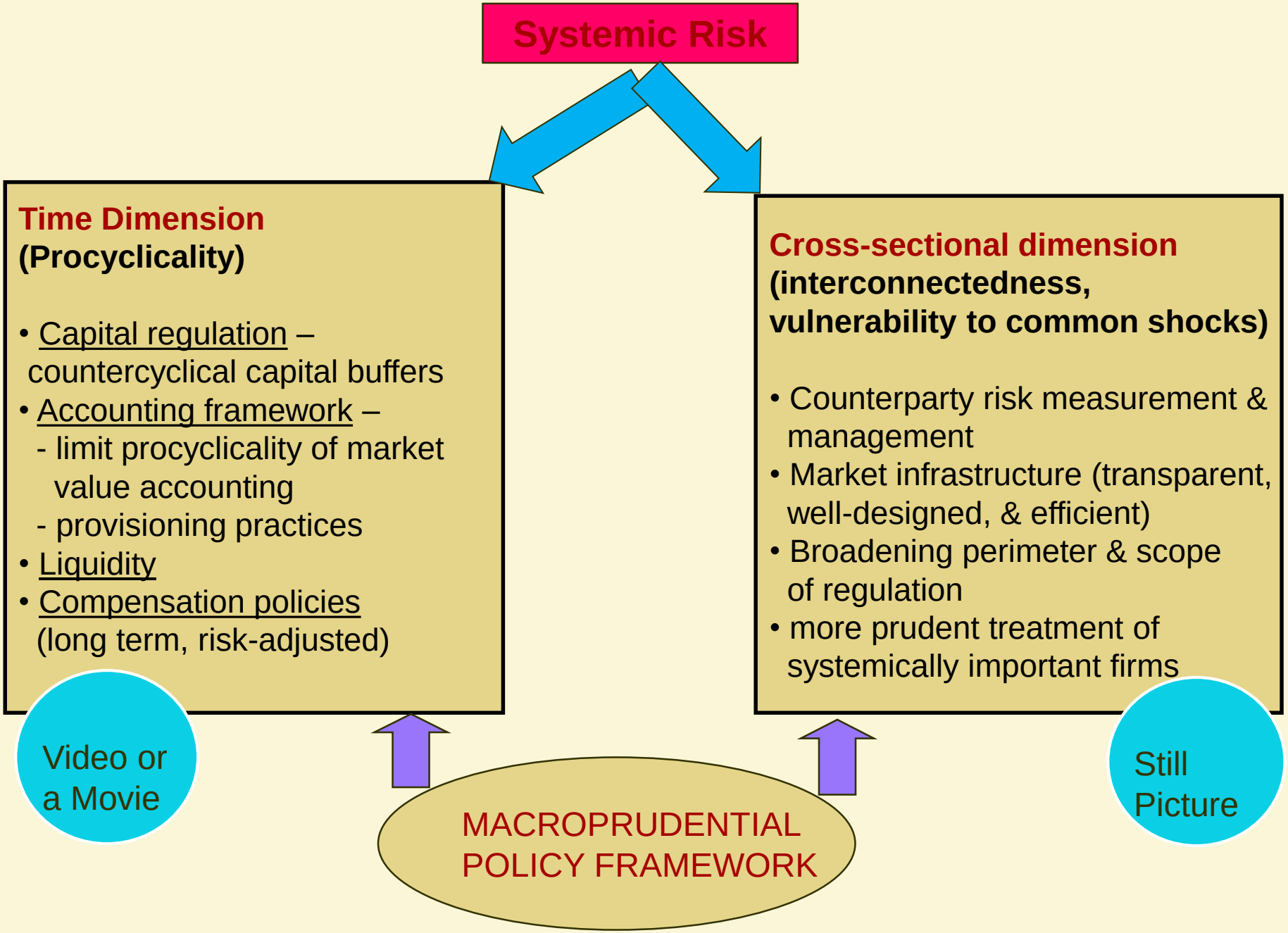
	Microprudential	Macroprudential
Objective	Stability of individual institutions	Financial system stability (avoid output (GDP) costs if financial instability)
Address risks	Institution specific: Credit risk; Liquidity risk; Market risk; Operational risk; Other institution-specific material risks	System-wide: Excessive credit growth; Excessive maturity mismatch; Contagion; Failing financial infrastructure
Monitoring	Bottom-up: Institution-specific indicators Micro-stress test; Pillar2 SREP	Top-down: Macro-indicators Macro-stress test
Prudential Instruments	Minimum requirements Institution-specific add-on	Add-on for systemically relevant/groups of institutions
Governance	Supervisor (including colleges of supervisors for cross-border banks)	Macro-prudential authority (including coordination at National/ international levels)
Expertise	Micro-finance	Macro-finance

