H R Khan: Managing currency and interest rate risks – new challenges for banks & corporates

Session keynote address by Shri H R Khan, Deputy Governor of the Reserve Bank of India, at the 2nd FT-Yes Bank International Banking Summit, Mumbai, 16 October 2012.

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It is a pleasure to be here at the 2nd FT-Yes Bank International Banking Summit amidst a very distinguished set of panellists and audience. I must compliment the organisers for selecting a very wide range of subjects – subjects which are as varied as they are topical in the world as we live in today – for discussions. The subject for this session "Managing currency and interest rate risks – new challenges for banks and corporations" is very relevant in the post crisis world of elevated financial market volatility. Managing market risk has always been at the core of the risk management function of banks and, increasingly, of corporates. As the subject of the discussion appropriately suggests, the recent global crisis has, indeed, posed "new" challenges for banks and end-users in managing currency and interest rate risks. Such new challenges have emerged due to excessive volatility both in terms of dimension and direction witnessed in almost all classes of financial assets. Since banks and corporates are often required to take decisions that can impact them much later, such a state of excessive volatility makes it difficult for concerned economic agents to make optimal and informed decisions.

Institutions, both financial and non-financial, have endured extreme levels of market volatility in recent years. Long standing correlations across and within asset classes broke down, traditionally held beliefs about the valuation of securities were turned on their heads, currencies and interest rates moved into ranges hitherto not witnessed, and definitely not anticipated. And all of this happened within an environment of significant economic and geopolitical uncertainty amidst slowing growth, posing considerable challenges for banks and corporates alike. Scenarios which had been consigned to the "tail" of normal distributions even in traditional stress testing exercises suddenly became actual scenarios, leaving institutions scrambling for new techniques and paradigms to manage currency and interest rate risks. This has been, as we know, eloquently captured by Nassim Nicholas Taleb in his black swan theory which describes occurrence of highly unexpected events causing high impact.

Prolonged period of systemic risks and heightened volatility

The onset of the global financial crisis in 2007 set the stage for a prolonged period of systemic risks, anxiety and unprecedented levels of volatility in financial markets. It left policy makers grappling for measures – both conventional and unconventional – as they scrambled to deal with bankrupt financial institutions, frozen inter-bank markets, increasingly volatile financial markets, persistently high levels of unemployment and a stagnating real economy. The increased volatility injected an additional element of uncertainty into financial markets and created significant feed-through effects into the real economy. Financial and non-financial companies, faced with the challenges of anticipating costs and pricing their products, adopted a more cautious approach to business planning and their hiring and firing policies.

Going forward the heightened volatility in financial markets is unlikely to moderate soon. Global economic conditions remain fragile. The green-shoots of recovery which had emerged during 2010 have given way to uncertainty about the prospects of global growth in developed and emerging markets alike. Unemployment remains at unsustainably high levels in many advanced economies. Unconventional monetary policy measures have become the norm in the advanced world as one central bank follows another in announcing novel measures to kick start their respective economies. New phrases have entered the dictionary of the central bankers – “Operation Twist”, “Outright Monetary Transactions”, “Funding for Lending” scheme, to name just a few. All of these have resulted in considerable uncertainty about the impact of such measures, the longevity and extent of the measures and the timing and impact of scaling back such measures, as and when they are finally unwound. These uncertainties have inevitably found expression in increased volatility in financial markets.

There is yet to emerge any credible and sustainable solution to the sovereign debt crisis plaguing the Eurozone. There remains continuing uncertainties about the future of the European Monetary Union. Several measures have been taken recently towards resolving the issues facing the Eurozone. These include policy announcements about European banking and fiscal integration, announcements of new rounds of asset purchase programmes, statements from senior policy makers in support of the single currency, etc. These have stabilized markets by reducing probability of tail risks and have bought critical time and elbow room for policy makers.

Nevertheless, critical risks and vulnerabilities remain. A definite strategy to the resolve the Eurozone sovereign crisis remains elusive and policy execution risks are high given the widespread popular discontent about the proposed austerity and other fiscal measures. There are increasing signs of fragmentation along national lines in the euro zone while banks’ balance sheet adjustments and funding difficulties are only adding to the credit constraints being posed by trends in deleveraging as banks strive to attain higher levels of capitalization. Downside risks to global growth are non-trivial and further uncertainties are being posed by political developments in the US including the looming “fiscal cliff”. All or any of these issues have the potential to trigger considerable market instability.

