Report of the Internal Technical Group on Forex Markets

Contents

1. Chapter 1: Introduction

2. Chapter 2:Perspective on the Indian Forex Market &
   Cross-country Experiences in Development
   of Foreign Exchange Markets

3. Chapter 3: Suggestions made by market participants
   for further liberalisation,
   along with their implications

4. Chapter 4: Summary of Recommendations for
   Implementation in the short-term

5. Annex I: Perspective on the Indian Forex Market

6. Annex II: Cross-country Experiences in
   Development of Foreign Exchange Markets

7. Bibliography

Chapter 1

Introduction

1.1 The 1990s marked significant changes in the currency regime in India and in the development of the foreign exchange market. The exchange rate of the rupee, which was pegged to an undisclosed basket of currencies, was partially floated in March, 1992 and fully in March, 1993. The unification of the exchange rate was instrumental in developing a market-determined exchange rate of the rupee, based on demand and supply in the forex market. It was also an important step in the progress towards current account convertibility, which was achieved in August, 1994 when India accepted obligations under Article VIII of IMF's Articles of Agreement. A further impetus was provided in the form of the appointment of an Expert Group on Foreign Exchange Markets in India which submitted its report on June 27, 1995. The Sodhani Committee, as it has been popularly known, made recommendations which had far reaching consequences for the development in general, and deepening & widening, in particular, of the Indian forex market. Almost a decade has passed since then, and it was felt that it would be appropriate to take stock of the developments which have occurred, and to chart out the path for the future.

Accordingly, as a part of the continuing efforts aimed at liberalising and developing the forex market in India, Governor appointed an Internal Technical Group on Forex Markets to undertake a comprehensive review of measures initiated by Reserve Bank so far and identify areas for further liberalization /relaxation of restrictions along with a medium-term framework in relation to issues regarding capital account liberalisation. The members of the Group were drawn from DEIO, IDMD, FED, DBOD and DEAP.

Terms of Reference

1.2 The broad terms of reference of the Group were as follows:-

i) To undertake a review of the market developments and liberalisation process since 1995 in terms of products/participants and its impact on market dynamics

ii) To study the international experience in respect of market liberalisation in certain major emerging market countries

iii) To examine the regulatory regime in respect of the forex market at present and evaluate it in the current and evolving circumstances while keeping in view the progress in liberalisation in related sectors, and

iv) To identify various options for further liberalisation along with their implications and indicate a possible approach

v) Any other issue of relevance

Approach of the Group

1.3 The Group noted that the existence of a functioning market in spot and forward contracts for a long time coupled with the availability of professional skills and expertise were major factors which enabled India to introduce liberalisation measures easily.

The Group took a stock of the overall macro economic environment to formulate an optimal approach towards forex market and capital account liberalisation. It noted that although the external sector is fundamentally stronger and more resilient than ever before, fiscal deficit and high external debt are still concerns. The Group also took into account the pre- conditions laid down by the Tarapore Committee on Capital account convertibility while finalizing its recommendations.

Further, in order to embark upon further deregulation of the foreign exchange market, including relaxation of capital controls, an enabling environment is needed for the reforms to proceed on a sustainable basis. It is in this context that liberalisation of various sectors has to proceed in tandem to derive synergies of the reforms encompassing multiple sectors.

In view of the above and also taking into account the risks associated with internationalisation of the rupee, the Group concluded that a gradual and need-based approach would be more suited to the prevailing condition.

The Group had the benefit of presentations by select market participants and experts like Citibank, ICICI Bank, State Bank of India, IDBI Bank, Standard Chartered Bank, YES Bank, a joint presentation by Canara Bank and Bank of India, Foreign Exchange Dealers' Association of India, Vedanta Group, Hindustan Petroleum Corporation Limited and Shri A.V. Rajwade on relevant areas. The international experience in respect of market liberalisation in certain major emerging market countries such as Brazil, Russia, the Philippines, Thailand and Mexico were also studied.