Source: ESRB, adapted

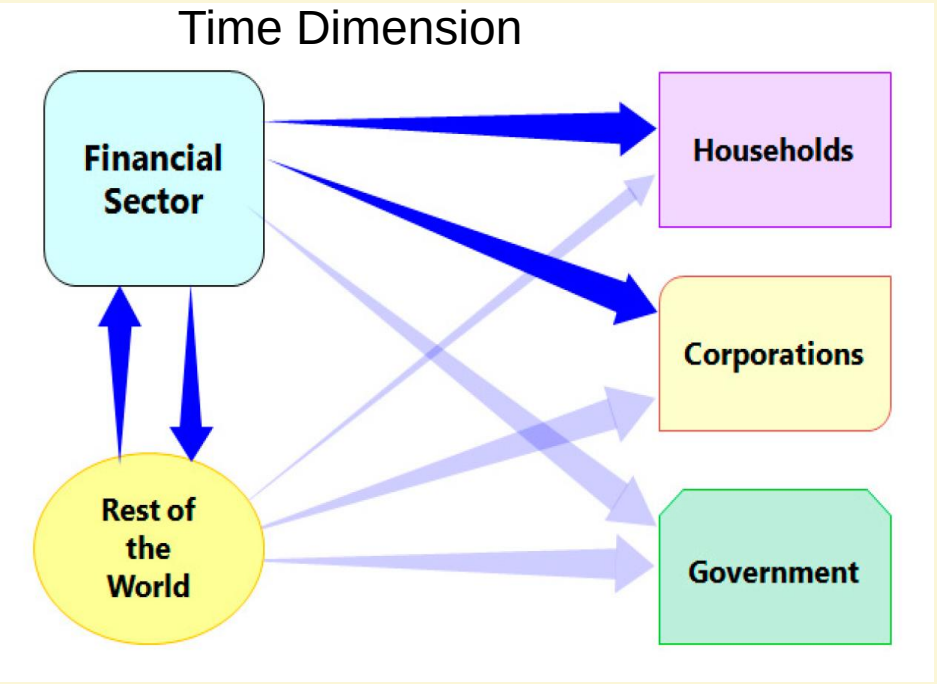
Macroprudential Policy

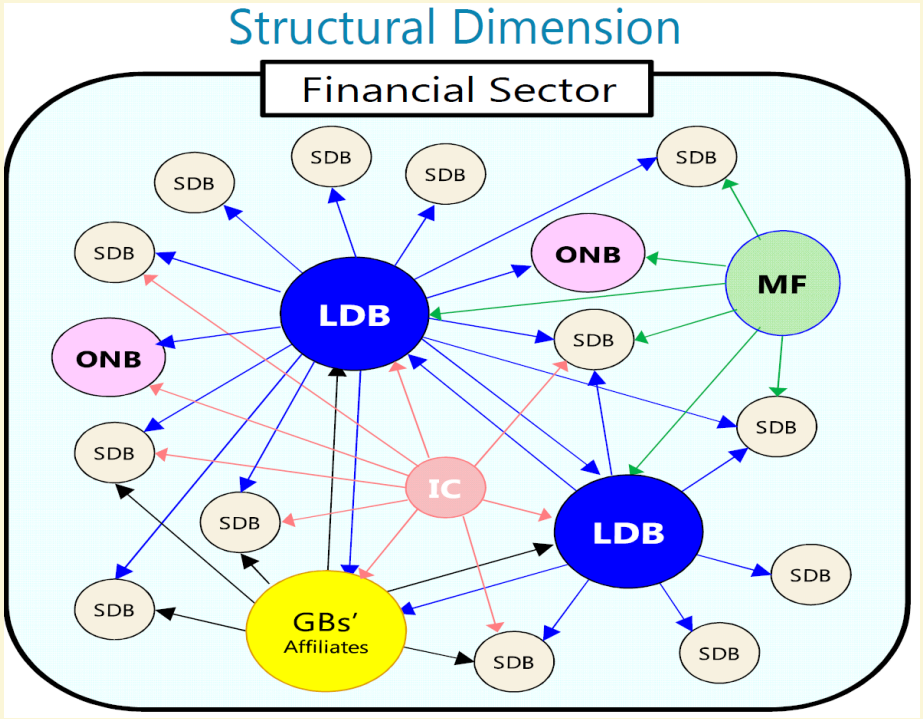
- Macroprudential: Macro and Prudential
- Objective:
  - to limit systemic risk – the risk of widespread disruptions to the provision of financial services that have serious negative consequences for the economy at large
- Scope:
  - Focus -financial system as a whole (including the interactions between financial & real sectors) as opposed to individual components (that take rest of the system as given)
- Instruments and associated governance:
  - Use of primarily prudential tools calibrated to target the sources of systemic risk.
    - Any non-prudential tools that are part of the framework need to clearly target systemic risk.

Source: FSB, IMF, BIS, "Macroprudential Policy Tools and Frameworks- Progress Report to G20" 27 Oct 2011


Systemic Risk
Time Dimension
(Procyclicality)
• Capital regulation – countercyclical capital buffers
• Accounting framework –
- limit procyclicality of market value accounting
- provisioning practices
• Liquidity
• Compensation policies (long term, risk-adjusted)
Cross-sectional dimension
(interconnectedness, vulnerability to common shocks)
• Counterparty risk measurement & management
• Market infrastructure (transparent, well-designed, & efficient)
• Broadening perimeter & scope of regulation
• more prudent treatment of systemically important firms
Video or a Movie
MACROPRUDENTIAL POLICY FRAMEWORK
Still Picture

Systemic Risk: Time and Structural Dimension





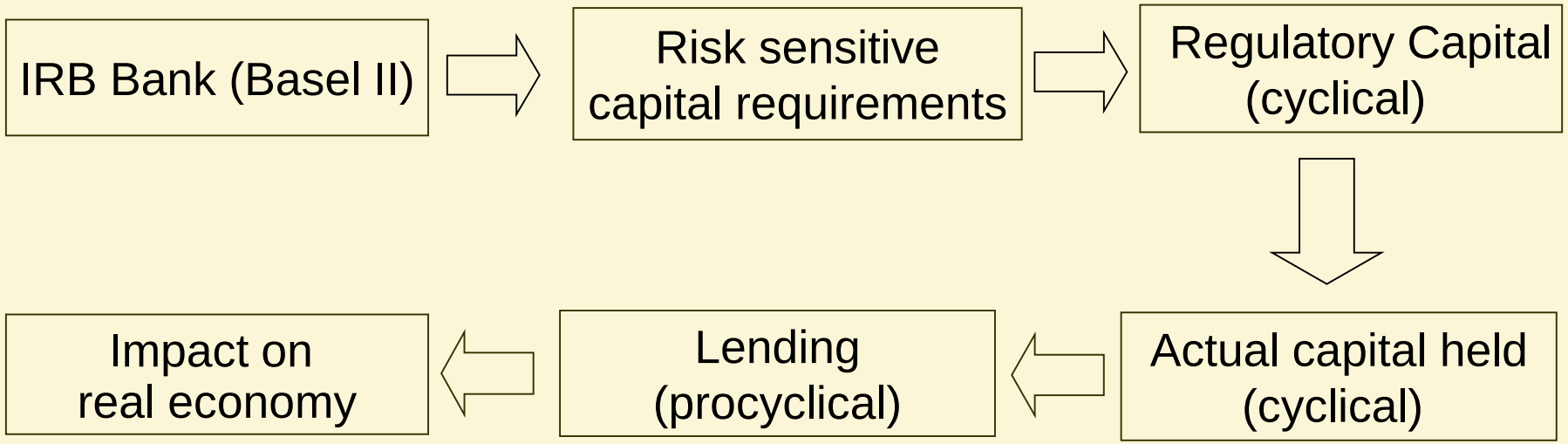
Arrows denote size of exposures

LDB- Large Domestic Bank, SDB-Small Domestic Bank, MF- Mutual Fund, IC-Ins Co., GB-Global Bank
ONB- Other Non-Banks

