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Macroprudential Policy and Central Banking

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Claudio Borio of BIS paraphrases Milton Friedman and says “We are all macroprudentialists now”. It would be an understatement to say that Macroprudential Policy has become a buzzword post-crisis. One rarely comes across any central banker speech without a mention of this term. From small economies like Bolivia to large economies like US, the focus of policymakers on macroprudential policies cannot be missed. Bank for International Settlements’ (BIS) economists have been advocating this approach since 1990s. But it was only in this crisis that the usefulness of the approach has come to the light.

There are a couple of issues with respect to this new approach to financial regulation. First, what does macroprudential regulation mean? Second, what are the tools under this form of regulation? Third, which institution in the financial regulation space (capital market regulator, central bank etc) will be responsible for the regulation? Fourth, what lessons could be drawn for India from the discussion? Interestingly, India actually has lessons to offer to the world on this subject.

Financial regulation/supervision before the crisis

Before the crisis, financial regulation/supervision was focused on health of individual financial firms. The regulation was centered on the balance sheet of the financial entities and judged whether the entity is in safe financial condition. This was also called as microprudential supervision. There was also a widely accepted belief that financial firms would take care of their interests and do not require supervision. Regulators believed in what was termed as light touch regulation.

Post the crisis of 2008, this approach was found to be highly inadequate. First, despite healthy balance sheets financial system faced a severe crisis. Second, the firms that were once considered as the hallmarks of light touch regulation were found to be the creators of the crisis. This has led to introspection amidst regulators and policymakers with macroprudential regulation seen as one of the major suggestion to improve the current system.

In macroprudential regulation, the objective is to look at the financial system from a holistic perspective. There could be a case that standalone firms look healthy but look vulnerable when looked at from a systemic perspective. Like in this 2008 crisis banks looked stable when looked at from a micro perspective. As the crisis was shaping up

regulators and central bankers said financial systems/regulators are safe as banks are well capitalized. However, their claims were found to be wanting as impact on banks was just delayed and finally it was banks which were impacted the most.

The reason is that financial system had other entities like investment banks which were highly overleveraged. The investment banks replied on repo market for funding their asset book and thus were linked highly to the banking system. Further, most banks had floated large number of off balance sheet vehicles which acted as conduits in securitization markets. Once securitization markets dried, the losses finally came on banks' balance sheets. Then there were insurance firms like AIG which were outside the perimeter of regulation and in one of its division was writing majority of Credit Default Swaps. If apart from micro approach, macro approach was also used these risks could have been identified better.

Table 1 lists important differences between the two perspectives.

Table 1: The macroprudential and microprudential perspectives compared

	Macroprudential	**Microprudential**
Proximate Objective	limit financial system-wide distress	limit distress of individual institutions
Ultimate Objective	avoid output (GDP) costs	consumer (investor/ depositor) protection
Characterisation of Risk	Seen as dependent on collective behaviour ("endogenous")	Seen as independent of individual agents' behaviour ("exogenous")
Correlations and common expsures across institutions	important	irrelevant
Calibration of Prudential controls	in terms of system-wide risk; top-down	in terms of risks of individual institutions; bottom-up
Source: Borio (2003)		

Economics of Macroprudential Regulation

One crucial lesson enforced from this crisis is the linkages of financial cycle with economic cycle. This is not a new lesson but a forgotten one.

Since 1990s, the World economy grew at a fast pace in what then was termed as the phase of Great moderation. There were crises but were limited to emerging economies and they were blamed for having poor macroeconomic policies and institutions. As there were limited problems with advanced economies, the linkages of finance with economics were ignored. Central Banks and economists developed macroeconomic models with very little role of financial frictions. Even if there were any frictions, it was assumed that markets would take care of themselves.

The global crisis showed the importance of financial frictions and procylicality of financial system with economic cycle. When economies grow, financial markets also become stronger and it has an amplification effect on the economy (termed financial accelerator by Fed Chairman Ben Bernanke). As a result banks get lax in lending standards and credit growth picks up, corporates and households increase debt levels leading to rise in leverage etc. This co-movement of economy and financial markets reinforce each other to form buoyant economic environment.

The opposite happens when the economic cycle reverses. The financial market has an amplification effect on the downside as well. The risk spreads widen, credit to corporates and households declines and asset markets decline. This leads to further contraction in economic activity as seen in the 2007 crisis. This forces policymakers to take drastic actions to support the economy. Such an approach has been criticized as asymmetric policy with policymakers not acting in good times and reacting quickly to prevent a downfall.