The uncertainties in the advanced economies are finding their way to developing nations through trade, finance, commodity price and confidence channels. Critically, the uncertainties are reflected in the volatility of capital flows to emerging market – a volatility which is reverberating in domestic financial markets. In cases of countries such as ours the uncertainties posed by global headwinds are accentuating domestic macro-economic challenges. Due to increased channel of inter-linkages between the domestic markets and the rest of the world, the domestic markets have not been able to remain isolated from the global developments. Just to drive home the point, let us look at the ratio of its external trade to GDP. In the case of India, the ratio has increased four-fold – from 8 per cent of GDP in 1972 to nearly 40 per cent now. Taking cognisance of the growth of non-trade cross border flows, a more meaningful measure of a country’s global integration can be the ratio of two-way flow of goods and finance in and out of a country to its GDP. In the Indian context, this ratio has increased eight fold over last four decades, from 14 per cent in 1972 to well over 100 per cent now. These statistics clearly reflect the country’s growing trade and financial integration with the rest of the world. While increased integration gives better business opportunities in normal times, during such volatile times, it would also pose challenges for banks and corporates as they seek to manage their risks while continuing to find viable funding sources for their activities both in Indian and abroad and conduct their business in general. Apart from linkages with the global developments, there are several domestic factors which are also important in the context of increasing trend of volatility in domestic financial markets such as widening current account deficit, growth slowdown, growing fiscal deficit, sticky inflation, governance related issues, downward revision in sovereign rating outlook and the threat of a downgrade of the country’s sovereign rating to below investment grade, to name just a few. Government of India has, of course, taken a series of measures to address many of the challenges in the recent weeks.

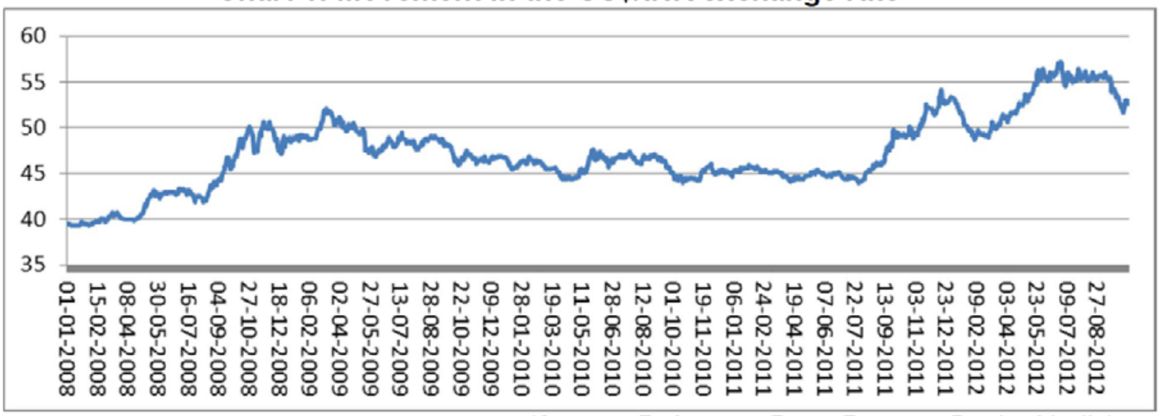
Given very limited role that we can play in influencing the global environment characterized by frequent bouts of risk-on/risk-off sentiments, I would like to touch upon the changing scenario in domestic financial markets and its implications for currency and interest rate risk management. Thereafter, I would briefly touch upon the challenges these developments pose for banks and corporates and what lessons can be learnt.

Currency and interest rate risk in the Indian context

After remaining stable for nearly two years, the Indian Rupee started depreciating very sharply last year immediately after the credit rating of the US was downgraded by the S&P. As compared to an appreciation of 1.1 per cent during 2010–11, the Indian Rupee fell by more than 12 per cent during 2011–12 (Chart 1). The downward pressure on the Indian Rupee was also marked by heightened volatility. A sharp depreciation within a short period of time had a destabilizing impact on the general market sentiment. As may be seen (Chart 2), the Indian Rupee was relatively less volatile till July 2011 but the level of volatility increased significantly thereafter. There was some moderation in volatility after a series of policy measures were announced by Government of India and the Reserve Bank of India during last quarter of 2011. These measures were aimed at augmenting capital flows and imposing certain restrictions on banks and corporates in order to curb speculative uni-directional bets on the Indian Rupee by such entities. Apart from taking policy measures, the Reserve Bank did also intervene to maintain orderliness in the foreign exchange market by curbing excessive volatility and in the process stabilizing the market sentiments.