Source: IMF

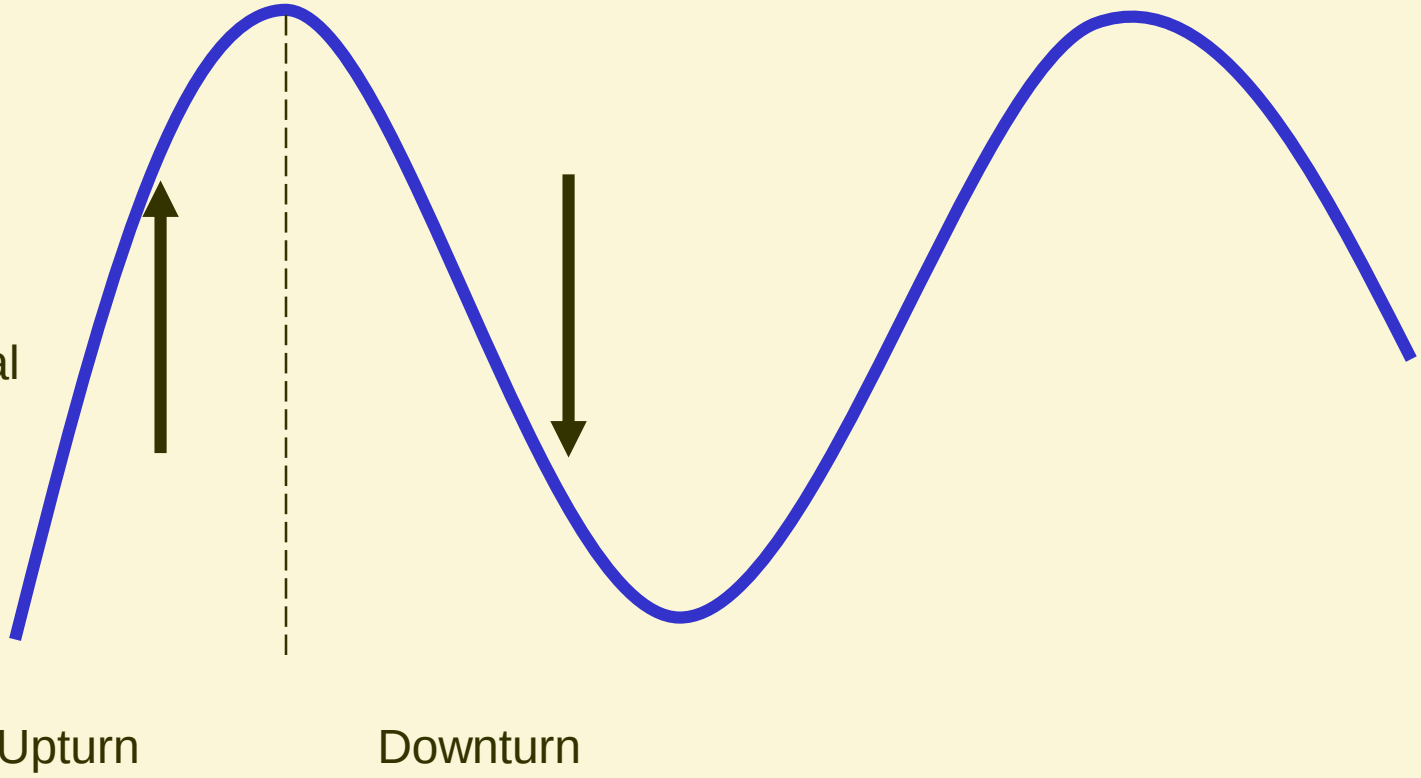
The Time Dimension: What is Procyclicality?

- Cyclicality- tendency for measure like regulatory capital, valuations & other risk metrics to vary with changes in economic or financial conditions
- Procyclicality- situations where cyclicality of such measures cause negative feedback dynamics which further amplify financial market volatility, illiquidity or economic cycles



Time Dimension of Risk: Procyclicality

- Credit risk:
  - PD
  - LGD
  - EAD
- Provisions
- Regulatory Capital
- Asset Valuations
- Haircuts
- Liquidity
- Remuneration
- ……



Business and Financial Cycles

	Business Cycle	Financial Cycle
Variable	over a period of time - ● Output or GDP	over a period of time- ● Credit crunch ● House price busts ● Equity busts
Duration	Recession- 4 quarters Recovery- 5 quarters	Downturn- 6 to 8 quarters Upturn- 11 to 18 quarters Much longer & severe
Decline in	Output – 2.5%	House prices & credit – 6% Equity prices– 28%

- Many recessions are associated with financial disruptions (credit crunches & house price busts)
- Strong linkages between business & financial cycles
- Business & financial cycles are more pronounced in emerging markets
- Financial cycles tend to accentuate each other, making for busts or booms (Credit downturn+ house price busts, or credit upturn+ housing boom)

Source: IMF – "Macroprudential Policy: An organising Framework", Mar 2011

Basel Committee on Reducing procyclicality & promoting countercyclical buffers

Four key objectives:

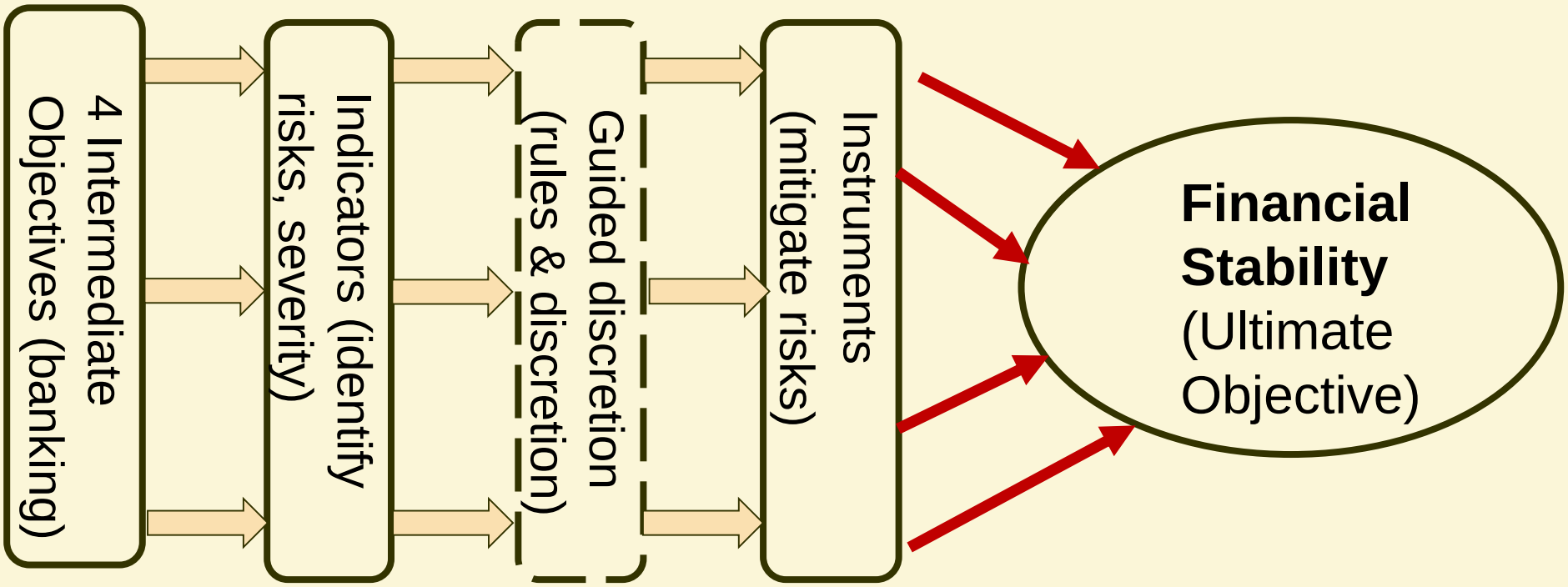
a) Dampen any excess cyclicality of the minimum capital requirement