Hence, it is critical that measures are taken to dampen the financial cycle and build buffers when economy is on an upswing. This is precisely the objective of macroprudential regulation. It is also known by several metaphors – *"Leaning against the wind"*, *"Taking the punching bowl away"* etc. It means taking measures that mitigate overall financial system risk so that serious negative consequences for the real economy can be avoided.

Macroprudential Instruments/Tools/Measures

To understand what kind of tools are needed in macroprudential regulation, one needs to understand the risks involved. As there are many kinds of risks, it is convenient to classify them. For macroprudential regulation purposes, financial risks can be divided as two types:

- Cross-sectional dimension of risk (systemic oversight): It means risks at a given point of time and focuses on risks arising from common and correlated exposures of various financial entities. We saw in this crisis how most financial entities relied on repo market for funding their liabilities and had common assets in form of housing market related securities. This is a type of cross-sectional risk.

  The guiding principle for macroprudential regulation in this case is to have oversight on the financial system at every point of time. It would ideally follow the top down approach of identifying tail risks in the whole system, calculate contribution of each financial entity and then apply the tools accordingly. The firms contributing largest to the tail risk should be having tighter standards compared to microprudential regulation which applies the same standard to all the institutions.

Hence, to mitigate this kind of risk we need two kinds of measures:

- Measures to limit interconnectedness - Capital surcharges for systemically important banks
- Measures to address specific risks - limits on currency mismatches, loan-to-deposit requirements etc

- Time dimension of risk (procyclicality): It means risks over a period of time and focus is on how aggregate risk has evolved over time and impact it can have on real economy. This is nothing but procylicality discussed above. The mutually reinforcing process of financial cycle with economic cycle creates severe problems in a downturn as we saw in this crisis.

  The guiding principle for macroprudential regulation in this case is to build buffers in good times so they can be used in times of contraction. It also tries to limit build up of financial risk overtime.

  To mitigate this kind of risk, two kinds of measures are needed:

  - Measures to limit procylicality - Countercyclical capital buffers linked to credit growth, Countercyclical provisioning etc.
  - Measures to limit growth of key monetary aggregates - Loan-to-value (LTV) ratios, Direct controls on lending to specific sectors etc.

Issues with Macroprudential policies

- **Linkages with macroeconomy:** One of the rationale for having macroprudential policies is the interaction of financial system with economy**.** Having said this, economists are not very clear on the linkages and the understanding is incomplete. As explained above, much of recent research on macroeconomics and finance has happened kind of independent of each other.

  The impact of various macroprudential tools on economy is also not understood well. For instance, a ceiling on credit growth could lead to decline in credit to poor people (matters in case of emerging economies). Then a cap on credit to certain sector could lead to higher lending on other sectors building credit bubbles there. Then macroprudential tool-kit is still being expanded. Hence, research at both conceptual and policymaking is needed and much of it is work in progress.

- **Who presses the macroprudential buttons?** Once we understand the importance of macroprudential policy, the delegation of policy becomes a vital

issue. This becomes complex as every economy has its own structure of financial regulation.

- UK had a single regulator in FSA monitoring all the financial entities with Bank of England responsible only for inflation.
- US has multiple regulators looking at various aspects of financial sector with responsibilities not being properly delegated. Federal Reserve looks at price stability and also supervises banks. SEC looks at capital market related entities, FDIC looks at banks in trouble, CFTC looks at futures market, Office of the Comptroller of the Currency supervise all national banks and the federal branches and agencies of foreign banks in the United States etc.
- In Euroarea, ECB remains solely responsible for price stability and National Central Banks and supervisors divide financial stability tasks. And each country has its own set of arrangements with some giving larger powers to central banks and some to other supervisors.
- India also has multiple regulators system with RBI looking at banks and NBFcs, SEBI responsible for capital market related entities, IRDA for insurance, FMC for commodities markets etc.

As each kind of regulatory structure suffered in this crisis, policymakers in each economy are busy redesigning the financial regulation structure. Some countries like US, UK, EMU and India have already initiated some changes in the space.

There are two common themes in each of these new regulations. First is that central banks get more responsibilities to supervise the financial system and macroprudential policies. Second, economies are setting up a central council which will include all the financial regulators and coordinate the overall policies. The council is either being headed by Central Bank head or Finance Minster depending on each country.

Hence, initially there was confusion about who will be responsible for these policies. But with many discussions and debates, central banks are seen as main carriers of macroprudential policies. It is because they have a competitive advantage and study macroeconomic and financial markets extensively.