During the current financial year 2012–13, after depreciating by more than 10 per cent till June 2012, the Indian Rupee started recovering gradually in response to major central banks' decision to go for further policy easing and the announcements of next round of reform measures by the Government. The appreciation is, however, also associated with some degree of volatility.

Chart 1: Movement in the US$/INR exchange rate



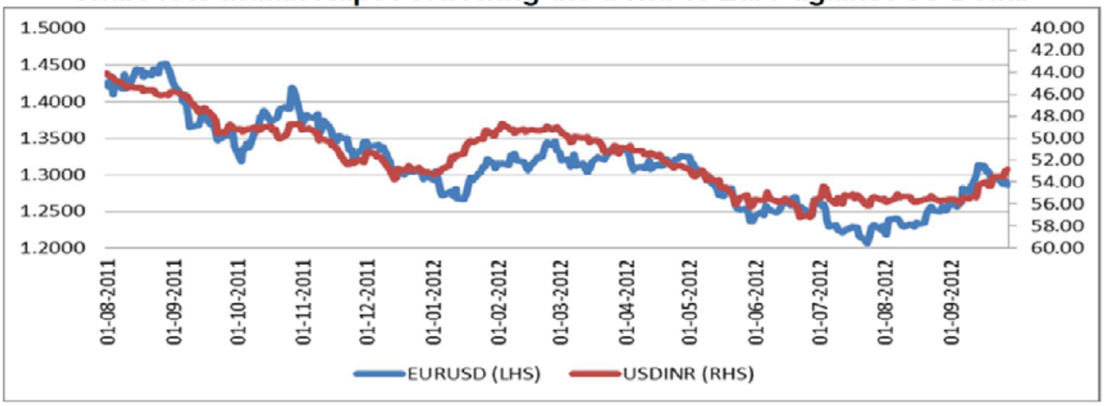
(Source: Reference Rate, Reserve Bank of India)

Chart 2: Volatility in the US$/INR exchange rate

(Source: Reuters)

At the same time, it can be said that the Indian Rupee is not the only currency that has been experiencing increased volatility. There are other BRIC currencies, emerging market currencies and even Euro that have seen such sharp movements. In fact, the movement of the Indian rupee seems to be broadly tracking the fortunes of the Euro against the US dollar – a testimony perhaps to the degree to which global markets are influencing conditions in domestic financial markets (Chart 3).

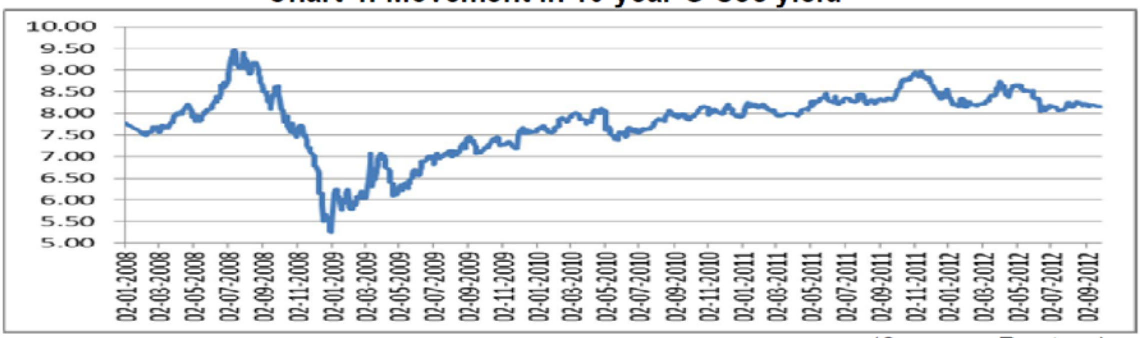
Chart 3: Is Indian Rupee following the trend of Euro against US Dollar



(Source: Bloomberg)