b) Promote more forward looking provisions

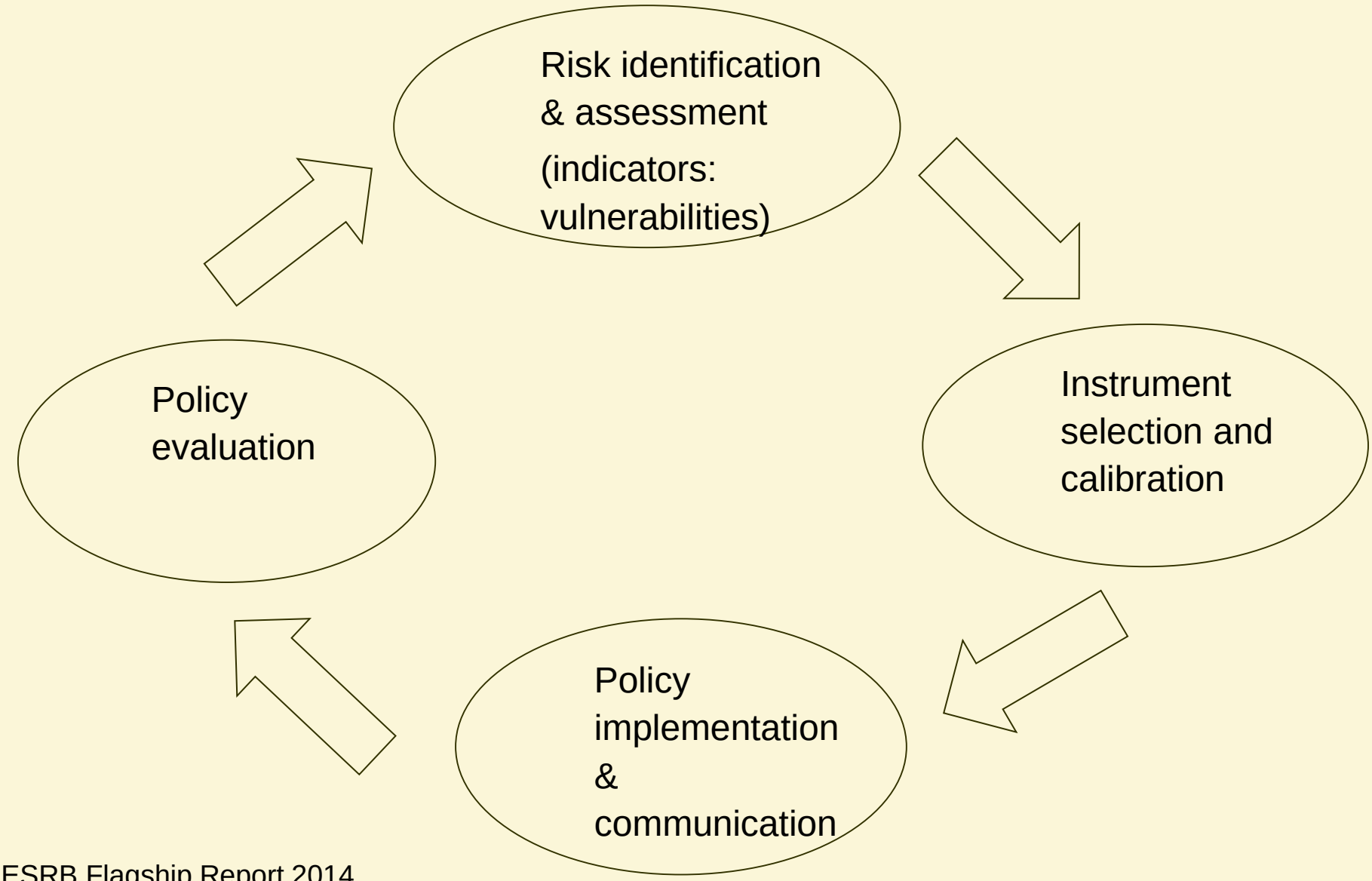
c) Conserve capital to build buffers at individual banks and the banking sector that can be used in stress

d) Achieve the broader macroprudential goal of protecting the banking sector from periods of excess credit growth