As the crisis was taking place, central bankers were blamed for ignoring the risks. To this central bankers said that they saw the risks and warned in many ways but did not have the tools to address these risks. Policy interest rates can only help in price stability and do not help in mitigating financial risks. With these macroprudential tools they will now have two tools for two objectives. Kiyohiko G. Nishimura, Deputy Governor of the Bank of Japan in a speech says macroprudential policies alone are unlikely to help. It needs to be combined with monetary policy.

Despite this broad understanding, some economists like John Taylor do not agree for this expanded role of central bank. He says adding more tasks to central banks will shift their focus from managing inflation and also makes them vulnerable to political intervention.

- **Rules vs. discretion –** This question follows once we agree that central banks are going to be the chief architects of macroprudential policies. When and how do central banks apply macroprudential tools?

  In monetary policy there is a constant debate on whether it should work based on some pre-standard rule or discretion of the central bankers? The same debate applies here. Should the macroprudential policy be applied on basis of some rule or would it be based on central bankers' discretion? In monetary economics, experience shows that policy works best when it is transparent but there are situations when discretion is required. For instance, as the crisis was shaping up, some central bankers lowered policy rates despite high inflation. This was criticized as in going by rulebook central banks should be raising policy rates. But the policymakers based on experience saw the crisis hitting demand and lowering inflation. Hence they cut policy rates.

  Same logic is likely to be applied in area of macroprudential policies. Both rules and discretion are likely to be applied. In case of financial markets discretion might matter more as markets overreact at times and using macroprudential policies is not needed.

- **Regulatory arbitrage and Cross Border coordination:** This was also one major hindrance in this crisis. The financial firms have become global and interconnected but regulation remains local. This is likely to remain even now but more coordinated would be needed to manage the global entities and limit regulatory arbitrage.

- **Communication and Technical Issues:** Fed Chairman Ben Bernanke in a speech (22 August 2008) pointed out that macroprudential regulation would be very demanding and could be very costly for both regulators and firms they supervise. It also poses communication issues and expectations of public and financial markets would have to be managed carefully.

Lessons from Asia/Emerging Economies on Macroprudential policies

In May-2010, BIS released a report titled "Macroprudential instruments and frameworks: a stocktaking of issues and experiences". The report surveys 33 central banks points emerging economies and advanced economies. It finds emerging economies have been more proactive in using these tools compared to advanced economies. There are plausible reasons for this:

- The frequent crisis in emerging economies has led their policymakers to understand the painful linkages of financial cycle with economy cycle
- In most emerging economies, central banks continue to be responsible for banking supervision and can thus manage the macroprudential policies.

In a speech (dated 17 June 2010), BIS general manager Jaime Caruana highlights Asian macroprudential policies. He says these policies have been in Asia since 1990s and have proved to be effective. Hong Kong used loan-to-value regulation to mitigate real estate lending in the 1990s. Though, Hong Kong still struggled after the housing bubble burst, it left banks in a better position to survive the subsequent crash. He lists Asian countries which have used these tools from time to time (Table 2). The same tools have been used by China, Hong Kong and Singapore after this crisis as well to prevent build up of asset price bubbles.

Table 2: Asian experience with macroprudential tools: examples

Objective	Tools	Examples
Manage aggregate risk over time (ie procyclicality)	Countercyclical capital buffers linked to credit growth	China
	Countercyclical provisioning	China, India
	Loan-to-value (LTV) ratios	China, Hong Kong SAR, Korea, Singapore
	Direct controls on lending to specific sectors	Korea, Malaysia, the Philippines, Singapore
Manage aggregate risk at every point in time (ie systemic oversight)	Capital surcharges for systemically important banks	China, India, the Philippines, Singapore
	Liquidity requirements / funding	India, Korea, the Philippines, Singapore
	Limits on currency mismatches	India, Malaysia, the Philippines
	Loan-to-deposit requirements	China, Korea

Source: Caruana (2010)

India and Macroprudential Policy

In another speech (dated 23 April 2010), BIS chief Jaime Caruana remarks:

> *Less well known but equally important is the experience of the Reserve Bank of India (RBI), which has also been active in introducing macroprudential tools. The RBI has introduced measures to restrain credit growth for housing and consumer finance, to reduce excessive speculation in equity and commodity markets, and to build up buffers through countercyclical provisioning.*

It is these policies which have got RBI and its officials the praise from both central

bankers and economists worldwide. Noted economist Joseph Stigilitz has praised RBI's policies which helped protect Indian economy. The same can be said for other emerging and Asian central bankers as well. The emerging economies have managed to recover much faster from the crisis and are driving the world economy. It has been possible because of their policies which prevented a vicious cycle of finance with real economy.

