Pursuit of Complete Markets – The Missing Perspectives

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1. It is my pleasure to be delivering the keynote address at the FEDAI conference being hosted in this beautiful country. India and Kenya share a historical relationship and I am delighted to have got an opportunity to visit this country.

2. I have been following some of the recent interesting initiatives by the Central Bank of Kenya and was really impressed by the developments in the areas such as payment systems, credit information sharing, currency management, financial inclusion, government securities trading. These are some of the real issues in an emerging economy and the Kenyan experience is reminiscent of the gradual process in India over the past couple of decades in the direction of financial sector reforms – how piece by piece, at times forced by events, the structural edifice for the financial system and market infrastructure was put in place.

3. India's reform path in the financial sector has been different from most economies, including other emerging markets. It has been a measured, gradual, cautious and steady process, devoid of the many flourishes observed in other countries. From the outset, India has resolved to attain standards of international best practice, but the endeavour has been to fine tune the process keeping in view the underlying structural, institutional and operational considerations.

4. In terms of broad stocktaking in respect of financial markets, we have today a deep and liquid equity spot and derivatives market, a very large and liquid forex OTC spot and derivatives market, a recently introduced exchange traded currency futures, a very large Government securities market and interest rate swap market, a robust securitization market, a large primary market in corporate bond and money market instruments, a repo market in Government securities as well as corporate bonds. There is a functional regulatory framework for each of these markets.

5. However, in my address today, for a change I want to focus on what we don't have as yet: in terms of market segments, we do not have an active secondary market in corporate bonds, a credit derivatives market, an active interest rate futures market (inspite of a new product being re-launched on the exchanges few months back), an active structured derivatives market. In terms of participants, we do not have an unrestricted access to foreign investors in various markets and instruments.

6. Before addressing each of the above 'missing' elements in our context, I would like to dwell a little on the conception of the 'complete markets' and talk about a few accepted precepts related to financial markets that have been put to question post-crisis. In the last conference, I remarked that we would continue to learn from the lessons as the crisis was

still evolving. As we are transiting from crisis to recovery, a few fundamental issues have become clearer.

7. The pursuit of complete markets, before the crisis, was axiomatically believed to be an unalloyed virtue and the policy and regulatory frameworks were expected to have this as an explicit policy objective. It had become the holy grail of market regulation and everything else followed from this fundamental truth. The gospel also became a convenient complement to the idea of free cross-border capital mobility, with the logical conclusion that free capital flows into the financial markets are necessary for efficient allocation of resources and for completion of markets by providing more liquidity.

8. Technically speaking, a complete market is one in which the complete set of possible gambles on future states-of-the-world can be constructed with existing assets[1]. In other words, a financial market place is said to be complete when a market exists with an equilibrium price for every asset in every possible state of the world. Derivatives are expected to do precisely this, though subject to several simplistic assumptions. The conception of "complete markets" essentially entails freedom to the arbitrageurs to operate across cash and derivatives markets in each asset class to be able to enforce the equilibrium price.

9. So far so good. However, the critical part from a regulatory and systemic stability perspective is that sole pursuance of completion of markets may demand a certain kind of cash markets, which fit into the theoretical construct required for an efficient derivatives market. Thus the regulatory framework for cash markets gets driven by the demands of the efficient derivatives market more than the underlying needs and systemic risk assessment. In a perfect case of tail wagging the dog, the elusive search for market completion and efficient derivatives markets drives the cash markets rather than the other way round. The risks induced by this process of backward re-engineering could be serious, particularly in case of key macroeconomic market variables such as interest rates and exchange rates.

10. The crisis has undoubtedly raised serious issues with regard to the above market philosophy, as clearly evident in the explicit focus on financial stability which is being made formal mandate for all regulators, as part of the restructured regulatory arrangements in countries such as US and UK. While the crisis has not led to usurpation of the entrenched belief in the neoclassical theory of markets, certain long-held axioms have certainly been demolished. I would touch upon a few such issues in our context.