Macroprudential Policy Strategy: EU



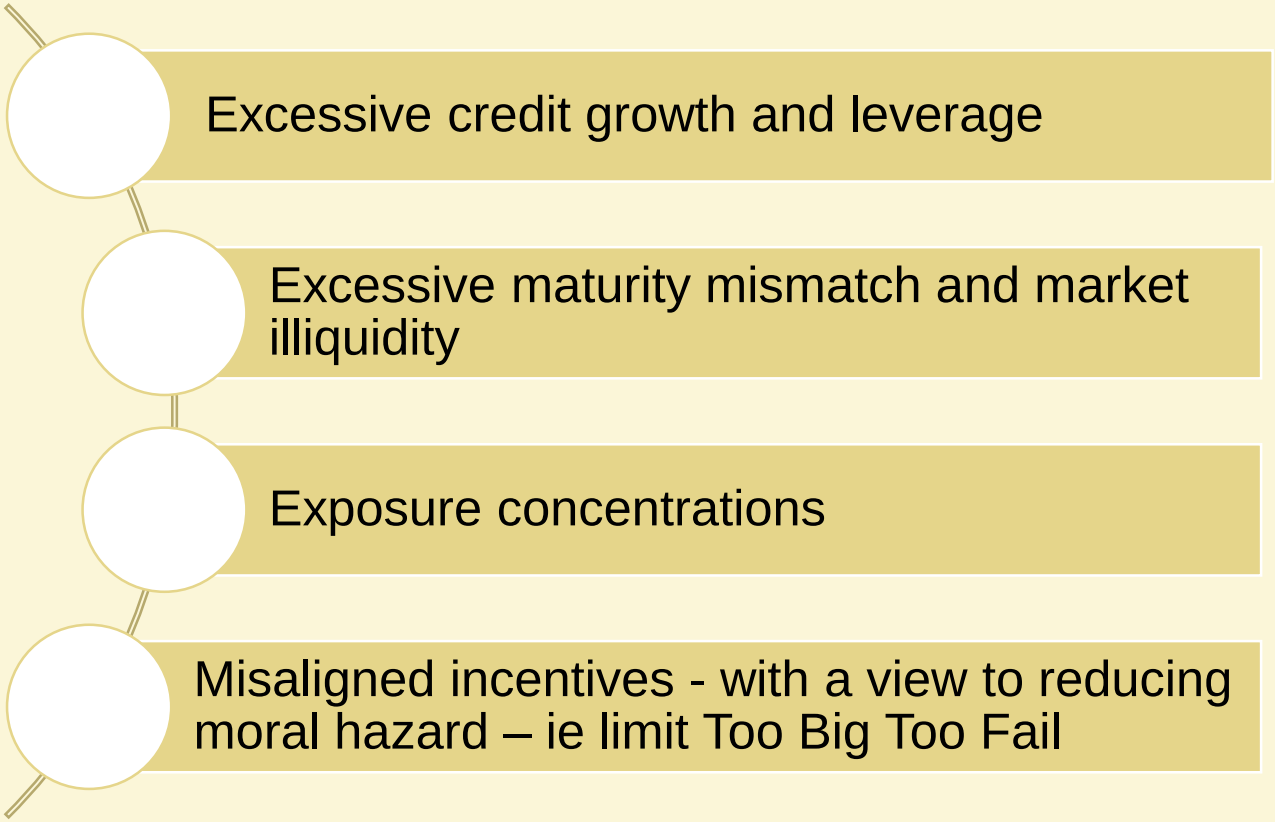
Macroprudential Policy Cycle: EU



ESRB Flagship Report 2014

ESRB: Financial stability “intermediate” objectives

Prevent/mitigate systemic risks in banks from:



All EU macroprudential authorities should include these objectives in their mandate

Indicators signalling build up of vulnerabilities

1. Mitigate and prevent excessive credit growth and leverage	
Excessive credit growth	- Credit-to-GDP gap - Real estate price-based indicators - Leverage - Private sector indebtedness
Risks arising from sectoral developments (e.g. real estate boom)	- Sectoral credit growth - Residential and commercial real estate price-based indicators - LTV/LTI indicators -Investment in real estate and value added of construction - Sectoral indebtedness
2. Mitigate & prevent excessive maturity mismatch & market illiquidity	
Liquidity risk - funding side:	- Bank funding ratios (e.g. LTD ratio) - Reliance on central bank funding - Maturity structure - Net open foreign currency position - Liquid asset ratios - Asset encumbrance - Market liquidity indicators

Source: ESRB

Indicators signalling build up of vulnerabilities

3. Limit direct and indirect exposure concentration	
Large exposures, interconnectedness	- Concentration indicators (eg geography, currency, maturity and sector) - Large exposures indicators (10 largest exposures) - Financial network indicators
4. Limit Too Big To Fail	
Distress or failure of Systemic Institution	- Size, interconnectedness, substitutability, complexity, banking sector size and concentration and cross-border activities

ESRB: Mapping Intermediate objectives and Instruments/tools

The 4 Intermediate Objectives	Macroprudential Instruments/ tools
1. Mitigate and prevent excessive **general** credit growth and leverage	- Countercyclical capital buffer (Article 130; Articles 135-140 CRD) - Systemic risk buffer (Articles 133-134 CRD) - Increased capital conservation buffer (Article 458 CRR) - Increased own funds requirements (Article 458 CRR) - Leverage ratio (national law)
*1**. Mitigate and prevent excessive **sectoral** credit growth and leverage (eg, real estate)	- Sectoral RWs (Article 124 CRR for real estate or Article 458 CRR) - Sectoral LGD floors (Article 164 CRR for retail real estate or Article 458 CRR) - Sectoral LTV limits (national law) - Sectoral LTI or DSTI limits (national law)
2. Mitigate and prevent excessive maturity mismatch & market illiquidity	- Liquidity charges (Article 105 CRD) - LTD limits (Article 103 CRD) - Liquidity buffers (Article 458 CRR) - NSFR (Article 458 CRR) - Other stable funding requirements (national law)

Source: ESRB

ESRB: Mapping Intermediate objectives and Instruments/tools

The 4 Intermediate Objectives	Macroprudential Instruments/ tools
3. Limit direct and indirect exposure concentrations	- Systemic risk buffer (Articles 133-134 CRD) - Large exposure requirements (Article 458 CRR) - Increased own funds requirements (Article 458 CRR) - Measures for intra-financial sector exposures (Article 458 CRR)
4. Limit the systemic impact of misaligned incentives with a view to reducing moral Hazard	- Capital buffers for G-SIIs (Article 131 CRD) - Capital buffers for O-SIIs (Article 131 CRD) - Systemic risk buffer (Articles 133-134 CRD) - Increased capital conservation buffer (Article 458 CRR) - Increased own funds requirements (Article 458 CRR)
In selecting which instrument(s) to use from this broader list, macro-prudential authorities should consider both the economic and legal aspects. These aspects are closely interrelated, as an instrument's effectiveness is influenced by its legal boundaries (i.e. in terms of levels, scope of application, etc.)	

