*Principles of Financial Market Infrastructures and Innovations in Retail Payments**

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Distinguished speakers, participants, other guests, ladies and gentlemen. It is a pleasure to be amidst you and speak to you all as we conclude this International Seminar on 'Principles of Financial Market Infrastructures and Innovations in Retail Payments' organised by the Reserve Bank.

2. The theme of the seminar, which was chosen after considerable deliberations, is quite apt, given the markets around us. As you know, the term FMI refers to systemically important payment systems, CSDs, SSSs, CCPs, and TRs which facilitate the clearing, settlement, and recording of monetary and other financial transactions, such as, payments, securities, and derivatives contracts (including derivatives contracts for commodities).

3. The role and importance of FMIs in the global financial system came to fore during the crisis which has been succinctly captured in the IMF report 'Central Banking Lessons from the Crisis' (May 27, 2010). The report mentions '*The crisis would have been much more severe had central banks not taken efforts to introduce robust payment and settlement systems, including for foreign exchange, over the two decades ahead of the crisis. The systemic impact of failure of a financial institution depends critically on the robustness of the infrastructure underpinning those markets in which it is active*'.

4. The FMIs which act as plumbers in the financial system helped in maintaining the market confidence during the crisis for two reasons. First, FMIs like the CCPs shift the counterparty risk from participants to themselves thereby ensuring trust in an environment where participants distrust each other and thus provide the market confidence to carry on transacting. Second, their ability to settle when transactions are due for settlement on account of their risk management practices helps in retaining the sanity in the market.

5. Many studies had been undertaken analysing the role of FMIs during the crisis. The common findings of such studies are that FMIs were successful in ensuring reliability and mitigating risks despite unprecedented volatility and shaken market confidence. FMIs like CLS, RTGS systems and CCPs helped in containing the materialisation of systemic risk by maintaining confidence in the interbank trading and settlement of foreign exchange, money markets, *etc.* FMIs were successful in handling the defaults in a non-disruptive manner.

6. Lessons learned from earlier crisis, such as, Herstatt failure in 1974, US equity clearing house difficulties faced in 1987, Hong Kong Future Exchange in 1987, *etc.* helped the regulators in addressing the risks in payment, clearing and settlements systems. Implementation of RTGS systems, adoption of PvP and DvP modes of payments, sound legal framework for settlement finality, setting up of new market infrastructures and robust clearing and settlement infrastructure are the initiatives that helped in curbing recurrence of these risks. Establishment of global standards, such as, RCCP, RSSSs, SIPS, *etc.* helped in effective governance, oversight and supervision of systemically important financial market infrastructures.

7. However, the crisis also gave few important lessons to the regulators. Readiness for the worst case

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scenario does not guarantee protection against future scenario as the future crisis could be much bigger than what has been experienced. There is a need to capture newer risks emerging from links, tiering and indirect participation which were hitherto not captured fully in the existing standards. The recent global crisis revealed that liquidity lines assumed to be secured are not so secured in a stressed scenario. Another important lesson that can be drawn from the recent crisis, especially in a globally interconnected financial market on account of links and interdependencies, is the need for communication and co-ordination among regulators. Finally, there is a need to reduce regulatory and policy arbitrage within and among the jurisdictions.

8. The response of the policy makers to the crisis has been multi-prong and multi-dimensional to ensure that a crisis on this scale may never happen again. The regulatory reforms undertaken under the aegis of G-20, Financial Stability Board and other international standard setting bodies focus on strengthening the micro-prudential and market-conduct regulations supplemented by effective macro-prudential frameworks.

9. The CPSS-IOSCO Principles for Financial Market Infrastructure which replace the earlier standards are part of the global initiatives to reform the financial markets. The principles amplify the critical role the FMIs play in maintaining and promoting financial stability and economic growth and also prescribe standards for strengthening the FMIs to make them robust and resilient to handle future crisis. The standards when fully implemented would ensure that FMIs perform the role they have been designed for *viz.*, shock absorber and plumber of financial systems rather than being the major channel for transmission of financial shocks in form of liquidity dislocations and credit losses.