- **Financial markets are self-equilibrating and hence self-correcting**

11. The pre-crisis paradigm pledged its faith in the acclaimed self-correcting nature of markets, whereby self-regulation, internal risk management, assessments by credit rating agencies or setting of standards by industry participants were felt sufficient for ensuring

[1] http://economics.about.com

an efficient configuration of outcomes in terms of price and quantity. The regulatory role envisaged in this paradigm is confined to identifying the market imperfections and improvising on disclosure and transparency requirements towards efficient outcomes. Any divergence from the efficient configuration was thought to be transitory and self-correcting led by anonymous competitive forces and dissemination of information.

12. The current crisis has, however, demonstrated that the financial markets may not necessarily be driven to equilibrium by fundamental factors, but are often subject to divergent disequilibria, manias, panics and crashes. The self-framed codes of conduct devised by the financial industry also failed to activate the process of self-correction sufficiently. Similarly, the internal risk management system in global financial institutions, which is supposed to sensitize the senior management gave way to the risk takers in an atmosphere of high returns and apparently low risks. In view of the deep inter-connectedness and externalities posed by the markets, it is increasingly being felt that 'no market, no territory and no institution' should escape supervision (M. Barnier, Member, EC, February 16, 2010).

- **All financial innovation is useful and desirable**

13. In the long lull of the NICE (non-inflationary consistent expansion) pre-crisis phase, the financial sector came to be looked upon as the panacea for all ills and financial innovation was taken as necessarily efficiency enhancing. In a clean, theoretical construct, financial derivatives were perceived as pieces of a jigsaw puzzle that could be combined/arranged in multiple ways to customize cashflows for hedging and managing risk. However, as Mr. Satyajit Das has noted in a recent FT article, derivatives were mostly used to *"circumvent investment restrictions, accounting rules, securities and tax legislation*". The clearest example being the factory production of credit derivatives portending to convert, quite literally, trash into gold. The recent case of Greek swaps is another instance. Without going into the legitimacy of such deals, what comes out clearly is the use of derivatives to suitably alter/manufacture cross-temporal cashflow profiles in a non-transparent manner.

- **Key parameters for market efficiency are turnover and liquidity**

14. The crisis has clearly brought home the point that the size and liquidity of markets are not sufficient conditions for protecting the markets from malfunctioning. The hitherto perceived metrics for market performance – larger turnover, deeper liquidity – though beneficial, need to be supplemented with the assessment of markets in terms of their role in enhancing systemic risks, accentuating risk contagion, contributing to excessive volatility and leading to excessive speculation.

15. As Lord Turner, Chairman, FSA, UK mentioned in a recent speech in Mumbai, "*the benefits of increased market liquidity have been an article of faith, frequently deployed to argue against tighter regulation"*. However, he argues that beyond a point, the marginal benefits from increased liquidity are minmal and are far outweighed by the destabilising and harmful herd and momentum effects.

- **Financial risk can be accurately measured and managed**

16. *The myth of the riskometer*, a term used by Jon Danielsson of the LSE[2], is an apt description of the false sense of certainty provided by risk models and measurement techniques which legitimized the 'risk-based' paradigms in diverse areas such as regulatory capital, performance evaluation, compensation etc. To paraphrase the Nobel Laureate, Paul Krugman, we, '*as a group, mistook beauty, clad in impressive looking mathematics, for truth*'. While these methods can certainly be of an indicative value, the problem arises when such measures are sought to be monetized. The scope for both errors as well as manipulations is larger.

- **Free capital account imperative for deep, liquid financial markets**

17. Much of the argument, pre-crisis, for free capital mobility was based, among other things, on the potential benefits for the development of efficient and complete markets domestically. Greater foreign participation in domestic markets was perceived to be inherently beneficial for the financial system. Restrictions on foreign participation were generally viewed as involving loss of welfare and antithetical to the free market mechanism. However, there is now a greater appreciation of the need for strong domestic players in all markets and the risks of excessive foreign dominance in any of the domestic market segments are now being acknowledged.