Source: ESRB

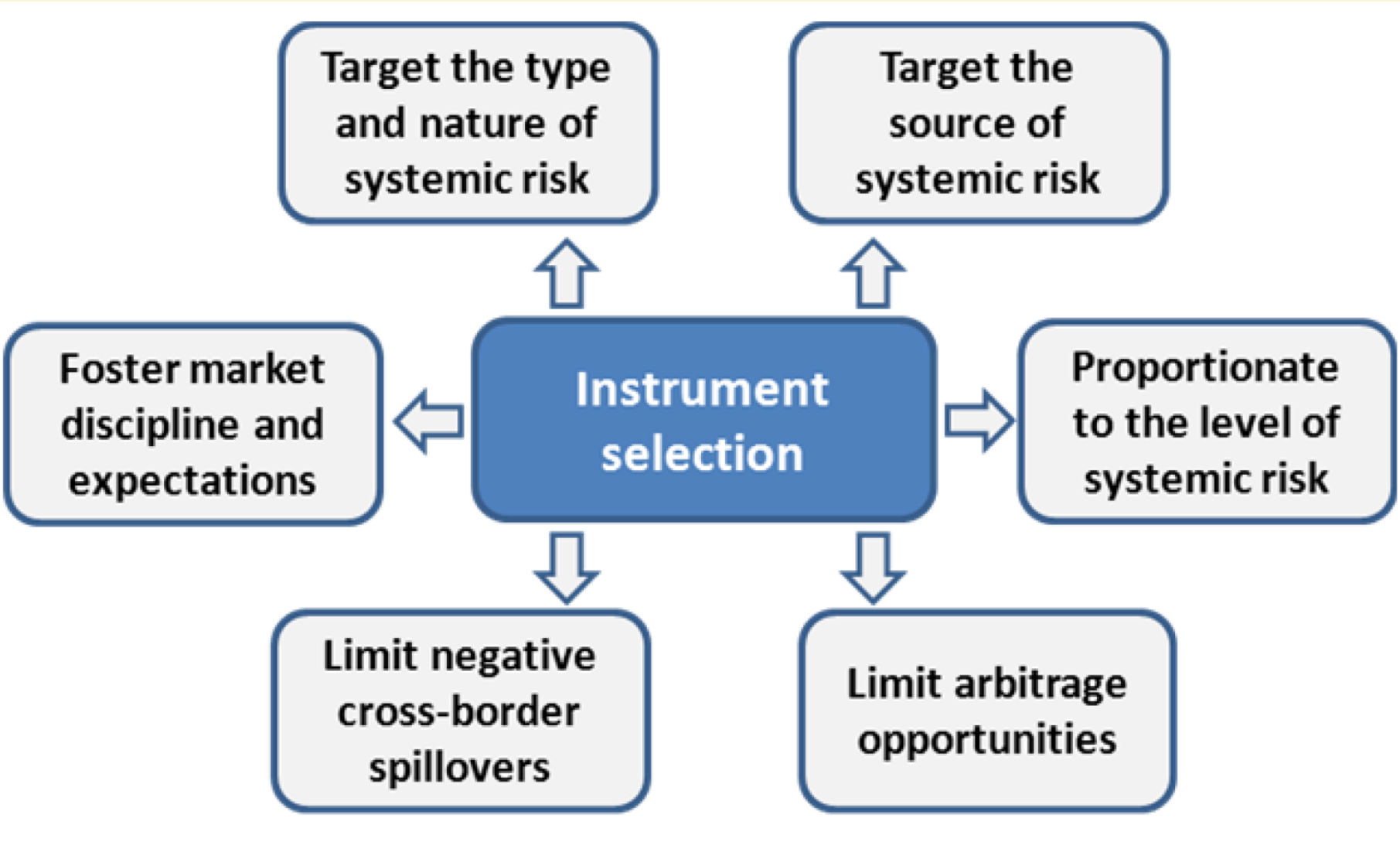
Selection of macroprudential tools

Selection of right Tools is important

"I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail."

- Abraham Maslow

ESRB: Selection of Macroprudential Instrument/tool



Source: ESRB

"Guided Discretion"

- Policy-makers need to overcome the "inaction bias"
  - costs of activating macro-prudential instruments are felt in the short term, immediately visible
  - benefits are long-term and less obvious
- In theory, a strictly rules-based approach would mitigate the risk of inaction bias
  - trigger an automatic policy action if a single indicator/ set of indicators breached identified thresholds
- But in Real Life, judgment needs to be exercised
  - Hence "Guided Discretion"
  - The principle of "guided discretion" could serve as a model for other instruments…..

"Guided Discretion"

- Probably no country fully relies on either rules or discretion:
  - "guided discretion/ladder approach" Swiss National Bank, 2013
  - "constrained discretion" Bank of England, 2009,
  - "conditional rules"
- Switzerland (for Sectoral capital requirements):
  - Guidance from *key indicators*: domestic mortgage volume and house price indicators
  - *Additional indicators*: risk-taking measures of banks, alternative housing credit and price indicators, and general economic environment indicators
  - Exact indicators or thresholds - not communicated publicly
  - discretionary element- need for flexibility in policy-making, lack of experience using the instrument.

Operationalising Macroprudential Policies

Key strategic directions for Macroprudential Authorities

- **Develop a policy strategy**.
  - based on a sound analytical framework that links intermediate macro-prudential objectives to key indicators and macro-prudential instruments
  - Assess whether a sufficient set of macro-prudential instruments to mitigate systemic risks are available
- D**evelop a communication strategy**
  - the mandate, powers and instruments available to macro-prudential authorities
  - a simple narrative on the analytical links between systemic risks and policy actions & their likely transmission channels;
- **Coordination mechanisms with microprudential authorities**
  - holistic approach to addressing systemic risks, including use of Pillar 2 for macro-prudential purposes

Operationalising Macroprudential Policies

- **Support efforts to assess liquidity instruments**.
  - addressing systemic liquidity risks is in its early stages
- **Improve availability, quality and comparability of data used for macroprudential purposes**
  - Compile adequate data on key leading indicators-
  - LTV
  - LTI
  - commercial real estate data
  - monitoring of real estate developments on a regional basis

Use of Macroprudential Tools in Europe

Country	Instrument	Communication	Activation
Austria	Net new lending to local stable funding ratio (LLSFR) as a monitoring ratio	March 2012	December 2012
	Capital surcharge for large banking groups Guiding principles on foreign exchange lending Financial Market Authority (FMA) minimum standards for the risk management and granting of foreign currency loans and loans with repayment vehicles	March 2012 January 2010 September 2012	January 2016 April 2010 January 2013
Netherlands	Loan-to-value cap	April 2012	January 2013
	Capital surcharge for large banking groups	November 2011	January 2016
Norway	Loan-to-value cap	March 2010	March 2010
	Loss given default (LGD) floor on mortgages	October 2013	January 2014
	Countercyclical capital buffer	December 2013	July 2015
Sweden	Loan-to-value cap	July 2010	October 2010
	Macro-liquidity measure (liquidity coverage ratio)	June 2012	January 2013
	Risk-weight floor on mortgages	May 2013	May 2013
Switzerland	Sectoral countercyclical capital buffer	February 2013	September 2013