10. Given this background, we thought PFMI would be an apt theme for the conference. I am certain the esteemed speakers who have been closely associated with the framing of new standards would have demystified the principles and explained the nuances and subtleties of the principles. You would have noticed that the new standards seek to introduce more demanding requirements. The new standards have raised the bar in form of financial resources and risk management frameworks. The significant being the need for Cover 2 requirements both for liquidity and credit risks for systemically important CCPs which are operating in multiple jurisdictions/currencies and which deal in asset classes with 'jump to default' risk profile in recognition of the increased risk posed by such CCPs. The standards also bring forth other important requirements, such as, need for addressing the business risk, need for a recovery and resolution plan, fair and open access, portability and segregation which are all critical.

11. The new standards when compared to old standards provide additional guidance both to the regulators and the FMIs. The standards provide building blocks for risk models, be it for margin calculation, collateral requirements, back-testing and stress testing methodology requirements or liquidity and financial resource planning. It must be recognised that the FMIs differ significantly in terms of their organisation, functionality and design. Thus, principles have been framed with a functional focus so that they provide flexibility while applying them to the FMIs in respective jurisdictions.

12. The intended benefits of the standards could be achieved through effective implementation. The challenge lies in measuring the effectiveness. The assessment methodology provides guidance to the regulators for determining the scope of assessment, gathering facts, developing conclusions and assigning a rating of observance for each principle. The assessment methodology helps in promoting objectivity and comparability across the assessments of observance across FMIs and across jurisdictions. I

hope the sessions on the assessment methodology would have equipped the participants in undertaking effective assessment of principles in your jurisdictions.

13. Another aspect you might have observed would be that unlike the previous standards, the new standards have more enforceability as they are binding on the members of the CPSS-IOSCO on account of their commitment to financial sector reforms. Further, compliance to these standards also provides economic incentive in terms of capital benefits to banks for their exposure to qualified CCPs.

14. No doubt the implementation of these principles is going to pose challenges both to the authorities and FMIs. I am sure the panel discussion would have provided insights on how to meet the implementation challenges. Meeting the liquidity requirements under Principle 7 is going to pose challenges for countries where markets are dominated by a few large players with limited liquidity support from private sources. In such a scenario, liquidity support from central banks assumes significance but it has its own challenges. First, central banks should have mandates for providing liquidity support. Second, even if there are no technical obstacles, the challenge would be in addressing the moral hazards.

15. Similarly, some of the principles would require changes in the legal and regulatory framework. Many jurisdictions are likely to face limitations while complying with requirements under segregation, portability, recovery and resolution, *etc.* In some of the jurisdictions, the Trade Repository (TR) may be a new concept. Without proper legal framework for the regulation and oversight of TRs including the need for addressing the confidentiality issue, it would be a challenge for the regulator to mandate reporting of trades to TRs.

16. The FMIs would also find it challenging in meeting the new standards involving credit risk, liquidity risk or financial resources. FMIs need to build skills and have adequate resources in terms of technology, manpower to develop risk models, historical data bases, scenarios analysis, *etc.* The regulators also need to build skills for evaluation and validation of risk management framework put in place by the FMIs.

17. To summarise, the deliberations, the central bank and the market regulators have challenges ahead of them with respect to performing the responsibilities envisaged under the CPSS-IOSCO principles of FMI. The regulators will be required to set out responsibilities, objectives and criteria for determining who the standards apply to and the necessity to clarify roles in case of multiple authorities. A combination of enforcement tools consisting of formal legal instruments (guidelines, regulations, instructions, sanctions, *etc.*), informal tools (moral suasion), co-operation with other authorities, voluntary agreements, *etc.* have to be worked out. Further, these regulatory and oversight policies have to be transparent, consist and effective.

18. Let me now turn to the other major theme of the seminar – Innovations in Retail Payment Systems.

Retail Payment Systems

19. Although the growing importance of FMIs is acknowledged, the retail payments have their own share of recognition. The innovations that have taken place in retail payments have been country specific, within the respective regulatory framework catering to the needs of the customers. The impact of innovation in retail payments is directly felt by the end-users and reshapes the payment process. Allowing retail payment operations in the country within the broad vision of inclusiveness and moving to less-cash society and ensuring its compliance to the regulatory stipulations keeps the regulators on their toes. But the uniqueness lies in the fact that in most of the countries, the innovations in retail payments are regulator driven.