18. While foreign-owned banks, the world over, generally contributed to the liquidity crunch in the context of deleveraging during the crisis, the emerging Europe with heavy dependence on foreign banking groups was particularly exposed, culminating in the Initiative for Coordination of European Banks to induce parent banks to maintain exposures to their subsidiaries. As chronicled by the BIS Annual Report, 2009, countries such as Hungary, Indonesia, Mexico and Turkey faced huge problems when there were sudden reversals in foreign investment in local bond market. Such volatile flows can exacerbate the situation merely through the confidence channel. The time honoured principles that underlie opening up of debt markets to foreign investment are convergence in nominal and real interest rates on a sustainable basis, low public debt/GDP ratio and low fiscal deficit to GDP ratios on a consistent basis. In the context of large sovereign debts, countries with large domestic investors holding sovereign debt are considered to be less vulnerable to attacks by speculators.

19. More generally on the issue of capital controls, there is a growing recognition of the serious challenges for macroeconomic policy on account of large swings in capital inflows over a very short period of time beyond the absorptive capacity of the economy. There are also implications for financial stability in the forms of induced risks of currency mismatches, asset price bubbles and crowding out of domestic financial institutions on the lending side, increasing their risk appetite in search of returns. All these impose significant adjustment costs and complicate monetary and exchange rate management. The recent IMF update on the World Economy Outlook states that

[2] www.voxeu.org

"*Recognizing that inflows can be very large and partly transitory, depending on circumstances, macro-prudential policies aimed at limiting the emergence of new asset price bubbles, some buildup of reserves, and some capital controls on inflows can be part of the appropriate response.*"

Completing the markets in India

I. Corporate bond market

20. The absence of active corporate bond market is generally perceived as one of the key missing market which has also hindered the non-bank funding for infrastructure projects. However, the reasons for this lie more with the deeper structural issues in the economy. Traditionally, raising of resources through issuance of corporate bonds has not been a preferred mode for Indian corporates. Bank finance, coupled with equity markets and external borrowings have been the preferred funding sources. The public financial institutions and financial intermediaries have been dominant issuers although in the recent past following the lack of access to overseas markets the non-financial sectors are also raising funds in this market.

21. The above issues are also not unique to India. Even internationally, other than few markets like the US and Japan, there are very few liquid secondary bond markets. Most corporate bond markets are used by large, highest rated issuers and the investors including in India are typically buy and hold. Retail interest is typically low given the relatively low returns compared to equities and aversion to credit risk.

22. Following the recommendations of the High Level Expert Committee on Corporate Bonds and Securitisation (chairman: Dr. R H Patil) numerous steps have been taken both on the primary issuance side as well as to smoothen the secondary market trading process for corporate bonds. Going forward there is need to have uniform stamp duty, product standardization, centralized database and more importantly the removal of restrictions on long term investors such as insurance companies and pension funds. Action also needs to be taken towards improving bankruptcy provisions.

23. Foreign investment in corporate bond market has been permitted upto a limit of USD 15 billion, which remains substantially underutilized. Apart from this, clearing houses of the exchanges have been given access to the RTGS for settling the OTC trades in corporate bonds on DvP basis.

24. It has been argued that if banks are permitted to guarantee corporate bonds, the market may attract more interest. However, such a move will ultimately hinder the development of genuine corporate bond market and more importantly, result in risk concentration within the banking system, which is not the purpose of market-based disintermediation process.

25. Recently, repos in corporate bonds have been permitted. Only listed corporate debt securities which are rated 'AA' or above by the rating agencies have been made eligible

for repo. To contain leverage, a minimum haircut of 25 per cent has been stipulated and selling of borrowed securities under repo has not been allowed during the period of repo.