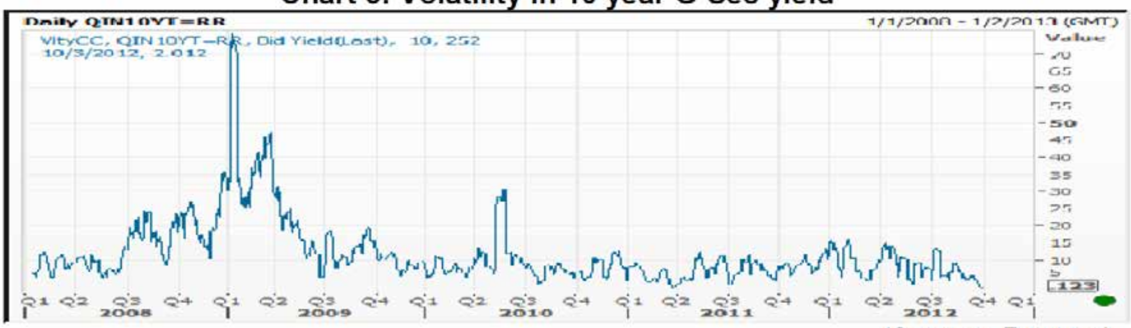
Before I move to the issue of managing the currency risk, let me briefly touch upon another equally critical macro-economic variable-interest rate that also poses risk to banks and corporates alike and needs to be managed. In contrast to the Indian Rupee movement, the movement in domestic interest rates (as represented by the generic 10-year yield of bonds issued by Government of India) has been range bound (Chart 4) with reduced volatility in recent months as compared to the past (Chart 5).

Chart 4: Movement in 10 year G-Sec yield



(Source : Reuters)

Chart 5: Volatility in 10 year G-Sec yield



(Source: Reuters)

The trends in interest rate movements have been influenced by a host of factors, such as, policy actions on the rate front and open market operations conducted by the Reserve Bank, upward revision in FII investment limits in Government securities, broadening of investor base for investment in Government securities, persistence of inflationary pressure, etc.

Measures taken by the Reserve Bank

As stated earlier, in the face of increasing volatility in the financial markets and a significant depreciation of the domestic currency, a host of measures have been taken by the Reserve Bank and the Government of India since the beginning of last quarter of 2011. These include, *inter alia, the following*:

I Limits on investment in debt securities comprising government securities and corporate bonds by foreign institutional investors were enhanced;

ii. Interest rates on rupee denominated non-resident deposits were deregulated while rates foreign currency denominated deposits increased;

iii. The all-in-cost ceiling for External Commercial Borrowings (ECBs) was rationalized;

iv. Following administrative measures aimed at discouraging speculative activities were initiated:

  a. Reduction in limits for booking forward contracts under past performance route and only on fully deliverable basis;

  b. Forward contracts once cancelled cannot be rebooked;

  c. Net Overnight Open Position Limits (NOOPL) of the Authorized Dealer (AD) banks were reduced across the board; and

  d. AD banks were advised that their intra-day open position/daylight limit should not exceed the existing NOOPL approved by the Reserve Bank;

v. Interest rate on export credit in foreign currency was deregulated;

vi. Foreign exchange earners were asked to convert 50 per cent balances in their Exchange Earners Foreign Currency (EEFC) accounts with AD banks into rupee balances and credited to the rupee accounts. Subsequently, the erstwhile stipulation of allowing credit of 100 per cent foreign exchange earnings was restored subject to certain conditions, such as, the total of the accruals in the account during a calendar month should be converted into Indian Rupees on or before the last day of the succeeding calendar month after adjusting for utilization of the balances for approved purposes or forward commitments;

vii. Positions taken by banks in currency futures/options cannot be offset by undertaking positions in OTC market, and the NOOPL of the banks as applicable to the positions involving the Indian Rupee as one of the currencies will not include positions taken by banks on the exchanges.

