IS MACRO-PRUDENTIAL REGULATION THE OPTIMAL PATH TO FINANCIAL SYSTEM STABILITY?

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Macro-prudential regulation is an approach to financial regulation which is aimed at mitigating the risk of the entire financial system often referred to as "systemic risk", in order to maintain systemic stability and prevent or minimize impact of systemic crisis. The term was first used in the late 1970s in unpublished documents of the Cooke Committee and the Bank of England. But it was only in the early 2000, after two decades of recurrent financial crises in industrial and, most often, emerging market countries that the macro-prudential approach to regulation became topical on the global agenda.

The main argument for macro-prudential regulation is that it helps reduce the risk and the macroeconomic costs of financial instability. It is recognized as a necessary ingredient to fill the gap between macroeconomic policy and the traditional micro-prudential regulation of financial institutions.

When I was the Chief Economist of Access Bank Plc, I spearheaded the modelling of the entire financial system taking into account linkages and inter-linkages between and among all players in the system in order to isolate those factors that could impede the objectives of corporate strategies in terms of impact on capital. We went further to introduce contagion effects and ended up with reverse stress testing. Our conclusion was that it is misleading to limit analysis to micro factors without building in macro-economic influences in a general equilibrium framework.

To be sure, macro- and micro-prudential perspectives differ in terms of their objectives and understanding on the nature of risk. Traditional micro-prudential regulation seeks to enhance the safety and soundness of individual [micro] financial institutions, as opposed to the macro-prudential view which focuses on welfare of the financial system as a whole. Macro-prudential policy takes into account system-wide problems, often ignored or unnoticed by micro-prudential regulators.

Further, risk is taken as exogenously-determined [outside the model] under the micro-prudential perspective, in the sense of assuming that any potential shock triggering a financial crisis has its origin outside the behaviour of the entire financial system. The macro-prudential approach, on the other hand, assumes that all risk factors endogenously-determined , i.e., taken as a systemic phenomenon.

System wide issues arise because individual market players do not take into account systemic impact of their behaviour. This happens not necessarily because of bad intentions: often systemic risk cannot be identified without having access to timely and aggregated information, which from my experience, is difficult to obtain in a developing economy such ours.
So the point really is that macro-prudential policy addresses the interconnectedness of individual financial institutions and markets, as well as their common exposure to economic risk factors. It also focuses on the pro-cyclical behaviour of the financial system in the effort to foster its stability.

**Macro-prudential tools**

There are several number of instruments that are in use even though there is no agreement about which one should play the primary role in the implementation of macro-prudential policy.

Most of these instruments are aimed at preventing pro-cyclicality of the entire financial system on the asset and liability sides, such as the cap on loan-to-value ratio and loan loss provisions as well as cap on debt-to-income ratio.

The following tools are currently in use in several countries:

- **Countercyclical capital buffers (CCB)** - to avoid excessive balance-sheet shrinkage from banks in trouble or a buffer aimed to achieve the broader macroeconomic goal of protecting the banking system from periods of excess aggregate credit growth often associated with the build-up of system-wide risk.
  
  The Basel Committee on Banking Supervision (BCBS) sees the CCB as resulting in the following benefits:

  i) Protecting the banking sector from losses resulting from periods of excess credit growth followed by periods of stress;

  ii) Helping ensure credit remains available during periods of stress;

  iii) During the build-up phase, as credit is being granted at a rapid pace, it may cause the cost of credit to increase, acting as a brake on bank lending.

- **Cap on leverage** - calculated by dividing Tier-1 capital by the bank's average total consolidated assets (finance) in order to limit asset growth by tying banks' assets to their equity;

- **Levy on non-core liabilities** [i.e., liabilities outside traditional retail deposits] - to mitigate pricing distortions that cause excessive asset growth. In fact, the ratio of non-core to core liabilities reflects the underlying pace of credit growth relative to trend and may be expected to give a window on risk premiums ruling in an economy.; and

- **Time-varying reserve requirement** [i.e., the cash reserve ratio] - as a means to control capital flows with prudential purposes, especially for emerging economies.

There are other tools meant to prevent the accumulation of excessive short-term debt:

- **Liquidity coverage ratio** which defines how much liquid assets have to be held by financial institutions and is designed to ensure that financial institutions have the necessary assets on hand to ride out short-term liquidity disruptions.;

  **Liquidity** risk charges [proposed in February 2009 as a new macro-prudential tool] to discourage
systemic risk creation by banks] that penalize short-term funding. The charges target liability risk, so they are often complemented by other reforms, such as capital requirements, aimed at asset risk. The argument is that a unit of short-term funding should be taxed in proportion to its marginal contribution to a bank's contribution to systemic vulnerability;

- Capital requirement surcharges proportional to size of maturity mismatch aimed at reducing the risk that some financial firms remain "too big to fail". By further increasing the amount of the most loss-absorbing form of capital that is required to be held by firms that potentially pose the greatest risk to financial stability, it is intended to improve the resiliency of these firms;
- Minimum haircut requirements on asset-backed securities. A collateral haircut (and the related concept of initial margin) is an adjustment to the market value of collateral to reflect the risk that the cash realised by the liquidation of collateral securities may turn out to be less than the quoted market value of those securities, due to issuer credit and market liquidity risks on the securities, and the operational and legal risks common to all collateral. Haircuts are seen as potentially useful in restraining the build-up of excessive leverage by acting in a manner similar to reserve requirements on deposits.