26. The stance of the Reserve Bank towards introduction of repo in corporate bonds needs to be viewed in the perspective of the role of repo in the recent financial crisis. Repo is a convenient way for building up of leveraged positions especially during good times when the haircuts are very low and liquidity is abundant. Institutions like investment banks (Bear Sterns, Lehman Brothers) with good credit standing managed to borrow from the repo market at very low rates thereby encouraging them to leverage excessively. In normal times, the repo borrowing is cheap and rollover is easy whereas during periods of financial stress, the rollover becomes difficult, leading to a liquidity crisis. The risk of the illiquidity of the underlying asset leading to the drying up of repo markets is accentuated during periods of financial crisis.

27. Further, in contrast to the repo transactions in Government securities, where the inherent risks are low due to the nature of the underlying (sovereign bonds) and the presence of a robust clearing and settlement system with CCP guarantee, the repo transactions in corporate bonds do not lend themselves to a DVP III mechanism in view of the heterogeneous nature of the bonds. Repos in corporate bonds, therefore, carry considerable risks that get amplified in the light of the state of the underlying cash market in corporate bonds.

28. In an interesting paper, Gary Gorton and Andrew Metrick in their Paper "Securitised Banking and the Run on Repo"[3] have examined the role of repo market in the recent financial crisis. They show that the genesis of the crisis was a run on the "repo" market. This market is as vulnerable to a run as an unsecured funding. This is especially the case when the collateral is of a lower quality and markets are illiquid.

29. The RBI has therefore adopted a cautious approach in its regulation of repos in corporate bonds. Going forward, RBI will closely monitor the performance of the repo market for corporate bonds once it becomes operational and will review the directions at an appropriate time.

II. Credit Derivatives

30. Credit Derivatives, in themselves, may be good risk management tools helping the investors to transfer/hedge their credit risk. Such ability to hive off unwanted credit risk encourages investors to hold bonds which otherwise they would have not been inclined to hold, thus enhancing the liquidity in the markets. Credit derivatives also help participants to exercise their view on the credit risk of an entity and help the credit risk to align itself to 'fair' levels. The problem, however, arises when the products do not remain what they are originally intended to be. If these products disconnect themselves from the real sector

[3] [NBER Working Paper 15223 (2009)]

and start behaving as standalone products, they could set a perfect stage for perverse incentives to set in, as we have been observing in the recent times.

31. Disconnect can happen because CDS does not involve an insurable interest. Contrary to popular perception, CDS is neither fully an insurance contract nor a swap contract like an interest rate swap (IRS). While in the normal insurance contract, having insurable interest is a pre-requisite, the same is not the case with CDS. Further, unlike an IRS contract, the payoffs in a CDS to the protection seller are the 'fees' for assuming a contingent liability and not actually an income. The accounting treatment of recognizing fees as income, while the contingent liabilities are relegated to 'below the line', might prompt participants reckon the CDS as a pure income generating strategy, oblivious to the embedded risks.

32. While the facility of buying protection even when not having an insurable interest increases the universe of protection buyers thus increasing the market liquidity, it may result in adverse incentives. If the lenders have protection via CDSs, they may have more to gain from the company failing than they would gain if the company survives. If this is the case, the creditors with CDS protection could have incentives to push troubled companies into bankruptcy instead of working out the troubled debt. Recently in the context of CDS on Greece debt, it is reported that the US regulators will look into the matter of CDS trader destabilizing not only companies but also countries.

33. The CDS contracts involve a complex chain of counterparty risks and any default at any point can potentially become a systemic issue on account of gridlocked market. It is often assumed that once the credit risk is hived off by purchasing the protection, the risk is really out of the books. What is forgotten is, CDS is substituting the credit risk of the issuer with that of the protection seller and the comfort is only as good as the credit worthiness of the protection seller. As observed in the case of AIG, the AAA status of AIG (protection seller) is taken too much for granted, without regard for possibility of credit events. Further, unlike a normal insurance business, the credit events in a CDS transaction are highly correlated, thus exacerbating the paying pressure on the protection seller in the case of a credit event. The incident firmly conveys the importance of fully understanding the dynamics of CDS transactions as different from a normal insurance business and also of a robust counterparty credit risk management while undertaking CDS transactions.