Much has been said and discussed about the impact of the policy measures. There has been some criticism within the financial and commercial circles that the policy initiatives have been a step backwards and that they have introduced rigidities in the domestic foreign exchange market and constrained the ability of banks and corporates to hedge their risks. I do not intend to go into the details of the *raison d'être* for each of these measures but would rather confine myself to a few general remarks in this regard. The Reserve Bank undertook the administrative measures to curb the speculative trends. These measures arose from a set of practices and behavioural traits which had emerged in domestic financial markets and aggravated the pressures on domestic financial markets. To name just a few: corporates often leave their foreign exchange exposures unhedged to benefit from the movement of the currency in their favour and save the cost of hedging rather than concentrating on their core business to generate profits. Derivatives are often used as instruments for generation of profit rather than as instruments for risk mitigation. Import exposures were typically left unhedged or the hedge ratio was very small. The past performance facility was made available to corporates to enable them to plan their foreign currency exposures. Without a delivery mandate, the facility was instead used to speculate on currency movements.

It needs to be appreciated that none of the measures which have been taken in the recent months have in any way restricted or constrained the abilities of corporates to manage their genuine foreign exchange exposures. All that has been done is curbing the scope available for taking speculative bets on the Rupee that resulted in enhanced volatility. Within the overarching prerequisite of facilitating genuine hedging needs of the customers, Reserve Bank would consider further relaxations in a calibrated manner. Infact Reserve Bank has already relaxed some of the measures in July 2012 so that the genuine hedging requirements of the real sector are not affected. Exporters have now been allowed to cancel and rebook forward contracts to the extent of 25 percent of the contracts booked in a financial year for hedging their contracted export exposures. Similarly, AD Category I banks have been permitted to exclude their Net Options Position and the positions taken by the overseas branches from their NOOPL, for positions involving the Indian Rupee as one of the currencies.

Managing currency and interest rate risks

The events during the crises have compelled banks and corporates to start taking a broader, more sophisticated approach to analyzing their risk exposures. These events have forced banks and corporates to go back to the first principles of risk management and that is of identifying risks, measuring them and managing them. Prior to the crisis, a prolonged period of stable financial markets, incentivized banks and corporates alike to take on more and more risks on their balance sheets. A one way trend in currency rates prompted corporates to leave their foreign exchange exposures to generate profits if the currency moved favourably. Low and stable interest rates acted as incentives for increasing leverage. When financial markets turned volatile, the currency started depreciating and the funding markets started drying abroad, many of these corporates were left vulnerable. Not surprisingly a recent analysis reveals that the major reasons for cases being referred to the CDR cell in the last few years were high leverage or huge open foreign exchange positions of companies.

The experiences during the crises, therefore, entail many important lessons for managing currency and interest rate risks. First, the experiences have reemphasized the importance of corporates focussing on their core businesses and not looking at currency mismatches to generate extra profit. Second, the recent experiences have also highlighted the risks associated with un-hedged exposures. The third set of lessons relate to the careful selection of hedging instruments. Many corporates, large and small, burnt their fingers dabbling in complex derivative products. Many leant, the hard way, that there are no free lunches and that “zero cost structures” and “unlimited payoffs” are but figments of fertile imagination. Fourth, is the importance of stress testing or, at least, of anticipating and preparing for potential worst case scenarios. For many corporates, the last few years of slower growth and trade, would arguably have been easier to handle, had they focussed on proper management of currency and interest rate risks. Fifth, the risks associated with excessive leverage have very clearly been brought out by the crisis. The recent experiences have, thus, under-scored the age old lesson of the downside of excessive “greed”.

On its part, the Reserve Bank has continuously been making efforts in sensitising the banks and the end-users for judicious use of available derivative products in India in managing both currency as well as interest rate risk. While there is a comprehensive regulatory frame work put in place for OTC derivatives products to hedge currency risk, such as forwards, swaps, options, etc. exchange traded currency futures and options have also been permitted in order to provide the benefit of transparent pricing and better risk management.

Long-term forex derivatives

The forward market in India is pretty liquid up to one year. The liquidity in forward market for tenor beyond one year, however, is unsatisfactory and poses difficulties for market participants who want to hedge a long term forex exposure. Mostly they deal with the problem by booking contracts up to one year and then roll it over till the maturity of the exposure. This strategy partially addresses their long term risk, reducing exchange rate risk to the risk of a less volatile forward premium. While there has been no regulatory restriction put on bookings of longterm forwards as such, there is asymmetry in this segment in the sense that it is dominated by demand on the buy side. Further, the illiquidity also owes to the absence of a Rupee (term) interest rate swap market, and this makes it difficult for the market makers to price a long term forward contract.