In addition to the above, there are different types of contingent capital instruments (e.g., "contingent convertibles" which is a security similar to a traditional convertible bond in that there is a strike price (the cost of the stock when the bond converts into stock). What differs is that there is another price, even higher than the strike price, which the company's stock price must reach before an investor has the right to make that conversion (known as the "upside contingency") and "capital insurance")--. These have been proposed to facilitate bank's recapitalization in a crisis event.

But just how effective are macro-prudential tools? This is not an easy question.

For the case of Spain, Saurina (2009) argues that dynamic loan loss provisions (introduced in July 2000) are helpful to deal with pro-cyclicality in banking, as banks are able to build up buffers for bad times.

Using data from the UK, Aiyar et al. (2012) found that unregulated banks in the UK have been able to partially offset changes in credit supply induced by time-varying minimum capital requirements over regulated banks. Hence, they infer a potentially substantial "leakage" of macro-prudential regulation of bank capital.

For emerging markets, several central banks have applied macro-prudential policies (e.g., use of reserve requirements) at least since the aftermath of the 1997 Asian financial crisis and the 1998 Russian financial crisis. Most of these central banks' authorities consider that such tools effectively contributed to the resilience of their domestic financial systems in the wake of the late-2000s financial crisis.
Other researchers also indicate that macro-prudential policies may have a positive contribution to long-run average growth. Jeanne and Korinek (2011) or instance, show that in a model with externalities of crises that occur under financial liberalization, well-designed macro-prudential regulation both reduces crisis risk and increases long-run growth as it mitigates the cycles of boom and bust.

Despite its perceived benefits, there are several costs of macro-prudential regulation. Some concerns have been raised about the impact of macro-prudential policies on the dynamism of financial markets and, in turn, on investment and economic growth. Popov and Smets (2012) thus recommend that macro-prudential tools be employed more forcefully during costly booms driven by over-borrowing, targeting the sources of externalities but preserving the positive contribution of financial markets to growth.

In analysing the costs of higher capital requirements implied by a macro-prudential approach, Hanson et al. (2011) report that the long-run effects on loan rates for borrowers is quantitatively small.

**The key question, therefore, is: Is financial stability the ultimate objective of Macro-prudential Policy?**

There is no simple answer:

Yes if we agree, that all problems start from the financial sector; and

No, if crisis starts elsewhere in the economy.

Historical experience shows, that many crisis started elsewhere, i.e. due to government policy, excessive corporate or household leverage. There is broad agreement that Monetary Policy should focus on these key issues:

i. Resilience of the financial system (structural policy):- Crisis prevention - Crisis management

ii. Credit flow: Limit excessive leverage: Influence supply and cost of credit

III. Crisis prevention:

- Lean against the “boom”: reduce the amplitude of financial cycle
- Minimize cost of economic crisis: build institutional resilience

IV. Crisis management: - Bank resolution schemes; Deposit insurance; Memorandum of Understanding among authorities; information sharing and policy coordination; Crisis simulation exercises and agreements on burden sharing; and Liquidity support.

An important and very relevant issue worth consideration is the relationship of macro-prudential regulation to other macro-economic policies. The diagram that follows is quite apt.
Tensions might arise between macro-prudential and micro-prudential policies because of similar transmission mechanisms.

What needs to be done?

Risk assessment: both, micro and macro-prudential policies should be coordinated

Both policies should be coordinated during the downturn: macro-prudential policy aims at stabilizing markets, avoiding excessive deleveraging. If micro-prudential oversight keeps pressing on capital buffers, might face policy incompatibility.

We need a clear tradition to relax margin requirements and countercyclical buffers during crisis times. It is rather inappropriate to enforce and let institutions to use accumulated buffers, despite temptation to restrict and maintain these buffers.

During the downturn, micro-prudential regulator has an incentive to stay on a safe side and ask banks to recognize as much losses as possible. This will further dump asset prices and credit growth thereby relax capital and liquidity standards.

How do we therefore, align interests? It is best to use forward looking risk assessment tools such as Stress testing and Asset quality review. They are also compatible with market incentives and perception.

Macro-prudential policy is designed to limit systemic risk, thus it exerts “top-down” approach to financial system. The need of Macro-prudential policy arises due to market -externalities.

Macro-prudential policy aims at limiting structural vulnerabilities and cyclical behavior of market participants. Macro-prudential policy targets include but are not limited to appropriate loss adsorption buffers and credit growth, may include leaning against asset price “bubbles” or reversals. It is, therefore, safe to say that macro-prudential regulation compliments micro-prudential regulation in providing an optimal path to financial sector stability.