34. The CDS market is envisaged to complete the market by providing to the participants the information pertaining to credit risk. CDS spreads are expected to dynamically, and in real time, reflect the true credit quality of the issuer. It is however, interesting to note that CDS spreads for major international financial groups did not provide any forewarning of the impending disaster, reaching a historical low in the early summer of 2007, the very eve of the worst financial crisis since the 1930s. In hindsight, this has been a case of extreme under pricing of credit risk, which had significant adverse impact on the real sector. There are inherent dangers in implying the spot fundamentals from the derivative markets, especially in shallow and illiquid segments. The CDS spreads which could have moved either on credit perceptions or on liquidity perceptions, prompt participants to

revise their views on the credit quality of the issuer, which may be misplaced, but at times self fulfilling. Such 'tail wagging the dog' tendencies may, even result in escalation of borrowing costs for the issuers such as corporates and banks, even when the fundamentals have not changed.

35. You may recall that RBI had issued draft guidelines on CDS in 2007 but in the light of the crisis had kept in abeyance issuance of these guideliens. As per these guidelines it was proposed to permit single name plain vanilla CDS on resident reference obligations for resident entities. It was stipulated that the underlying asset/ obligation, the reference asset/ obligation, the deliverable asset/ obligation shall be to a resident and denominated in Indian Rupees. Further, the credit derivative contract was required to be denominated and settled in Indian Rupees.

36. With the benefits of lessons learnt from the global crisis, an Internal Group in Reserve Bank is revisiting the issues related to introduction of CDS in the Indian markets. Some of the issues that are pertinent, besides the above general issues, in this context are:

- ***Rating requirement for the underlying***: There are mixed views, as regards requirement of rating for the underlying of CDS. Internationally, it is observed that while there is a greater liquidity for publicly traded credits, there is no requirement of ratings. It may be argued that ratings are not required as CDS itself will act as a proxy for rating and is a more dynamic and closer reflection of the credit rating than the ratings issued by the rating agencies. On the other hand others could view the requirement of rating as a means to bring in more information dissemination and transparency about the underlying, which may, otherwise not be available to the participants. Especially in the context of Indian markets, where secondary market liquidity is dormant, to provide the participants, information required for considering entering/continuing/unwinding their CDS positions, the requirement of rating of the underlying may be necessary, at least to start with.

- ***Insurable interest***: The crisis has clearly demonstrated the need to ensure existence of insurable interest for buyers of credit protection. The issue is whether banks that are market makers should be allowed to trade CDS without an underlying subject to limits. If so, we need to determine how to compute such limits.

- ***Centralized reporting:*** The opacity of OTC markets, especially those of derivatives, has also been cited as one of the contributors of the global turmoil. The need for centralized reporting, enabling the regulators to track the built-up of positions and the participants to track the markets, has been flagged by many and already there have been some systems put in place. A centralized reporting system is being contemplated in the Indian context when the CDS are introduced.

- ***Centralized clearing and settlement***: Internationally, centralised clearing and settlement is also being proposed as a measure to address the risk management issues in OTC derivatives. It would be a challenging task to devise a centralized clearing

and settlement framework for single name CDS. The RBI is examining international practices in this regard.

37. The revised draft guidelines will be put in public domain in due course. Meanwhile we welcome any feedback on the above issues even at this stage.

III. Interest Rate Futures

38. Interest Rate Futures (IRF) contracts on 10-year notional coupon bond were launched on NSE on August 31, 2009. Persons resident in India and FIIs have been permitted to participate in the market. The FIIs participation in the market is subject to the condition that the total gross long position in the cash and futures market taken together does not exceed their limit for investments in Government and corporate bonds. The product witnessed activity and increasing volume during the initial period, but the liquidity tapered off subsequently. The discussion in respect of the IRF is about factors inhibiting the growth. I shall like to briefly discuss some of the issues being raised in this regard.