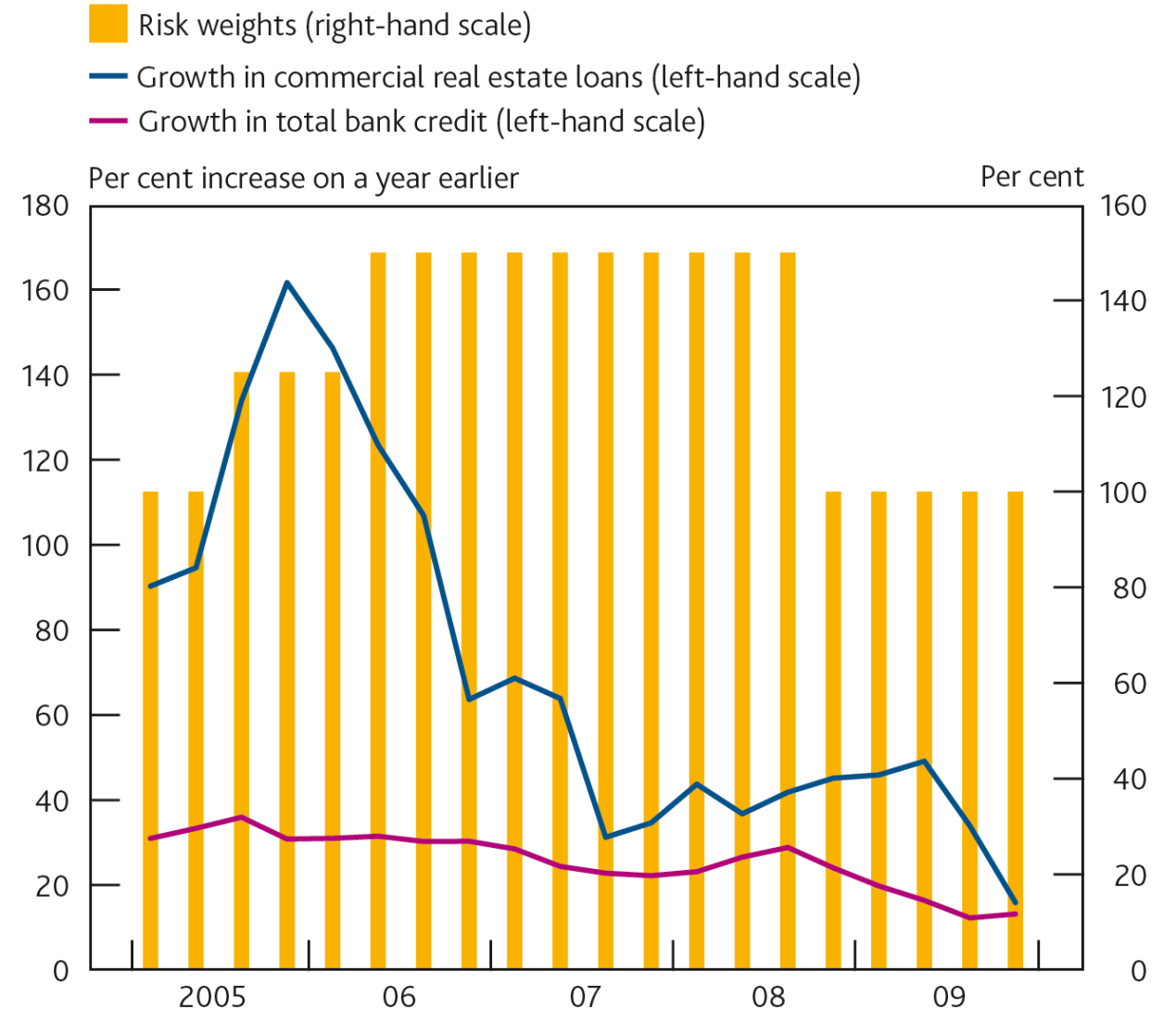
Macroprudential Tools: Sectoral capital requirements

- Additional capital requirements for bank exposures to the real estate sector
  - directly
  - indirectly (through parameters that influence capital requirements, eg, RWs, LGD floors)
- **Objective-** Increase banks' resilience by means of additional buffers for credit losses in the real estate sector
  - Possibly affecting the credit cycle through the price of real estate credit
- **Pros:**
  - Specifically targeted at (certain segments of) the real estate sector (in contrast to the CyCB)
  - Clear effect on banks' resilience
  - RWs can be applied to regional real estate markets

Macroprudential Tools: Sectoral capital requirements

- **Cons:**
  - Reduced effect if banks reduce voluntary buffers to meet sectoral capital requirements
  - unintended “crowding out” effects, bank might reduce its other assets to release capital for real estate loans
  - Circumvention by IRB banks via optimisation of RWAs (for direct sectoral capital requirements and LGDs)
  - other banks/ less regulated sectors from abroad to which the requirement may not apply, may continue lending
  - loans originated by local subsidiaries can be rebooked to foreign parent banks
- **Relevant operational issues:**
  - Applicable to both stock of existing loans & flow of new loans
  - Possibility of significant transmission lag
  - Less effective when the boom is already well developed and profit opportunities outweigh capital considerations
  - Limited to regulated domestic credit institutions (but reciprocity is possible)

Risk Weights against CRE in India



Source: Bank of England- Dec 2011
Instruments of Macroprudential Policy

Macroprudential Tools: LTV Limits

Pros:

- Effect on both the credit cycle and banks' resilience
- Easy to explain in public communication
- Can be applied to all domestic transactions (including by foreign banks, insurance firms and shadow banks), depending on the way the cap is introduced (e.g. through consumer protection rules or rules of general conduct, reciprocity arrangements)
- There is some existing experience with instrument
- Lower risk of "crowding out" of other bank assets compared with the use of sectoral capital requirements

Macroprudential Tools: LTV Limits

Cons:

- Lack of data hinders its use in a number of countries
- No common definition-
  - less of a problem at national level, comparisons difficult in a cross-border context
- Revised Std. App. for Credit Risk may change the above
- Banks might have an incentive to overvalue property
- Possibility of perverse incentive (frontloading of loans in anticipation of the measure)
- Politically sensitive, may prevent certain borrowers from entering the housing market
- Possible leakage in the form of unsecured financing if not combined with LTI limit
- Possible leakage to other financial institutions if the limit is not applied to all domestic transactions
- Loans originated by local subsidiaries can be rebooked to foreign parent banks