MTM of the forex derivatives

Another related issue in this context that I would briefly like to touch upon is marked to market (MTM) on outstanding forex derivative contracts and the reluctance on part of some of the corporates on entering into such contracts for fear of MTM losses, should the price of the underlying variable move in other direction. It needs to be emphasized that the MTM is a dynamic concept representing the fair value of the contracts taking into account the market movements and essentially represents the replacement cost of the derivative contracts. These accounting losses should, therefore, be looked at in totality along with the economic rationale of the hedges undertaken. While we have had a series of informal dialogues with industry representatives, banks, auditors and even some corporates on the issue for a better understanding, there seems to be no unanimity as far as the applicability of the existing accounting guidelines are there. Generally speaking, a corporate entering into a derivative contract as a perfect hedge should be indifferent to the price movements during the period of the contract as any MTM loss in the derivative contract should be near equal to the MTM gains in the underlying. If, however, different accounting norms are followed for both the hedged item as well as the hedging instrument, there could be a possibility of timing mismatch in the profit and loss statement resulting into undue volatility in the bottom line of the corporates. I understand that companies that prepare financial statements under Indian Generally Accepted Accounting Principles (GAAP) or International Financial Reporting Standards (IFRS) have the option to apply “hedge accounting” principles to these transactions in order to minimize volatility in the profit or loss statement and reflect the risk management objective of these arrangements. It is necessary that industry representative bodies, such as, Foreign Exchange Dealers’ Association of India (FEDAI) and the Institute of Chartered Accountants of India (ICAI) discuss the issues involved and come out with some clarity on the issue for the larger benefit of all the stakeholders.

Limited appetite for risk mitigation products

For mitigating foreign exchange exposure risks of Indian corporates/importers, facilities of onshore hedging of the Indian Rupee exposure of the non-resident buyers/sellers have been introduced. There has been hardly any interest to promote this facility among the non-resident business associates. As far as managing interest risk is concerned, interest rate swaps (IRS), forward rate agreements (FRAs) are permitted derivative products in the OTC market. The IRS market has evolved over the past decade and is fairly liquid though activity is concentrated at few tenor points (mostly up to five years) and among few participants (foreign banks and a few private sector and foreign banks account for more than 80 per cent of trading activity). One of the issues with the IRS market in India is that trades are mostly concentrated on overnight MIBOR as benchmark in absence of a liquid term money market. In order to offer alternative hedging tool to the market participants, exchange traded interest rate futures (IRF) on 10 year notional GoI coupon bond and 91-day T-bills were also introduced. After witnessing good amount of trading activity during initial few months immediately after the launch, the trading activity has reduced considerably. Reserve Bank has also permitted introduction of IRF contracts on two and five year Government Securities on cash settlement basis to provide the products at the shorter end which would offer flexible hedging options to the market participants. These products, however, are yet to be introduced by the exchanges. There have been various reasons put forward by market participants for IRF not being used by them. Recently, the Reserve Bank constituted Working Group on “Enhancing Liquidity in Government Securities and Interest Rate Derivatives markets” (Chairman: Shri R. Gandhi). The Group has made several recommendations for improving liquidity in both the IRS and IRF market, such as, electronic trading platform for the IRS market, central counter party (CCP) mechanism for providing guaranteed settlement of trades executed through the electronic platform, standardisation of the IRS contracts, permitting insurance companies, pension funds and other financially sound entities to participate in IRS market, IRF based on overnight call borrowing rate; permitting cash-settled 10 year IRF, etc. Reserve Bank has also permitted single-name credit default swaps (CDS) in India for hedging credit risk separately. Since the launch of the product, however, only few trades have been executed. Various reasons have been attributed for the lack of trading interest in CDS in India. One of them is that banks are yet to put in place internal policies for trading in CDS. Though International Swap and Derivatives Association (ISDA) master agreements have been finalised by the Fixed Income Money Market and Derivatives Association of India (FIMMDA), participants have to enter into bilateral ISDA agreements for transacting in CDS. When insurance companies and mutual funds, which are likely to be permitted by their respective regulators soon, start participating in the CDS market, one hopes the volumes will pick-up.