39. Suggestions have been voiced in some quarters that requirement of physical settlement is a major hindrance for liquidity of the IRF market and cash settlement could provide a way out. Now, IRF contracts settled by cash as well as by physical delivery co-exist in the global financial markets. The well established IRF markets in US, UK, Eurozone and Japan use contracts based on physical delivery. Some of the recent IRF markets, notably in Australia, Brazil and Singapore have cash-settled contracts. Korea, which introduced cash settlement, has opted for physical settlement for the 10 year futures. It should be noted that in many of these markets the fiscal position is strong and there are supply constraints leading to fear of short squeeze.

40. The proponents of cash settlement mode point out that in the illiquid market, the 'longs' would end up with illiquid securities. On the other hand, the view against the cash settlement mode is that it does not ensure arbitrage-free cash futures price linkage. Hence, both physically-settled as well as cash-settled IRF contracts have supporting arguments.

41. Notwithstanding the debate in favor and against the cash settlement mode, the physical settlement mode should not pose great difficulties for market participants in taking positions in the IRF market as an insignificant percentage of IRF contracts are carried to the expiration date internationally, as also seen domestically in the first cycle. While the speculators can close out their positions before expiry to book profit, the hedgers can either close-out or roll-over the positions depending upon the tenor of hedging. The arbitrageurs can carry the positions till expiry in order to crystallize the arbitrage profits.

42. Another view is to provide the choice to the participants to settle physically or in cash mode. This may not be an appropriate solution, as it may make it difficult for the 'long' to chalk out his strategy, when he remains unclear till the settlement date as to whether he is going to get the cash, or the physical securities.

43. There is also a view that the option of choosing the security may be given to the 'long' which may help him to avoid taking delivery of illiquid CTD bonds. In such case, the buyers will naturally prefer the expensive security to be delivered to him. This practice may further stifle the growth of the IRF market, as the traders, especially the arbitrageurs may shy away from taking 'short' futures position as he may end up in delivering the most expensive security.

44. It has also been argued that extending the period of short selling to be synchronous with the tenor of the futures contracts, may impart liquidity to the futures market by facilitating efficient arbitrage. However, the view that short selling, directly or indirectly, could pose potential risks and can easily destabilize the markets can't be overlooked. In India, with public sector spending being one of the dominant drivers of the economic growth and in the backdrop of heavily loaded government borrowing programme, and with a rather shallow market, it would need careful consideration to allow free short selling in the government securities market.

IV. Currency futures market

45. Recently, the recognized stock exchanges have been permitted to offer currency futures contracts in the currency pairs of Euro-INR, Japanese Yen (JPY)-INR and Pound Sterling (GBP)-INR, in addition to the USD-INR contracts. Two exchanges have already introduced other currency pairs which has increased the volumes greatly.

46. While the volume of trade in the currency futures has increased sharply, the open interest has remained low and stagnant and constitutes only a small percentage of the outstanding OTC contracts. The above trend reflects that the exchange traded markets are still not being used for hedging purposes by different participants. It is largely the day-traders taking intra-day positions and closing by day-end which dominate the market.

47. It may be pertinent to mention that the cash settlement mode was accepted for currency futures because physical settlement was not a feasible option since Rupee is not fully convertible on the capital account. In the OTC market, there is an elaborate framework for regulating transactions, including derivatives, in foreign currency and presence of an underlying exposure is a basic requirement. It was not possible to carry over this requirement onto the exchange traded market. Hence our reluctance to allow FIIs to trade in this market. It is not considered opportune to remove the requirement of underlying commercial transactions in the OTC market.

V. Structured Derivatives

48. The structured derivative market in India is of nascent origin and most of the structures are equity linked structures. The RBI guidelines clearly prohibit any structured derivative product with another derivative as an underlying. However, many exotic currency derivatives have been popular, primarily involving zero-cost strategies. As part of policy rationalization, the draft guidelines on forex derivatives have suggested permitting writing of covered options while prohibiting zero-cost structures.