RBI Deputy Governor, Ms Shyamala Gopinath highlights RBI's experience with macroprudential policies in a speech (dated 4 August, 2010). She points out how RBI started tightening risk weights on real estate as risks from growth in housing and consumer credit were seen. RBI increased risk weights and provisions on commercial real estate in phases from Dec-2004 to Jan-2007.

Table 3: RBI measures

Year/Month	Commercial Real Estate (CRE) Risk Weight (%)	CRE Provisions on Standard Assets (%)
December 2004	100	0.25
July 2005	125	0.25
March 2006	125	0.40
May 2006	150	1.00
January 2007	150	2.00

Source: Gopinath (2010)

The speech also highlights the importance of discretion in these policies. RBI did not have any disaggregated data to support RBI's concerns on the potential risks of rising bank exposures to real estate. RBI saw a clear trend of rise in aggregate bank credit. Then as RBI monitors banks lending closely a few cases of lax bank lending standards to real estate, underpricing of risks etc were brought to RBI's notice. Then prices of real estate and aggressive bidding for land auctions were added factors. These together prompted RBI to intervene and undertake macroprudential policies.

In the second quarter review of monetary policy 2010-11, RBI again used its macroprudential policies. It had stated in its macroeconomic review in July-2010 that prices in real estate had started rising. Seeing the trend continuing, RBI took following measures:

- Loan to Value Ratio in Housing Loans - At present, there is no regulatory ceiling on the loan to value (LTV) ratio in respect of banks' housing loan exposures. RBI proposed that LTV for housing loans hereafter should not exceed 80%.
- Increased Risk Weights on Residential Housing Loans of Rs. 75 lakh and above, irrespective of the LTV ratio, to 125 per cent.
- Banks were seen giving teaser rates for Housing Loans. These rates are low and fixed in first few years and then increase. In 2007 crisis too, teaser rates were seen as instrumental in people taking housing loans aggressively only to repent later. RBI noted that apart from underestimation of risks by individuals, banks at the

time of initial loan appraisal do not take into account the repaying capacity of the borrower at normal lending rates. To make these loans costlier for banks RBI increased the standard asset provisioning by commercial banks for all such loans to 2%. It clarified that this would apply to old loans given on teaser rates as well.

In terms of macroprudential theory, the above policies were to mitigate procylicality in the system. A rise in housing prices and increased funding by banks leads to build up of risks over a period of time and could impact economy adversely.

Apart from this RBI also took steps to lower risks arising from common and correlated exposures (cross sectional risk). It has initiated prudential norms to increase Capital Adequacy for financial conglomerates and limit their interconnectedness.

Basel III and Macroprudential policies

Basel III norms have been released and the focus is on financial stability. The new proposals have been drafted taking stock of lessons from the 2007 crisis and various regulatory policies. The reforms are initiated both on micro and macroprudential front. On macroprudential front, following major measures have been proposed:

- Leverage Ratio: BIS research shows leverage ratio did the best job of differentiating banks that needed public support and those that did not. Hence, there is a proposal to apply this ratio to differentiate high-leveraged banks with low-leveraged ones. This has been suggested by other central bankers as well
- Building capital buffers in good times so that pressures can be absorbed when the cycle reverses.
- Global systemic banks will be required to absorb losses beyond the Basel-III requirements. However, identifying these banks requires a lot of clarity and coordination amidst global policymakers.

Concluding Thoughts

Jaime Caruana says *"The term "macroprudential" has risen from virtual obscurity to extraordinary prominence following the recent financial crisis"*. The above paper is an attempt to summarise the debate around macroprudential policy. The approach is still in its infancy but the broad thrust of the policy has become clearer with each discussion. Infact, central banks of emerging economies have been found to be undertaking these policies in their own limited capacity. For it to become a global practice, still much work needs to be done. Emerging market central banks have a key role to play in framing the right policies. What is also critical is the understanding that we need regulators who want to regulate. Without this, the best sets of regulatory policies are likely to fail.

Given the hype around the subject there are strong chances that this new framework is overapplied. The macroprudential regulation serves as complementary to the microprudential regulation. It has to be remembered it is just another tool in the overall financial regulatory framework and can be wrong as well. Lord Adair Turner in a speech points out each edition of IMF's Global Financial Stability Report is full of macroprudential analysis and failed to pick the risks. Hence, Macroprudential policy is no magic bullet and cannot end financial crises. It just helps understand the overall risks and if done properly can lower the costs of the financial crisis.

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