20. While the Report of the Working Group on Innovations in Retail Payments (BIS, May 2012) formed under the CPSS identifies five product categories: (i) innovation in the use of card payments; (ii) internet payments; (iii) mobile payments; (iv) electronic bill presentment and payments and (v) improvements in infrastructure and security, it is increasingly evident that innovations are taking place with new technology by intertwining products and processes. The emergence of the NFC technology is an example where the card payment product is intertwined with the mobile technology. The mobile POS is also another example. Hence, to my mind, the need of the hour is to think of linkages and integration of technologies.

Thinking beyond domestic coverage and integrating retail payments worldwide

21. As you know, one of the trends highlighted in the Report of the Working Group on Innovations in Retail Payments, is the fact that most of the innovations are developed for the domestic market and only a few have international reach, although similar products and categories have emerged worldwide. The challenge of stretching a retail payment product or process beyond domestic boundaries brings about the need for international standards and principles. The success of the card payment networks like MasterCard and Visa is a classic example of the above. The PCI-DSS[1] standards for the card industry and the PA-DSS standards for the payment application software developer are some such internationally accepted standards. Owing to the network effects inherent in the retail payment market, common standards may help to achieve the necessary critical mass and can create a stable ground for new players coming into the market. Economies of scale and scope, pricing and cost reduction are advantages of the same.

Thinking of inter-operability while innovating a retail payment system

22. While innovation has brought about many products and processes, the challenge is in gearing up to allow interoperability between two retail payment operators. Have the risk factors, costing, pricing, customer convenience and ease been thought of? Integrating two competitive offerings and giving the best product with portability to a customer would lead to a demand driven initiative for the retail payment system providers. For interoperability to happen, standardisation is a pre-requisite. Convergence of any payment instrument into the mainstream acceptance infrastructure is the need of the hour. In India, the Prepaid Payment Instrument (PPI), popularly known as '*e-money*', is also issued by non-banks and accepted on their own infrastructure. If these instruments have to be accepted on the existing POS infrastructure, it presupposes adherence to internationally accepted standards of form factor and connectivity. Is the industry geared up for this? Significant changes will, therefore, be required in the technology and business model of non-bank PPI issuers.

Thinking of financial inclusion while innovating a retail payment system

23. We are all aware that financial inclusion has served as an important driving force for innovations in many countries either under a government mandate or because of the new business opportunities opened up by an untapped market. But how many companies are betting on innovation beyond the Return on Investment (ROI) concept, given the fact that the bottom of the pyramid is very sensitive to costs? Moving away from the single economic ROI to an integrated economic, social and environmental approach would bring in the desired results of financial inclusiveness.

Non-banks in retail payments – need for a status

24. The role of non-banks in retail payments has increased significantly, owing in part to the growing

[1] The Payment Card Industry Data Security Standard (PCI DSS) is a proprietary information security standard for organisations that handle cardholder information for the major debit, credit, prepaid cards *etc.*

use of innovative technology that allows non-banks to compete in areas not yet dominated by banks. The Working Group on Non-banks in Retail Payments firmed under the aegis of CPSS is also attempting to understand the challenges and the advantages of non-banks in the payments space. The increased role of non-bank entities in payment system is linked to their potential to change the payment system landscape as they can leverage on their product offerings with latest technological features to cater to wide segment of the market.

Regulators' effectiveness as catalysts, overseers and/or operators of payment systems

25. As regulators, you will agree that the most defining moment is to be effective as a catalyst without compromising on the regulatory concerns. It is like a parent having to know when to be a friend of the child and when to be a parent. Monitoring and assessment of innovative retail payments by central banks calls for engaging appropriate skill-sets regularly updating with technological developments and having a machinery to gauge the need and efficacy of such a retail payment system for the country. The impact of innovations on cash and monetary policy may be required to be analysed in the long run once the volumes pick up.

Retail Payment Systems - KYC constraint

26. Although, we always propagate that availability and accessibility of a payment product/process is the key factor to be considered for financial inclusion the fact remains that these customers have to pass the test of proving identity. Innovating a retail payment system keeping the biometric identity in mind is the need of the hour. But that calls for nationwide initiative. In India, however, integrating the Aadhaar (biometric) with payment systems has started happening with the regulator supporting its acceptance as a valid KYC proof.

Concluding thoughts

27. I hope all of you have had two days of fruitful discussions and debate. I also hope you had a pleasant stay in India. I know the best is yet to come when you will be taken to the country's historically most important infrastructure, the Taj Mahal, tomorrow. Wish you have a great time exploring India and that you will all return academically and culturally richer back to your respective countries. Wish you all the best.