49. The cost reduction structures, introduced in 1996 have been used by the corporates in hedging their currency exposures. The products inherently involve a trade-off between reduction in the cost of hedging and a corresponding increase in risk. The concerns relating to proper valuation, mis-selling of such products and other irregularities that emerged in the recent past, have forced the Reserve Bank to re-evaluate the propriety of allowing such products in India.

50. In response to the draft Guidelines, many corporates and industry associations FEDAI and FIMMDA have represented that prohibiting cost reduction structures will seriously impede the dynamic forex risk management operation of corporates and that their competitiveness in the global markets, as their counterparts have flexibility in using such products internationally. Additionally, if such structures are banned, some corporates may not hedge their exposures due to costs, and this may result in aggregation of open currency risk in the system, which is riskier than allowing hedging within a range. It has been suggested that structures may be allowed with safeguards, such as the pay off of such a strategy lies between an unhedged exposure and an exposure hedged through a forward contract, allowing the products only against underlying exposures, not allowing leverage structures, limiting to corporate with threshold turnover and net worth, etc.

51. We are examining the suggestions and the FEDAI conference would be an appropriate forum to debate on the concerns and possible safeguards for such structures.

- **Suitability and appropriateness-** The complex products should be consistent with the users' business, financial operations, skill and sophistication, internal policies as well as risk appetite. Inadequate understanding of the risks and future obligations under the contracts has led to many legal disputes. Some users too have feigned ignorance of the products and deemed it unsuitable only in the event of losses crystallising. The developments have necessitated greater sense of responsibility and circumspection on the part of the banks and the users. In view of the same, it is worth debating that if at all such products are to be permitted it may be restricted to users with robust risk management systems, corporate governance, accounting and disclosure practices. Possible safeguards in this regard could be adoption of international accounting standards minimum net worth criteria, listing, etc.

- **Extent of corresponding increase in risk and net receipt of premium -** the extant guidelines permit cost reduction structures subject to the condition that there is no net receipt of premium as this in effect makes the user a net option writer. However, it has been observed that certain structures were sold, where premia had been passed on the users, thereby exposing them to uncapped downsides. There has been feedback that an additional safeguard to this condition could be to permit only cost efficient structures that explicitly demonstrate that the pay off of such a strategy lies between the pay offs of an unhedged exposure and an exposure hedged through a forward contract.

- **Existence of an underlying –** The underlying principle of FEMA Regulation 25 is that the derivative products should be used only for hedging purposes, although certain operational flexibility has been provided under the past performance route. Excessive

leverage without concomitant underlying would magnify the risk. In view of the risks related in such structures, it is felt that the use of such products, if considered at all, may be liked to crystallized exposures. Also, there should not be any leverage in the structures.

52. As we debate on the issue of cost reduction structures, we may also discuss issues relating to writing of stand-alone options. Given the market conditions and issues relating to suitability and appropriateness, would it be timely to allow writing of standalone covered options? Alternatively, instead of allowing writing of standalone covered options, should we consider allowing cost efficient structures with safeguards? The safeguards reduce the risk of mis-selling. We need market feedback on the degree of safeguards.

Oversight of OTC markets

53. In India, unlike in many other jurisdictions, the OTC markets are well regulated. Under the RBI Act, the validity of any OTC derivative contract is contingent on one of the parties to the transaction being a regulated entity. The key features of the regulatory framework are:
    a. There is a clear distinction between the roles of market makers and users for all OTC derivatives and it is mostly banks and primary dealers in case of certain interest rate derivatives which are permitted to act as market makers.
    b. The users are permitted to transact in derivatives essentially to hedge an underlying exposure. For interest rate derivatives, there is an additional leeway to undertake derivative transactions for transformation of risk exposure, as specifically permitted by RBI.
    c. Structured derivative products are permitted only as long as these are a combination of two or more of the generic instruments permitted by RBI and do not contain any derivative not allowed on a standalone basis.
    d. All derivative instruments are required to be marked to market if a liquid market in the product exists or otherwise marked to model, provided all the model inputs are observable market variables and full particulars of the model, including the quantitative algorithm are documented.
    e. The responsibility for assessment of customer suitability and appropriateness is squarely on the market maker and there are a detailed set of requirements that the market maker needs to fulfill in this regard while selling any product to a user.
    f. All derivative transactions must be undertaken within the Board-approved risk limits. The system of limits should include procedures for the reporting and approval of exceptions to limits.