Risk of long-term floating rate loans to individuals

It has been observed that a major chunk of the loan portfolio of banks these days comprises floating rate products, especially in the retail segment, with loans for housing sector extending up to 20 years or so. On the other hand the interest rate paid by them on deposits is predominantly fixed and these deposits generally are of upto a maximum of five year maturity. This obviously can result in serious asset liability mismatch in their balance sheets apart from subjecting the unsophisticated borrower to interest rate risk over a longer horizon. While there are options available to banks to manage this mismatch through raising of long term resources via bonds, securitization of assets, hedging of interest rate risk using derivative products, etc. the retail borrowers are not well-equipped to use any hedging instrument to hedge the interest rate risk. There have been some suggestions, such as, allowing banks to issue more long-term bonds, treating banks’ exposure to fix-rate long-term housing loans eligible for priority sector, and encouraging large institutional investors like pension funds, provident funds, insurance companies, etc. to invest in bonds floated by bank so that long-term fixed rate loans can be extended to the retail borrowers. In order to assess the feasibility of introducing more long-term fixed interest rate loan products, particularly for the retail customers by banks, the Reserve Bank has set up a Committee (Chairman: K. K. Vohra) that is expected to submit its report shortly.

Management of interest rate and currency risks by banks

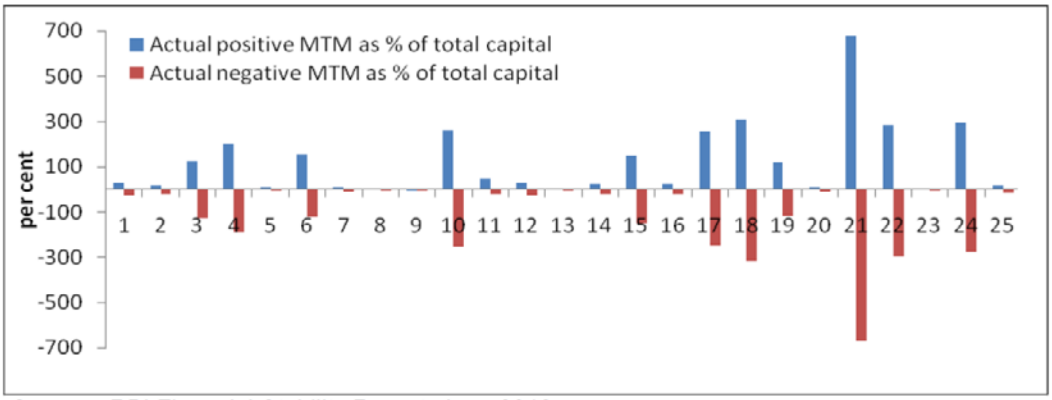
Let me now turn to the challenges for banks for management of currency and interest rate risks. Banks are essentially in the business of managing risks. In particular, they are required to handle interest rate mismatches as well as currency mismatches in their capacity as authorized dealers and market-makers in the currency market. The events of the last few years have proved that banks, even in their own interest, have to take on at least some of the onus of risk management of their clients. The Reserve Bank has also assigned responsibility on banks for ensuring suitability and appropriateness while transacting derivative instruments with the corporates and also ensuring that the corporates have appropriate risk management framework. More specifically, before offering any derivative product to clients, banks should obtain Board resolution from the corporates which should explicitly mention, *inter alia*, (i) the limit assigned by the corporate to the bank, (ii) the names and designation of the officials of the company authorised to undertake particular derivative transactions on behalf of the company (iii) specific products that can be transacted by such designated officials, etc. Keeping in view the implications of excessive risks taking by the corporates and impact of consequential risks on their balance sheets and the financial system, banks have also been advised to evaluate the risks arising out of unhedged foreign currency exposure of the corporates and price them in the credit risk premium while extending fund based and non-fund based credit facilities to them. Banks have also been advised to consider stipulating a limit on unhedged position of corporates on the basis of policy approved by the Board of the banks. Absence of proper oversight over corporate's business particularly their currency and interest rate risks has come to the fore now when we have witnessed a number of cases of corporates seeking restructuring/CDR, many of whom have got into difficulties due to foreign exchange related losses and excessive leverage, restructuring/defaults of overseas ECB/Foreign Currency Convertible Bonds (FCCB) obligations, loss to the overseas branches of Indian banks who have subscribed Credit Linked Notes (CLNs) under the FCCB issues. This does not, in any way, take away the primary responsibility of the corporates towards their own risk management system but the joint effort can go a long way towards preventing the kind of legal disputes which arose in the recent past.