Macroprudential Tools: LTV Limits

Relevant operational issues:

- Typically applied to (a segment of) the flow of RRE loans, but also possibly to CRE
- Numerator needs to be well defined to avoid circumvention (e.g. splitting up loans, or topping up with non-secured loans)
- Valuation issues related to the denominator (e.g. reference price, reliability, incentives for overvaluation)
- Complements LTI/DTSI limits in addressing procyclicality
- Implementation:
  - caps for all or a share (e.g. 80%) of new loans
  - comply or explain measures, or
  - measures targeting RWs (differentiate RWs according to LTV level)
- More intrusive instrument than additional capital requirements as it restricts lending directly

DTSI- Debt servicing to income

RBI: Countercyclical Prudential Regulation

	Capital market		Housing		Other retail		Commercial Real Estate		Non-Deposit taking Systemically Imp. NBFCs	
	RW	Prov %	RW	Prov %	RW	Prov %	RW	Prov %	RW	Prov %
Dec 04	100	0.25	75	0.25	125	0.25	100	0.25	100	0.25
July 05	125	0.25	75	0.25	125	0.25	125	0.25	100	0.25
Nov 05	125	0.40	75	0.40	125	0.40	125	0.40	100	0.40
May 06	125	1.00	75	1.00	125	1.00	150	1.00	100	0.40
Jan 07	125	2.00	75	1.00	125	2.00	150	2.00	125	2.00
May 07	125	2.00	50-75	1.00	125	2.00	150	2.00	125	2.00
May 08	125	2.00	50-100	1.00	125	2.00	150	2.00	125	2.00
Nov 08	125	0.40	50-100	0.40	125	0.40	100	0.40	100	0.40
Nov 09	125	0.40	50-100	0.40	125	0.40	100	1.00	100	0.40
Dec 10	125	0.40	50-125	0.40-2.00	125	0.40	100	1.00	100	0.40

RBI: Countercyclical Prudential Regulation

Loan Amount	Loan to Value Ratio (LTV Cap of 80% for loans > Rs 2 million and 90% upto Rs 2 million)	Risk-Weight (%)
Upto Rs 3 million	LTV ≤ 75%	50
	LTV > 75%	100
Rs 3 million to below 7.5 million	LTV ≤75%	75
	LTV > 75%	100
Rs 7.5 million and above		125

Institutional Arrangements for Macroprudential policymaking

- Country-specific circumstances, eg, political & legal traditions, regulatory architecture
  - a well-identified authority, committee, or interagency body, generally with an important role of the central bank

- **Model 1:** macroprudential mandate assigned to *central bank:*
  - Board or Governor making macroprudential decisions (Czech Republic, Ireland, New Zealand, Singapore). Central bank already has regulatory and supervisory powers.
  - committee chaired by the central bank (Estonia and Portugal) – coordination/ info sharing mechanisms set up, where supervisory authority outside the central bank
  - Central bank has explicit powers to make recommendations to other bodies (Norway and Switzerland).

Institutional Arrangements for Macroprudential policymaking

Model 2:

- a *dedicated committee for macroprudential policy within the central bank* structure (Malaysia and the UK).
- dedicated objectives & decision-making structures for *monetary* and *macroprudential* policy (both functions in central bank)
  - To counter potential risks of dual mandates for central bank
  - UK: Monetary Policy Committee & Financial Policy Committee

    (FPC- Governor, Deputy Governors for Monetary Policy, Financial Stability, Markets & Banking, Prudential Regulation & CEO of Prudential Regulation Authority, ED- Financial Stability Strategy and Risk, CEO Financial Conduct Authority, 3 External members)

Institutional Arrangements for Macroprudential policymaking

Model 3:

- An interagency *committee outside the central bank*, in order to coordinate policy action and facilitate information sharing and discussion of system-wide risk
- Central bank participates on the committee (France, Germany, Mexico, and the US).
- A stronger role of the Ministry of Finance (MoF) possible.
  - Participation of the MoF can be useful to create political legitimacy
  - enable decision makers to consider policy choices in other fields, eg. when cooperation of fiscal authority is needed to mitigate systemic risk

Institutional Arrangements for Macroprudential policy

Central Bank Model		Separate Committee Model
Model 1 (Board or Governor)[1]	Model 2 (Internal Committee)	Model 3 (Committee outside the central bank)[3]
Argentina, Belgium, Brazil*, Cyprus, Czech Republic, Estonia*, Hong Kong (SAR)*, Hungary, Indonesia, Ireland, Israel, Italy*, Lebanon, Lithuania, Netherlands*, New Zealand, Norway[2], Portugal*, Russia, Singapore, Slovakia and Switzerland[2].	Algeria, Malaysia*, Morocco, Saudi Arabia, South Africa, Thailand, and the UK.	Austria (M), Chile (M), Denmark (C), France (M), Germany (M), Iceland (M), India (M), Korea (M), Malta (C), Mexico (M), Poland (C), Romania (C), Turkey (M), and the US (M).

[1]Jurisdictions with an "*" have an additional council including other supervisors (e.g. insurance supervisory authorities and financial market authorities) that plays a coordinating role.
[2] In Norway and Switzerland, the central bank is mandated to issue recommendations on the countercyclical capital buffer (CCyB), with ultimate decisions on the buffer rate made by the Ministry of Finance and the Swiss Federal Council, respectively.
[3] "(C)" or "(M)" indicates whether the council is chaired by the central bank or by a government minister (usually the Minister of Finance), respectively.

Final Remarks

- The Emerging Markets and Developing Economies context
  - Implementing Macroprudential Approach – do we need to wait for implementing the entire Basel III framework?
  - Issues in Implementation
  - Practical example: ADB technical assistance

Final Remarks: Macroprudential Frameworks

- Earlier:
  - "Lean" or "Clean"
  - "Fire extinguisher" or "smoke detector"
- Now another tool to protect financial system ....
- ….But beware of its limitations
- "The key to success is blend ambition with humility – ambition to put in place frameworks that are capable of constraining financial booms and to use the tools vigorously; humility to recognise that limitations in what the frameworks can achieve on their own."
- "….Macroprudential frameworks must be part of the answer, but they cannot be the whole answer (in taming financial booms and busts)." Claudio Borio

Strengthening Financial Stability: Macroprudential Policies, Tools and Frameworks

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