54. Several measures have been taken in the past to improve the efficiency and reliability of the OTC market.
    - First, the Bank had strengthened the oversight of OTC derivatives transactions through institution of mandatory reporting system for the trade transactions. The OTC Rupee derivatives in India comprise Interest rate swaps, Forward Rate Agreements, FX forwards, Currency swaps, Currency options. The banks have been mandated to

report the inter-bank IRS trade data on-line to CCIL since August 2007. The client level trade data are also now collected from the banks. As and when the system stabilizes, market could be provided with the information. As regards the FX derivatives, the AD category-1 banks report the trade details of forward contracts, currency swaps and currency option to the Bank at fixed periodicity. The reported data provides the basis to the Bank to monitor the market wise aggregated exposure level as well as exposure level of individual banks and concentration of exposures to specific asset classes.

- Second, the Bank has facilitated greater use of central clearing counterparties (CCP) by encouraging clearing initiatives and providing capital relief. Currently, the settlement of transactions relating to G-Secs, Market Repo, CBLO, FX-spot and forward are settled on guaranteed basis through CCIL.

- Third, the Bank had promoted use of electronic trade platforms for improving market transparency and efficiency than that available through completely private bilateral negotiation. The electronic trade platforms lower search costs by improving the ability of market participants to more quickly determine the range of prices at which they could potentially execute a trade, and to more quickly and easily identify a counterparty offering attractive terms. The NDS-OM, NDS-Call, CROMS are the landmark innovations in the space of OTC fixed income and money market.

- Fourthly, the Bank had brought in grater transparency through increased dissemination of price and volume information of the OTC trades. The price and volume data enhances the ability of counterparties and other potential creditors to manage their exposure risks. Further, the increased level of information to the public at large enhances the price-discovery function, improves the options available to the hedgers and moreover, offers greater degree of protection to the unsophisticated class of investors.

55. As per the existing regulations, only primary issuances of CPs and CDs are reported to RBI through the Negotiated Dealing System (NDS). In the case of CPs, the issuing and paying agents (IPAs) are required to report the issue details on the NDS within three days of issue. CD issuances are reported on a fortnightly basis by banks. However, there is no formal reporting of secondary market trades of CPs and CDs in any form, resulting in lack of transparency in the market. Further, settlement of trades in CPs and CDs is done bilaterally with no system of DvP (Delivery vs. Payments) in place. This exposes the participants to settlement risk.

56. With a view to bring in transparency to the CP and CD market and also reduce settlement risks, we are considering to bring in regulatory reporting of all CP, CD trades and non-guaranteed DvP based settlements similar to that of OTC trades in corporate bonds. The modalities will be worked out in consultation with all the stake holders.

Conclusion

57. It has been clearly evidenced during the crisis that financial sector development *per se* cannot be an objective in itself. It needs to be pursued in the broader context of financial stability and has to necessarily correspond to the level of maturity of the financial system and the needs of the real economy. Regulatory comfort and assessment should therefore be a critical determinant in this regard.

58. A lot of far reaching measures have been taken recently in terms of allowing new products such as interest rate futures, currency futures, repo in corporate bonds etc. and work is underway for introducing some others like credit default swaps. Such products are new for the Indian market and an assessment of their implication on other markets, institutional behaviour, and system as a whole would be critical. Going forward, the immediate effort would be to design prudent guidelines, a robust market infrastructure and strengthen the systemic monitoring framework for these new markets.

59. I wish the Conference all success.