Banks enter into derivative contracts for the purpose of hedging their own risks. They also play an important role as market makers in the derivatives markets to enable their customers to hedge their risks. Client trades are typically covered on a back-to-back basis by banks in the inter-bank market, implying that the banks are hedged as far as market risks on client related transactions are concerned but they continue to hold on to the credit risks arising from the exposure to their clients. Banks also typically maintain "open" positions as part of their trading book of their derivative portfolio and these positions engender market risks for the banks. The management of both risks is critical for banks, especially in the current environment of increased uncertainties and market volatility.

Banks also carry a significant amount of interest rate risk in their investment portfolio due to holding of the Statutory Liquidity Ratio (SLR) bonds and non-SLR securities. Managing risks in the investment portfolio, thus, acquires additional significance in an environment of increased volatility of interest rates notwithstanding the HTM dispensation available to banks up to certain limits. Typically, banks have been using a combination of duration targets and duration gap analysis for managing risks arising out of movements in interest rates. A series of stress tests are being conducted periodically by the Reserve Bank on the impact of interest rate shocks on the banking and trading books of banks. The results have been presented in the Financial Stability Reports (FSR) published by the Reserve Bank of India. They suggest that while banks are largely resilient to the shocks involving both parallel and non-parallel shifts in the yield curve, there are a few banks which are significantly impacted. Hence, there remains a need for banks to be vigilant in managing risks on this front.

As reported in our FSR, the empirical analysis of the portfolio of select banks conducted in the Reserve Bank a few months back revealed that banks were carrying a significant quantum of risks in their portfolios on a gross basis though on a net basis the positions were relatively matched (Chart 6). The chart shows that gross positive MTM position of the derivative portfolio of some banks is significant in relation to their capital funds. In some cases, the gross positive MTM is several multiples of their capital funds. This clearly suggests that banks remained exposed to and, would need to manage the risks of counterparty failures. A series of scenario and sensitivity stress tests were also conducted on the derivative portfolios of banks as part of the above exercise. The sensitivity analysis involved the application of a series of interest rate and exchange rate shocks to the derivatives portfolio of banks. The scenario analysis was based on a set of historical scenarios of heightened volatility. The stress test results showed that, for some banks, the impact of the stress scenarios are very significant even though for most banks the impact was manageable.

Chart 6: Positive and Negative MTM of SCBs as a ratio of respective capital funds



Source: RBI Financial Stability Report, June 2012

In summing up, I would like to mention that from all indications, the uncertainty and volatility associated with the financial markets are here to stay, at least for the foreseeable future, as the "new normal" when the world grapples the lingering impact of the global financial crises and the sovereign debt crisis, a prolonged period of low or zero interest rates leading to potential mispricing of risks and high volatility in oil and commodity prices, tail-risk of geopolitical events besides domestic macro-economic developments. Managing currency and interest rate risks is, therefore, going to be a major challenge for the corporates and the banks, particularly in an emerging and developing economy like India where future development of the market is critically linked to avoiding systemic risks and shocks as we move forward. Before I conclude, I would like to flag some of the related issues for the panel and other distinguished participants to discuss.

a. Are there any models/methods available to mitigate the impact of global headwinds without sacrificing the gains of globalization?

b. Given the breakdown of traditional correlations among asset classes, assumptions about valuations, enhanced uncertainty and heightened volatility, are the risk management systems of the corporates and the banks evolving in sync with the emerging challenges?

c. Specifically for banks in India, have they really internalized the need and necessity of monitoring and reviewing the risk management strategies of their clients? Have the banks put in place the required systems and processes to Know the Business of their Customers (KBC), risks they carry on their balance sheet?

d. Are the corporates really constrained for hedging due to accounting issues? Can industry associations, banks and accountants develop a common understanding on this?

e. Are their staff, management and Board sufficiently sensitive to the risk management related issues? What is constraining the market-makers in using the risk mitigation products e.g. IRF, CDS, etc., which were introduced with a lot consultation with the market-participants?

f. Given the preponderance of investment portfolio in the balance sheet of banks, are they sufficiently sensitive to interest rate risks? Are banks cognizant of the need to actively manage the interest rate risks in their derivative portfolio? With a portfolio hedged against market risks is there adequate recognition of embedded counterparty risk?

Thank you.