Structure of the report

1.4 The organisation of the report is as follows: The main report consists of four chapters – while Chapter 1 deals with the Introduction, Chapter 2 provides an overview of the Indian forex market, reflects on the enabling environment for reforms in the forex market as well as gives a glimpse of cross-country experiences in development of forex markets. Chapter 3 enumerates the suggestions made by market participants for further liberalisation, along with their implications, while Chapter 4 lists out the summary of recommendations for implementation in the short-term. Annex I presents a perspective on the Indian Forex Market. Cross-country experiences in development of foreign exchange markets are summarised in Annex II.

Acknowledgement

1.5 The Secretariat for the Group was provided by the Foreign Exchange Department (Forex Markets Division). The Group wishes to record its appreciation for the unstinted assistance provided by all the officials of the Forex Markets Division, Foreign Exchange Department. Invaluable contributions were also received from HSBC, JP Morgan and Deutsche Bank, which is gratefully acknowledged. Finally, the report owes itself to the presentations which were made by the market participants and experts mentioned earlier. Their presentations contributed in a major way to the finalisation of the report. The Group would like to thank them for their efforts.

Chapter 2

Perspective on the Indian Forex Market & Cross-country Experiences in Development of Foreign Exchange Markets

2.1 This chapter provides an overview of the Indian forex market, reflects on the enabling environment for reforms in the forex market as well as gives a glimpse of cross-country experiences in development of forex markets. A detailed write-up on these areas is provided in Annex I and II, respectively.

Perspective on the Indian forex market

2.2 The Indian forex market is made up of banks authorised to deal in foreign exchange, known as Authorised Dealers (ADs), foreign exchange brokers, money changers and customers - both resident and non-resident, who are exposed to currency risk. It is predominantly a transaction-based market with the existence of underlying forex exposure generally being an essential requirement for market users.

2.3 The Indian forex market has grown manifold over the last several years. Average daily total turnover has increased from US$3.67 billion in 1996-97 to US$9.71 billion in 2003-04. The normal spot market quote has a spread of 0.50 to 1 paise while swap quotes are available at 1 to 2 paise spread. The derivatives market activity has shown tremendous growth as well, especially after the MIFOR (Mumbai Inter-bank Forward Offered Rate) swap curve evolved in 2000.

2.4 Many policy initiatives have been taken to develop the forex market. ADs have been permitted to have larger open position and aggregate gap limits, linked to their capital. They have been given permission to borrow overseas up to 25 per cent of their Tier-I capital and invest up to limits approved by their respective Boards. Cash reserve requirements have been exempted on inter-bank borrowings.

2.5 Exporters and importers are, in general, permitted to freely cancel and rebook forward contracts booked in respect of their foreign currency exposures, except in respect of forward contracts booked to cover import and non-trade payments falling due beyond one year. They have also been permitted to book forward contracts on the basis of past performance (without production of underlying documents evidencing transactions at the time of booking the contract). Corporates have been permitted increasing access to foreign currency funds. General

permission has been given to ADs for approving External Commercial Borrowings of their customers up to a limit of US $ 500 million; appropriate restrictions have been placed on the end-use of such funds. While exchange earners in select categories such as Export Oriented Units (EOU) are permitted to retain 100 per cent of their export earnings, others are permitted to retain 50 per cent of their forex receipts in EEFC accounts. Residents may also enter into forward contracts with ADs in respect of transactions denominated in foreign currency but settled in Indian rupee. They can hedge the exchange risk arising out of overseas direct investments in equity and loan. Residents engaged in export/import trade, are permitted to hedge the attendant commodity price risk in international commodity exchanges/ markets using exchange traded as well as OTC contracts.

2.6 Non-residents are permitted to hedge the currency risk arising on account of their investments in India. However, once cancelled, these contracts cannot be rebooked for the same exposure.

Enabling Environment for Reforms in the Forex Market:

2.7 In order to embark upon further deregulation of the foreign exchange market, including relaxation of capital controls, an enabling environment is needed for the reforms to proceed on a sustainable basis. It is in this context that liberalisation of various sectors has to proceed in tandem to derive synergies of the reforms encompassing multiple sectors.

2.8 Sound macroeconomic policies and a competitive domestic sector improve the capacity of the economy to absorb higher capital inflows and provide cushion against unexpected shocks. Some of the parameters recommended by the Tarapore Committee on Capital Account Convertibility such as reduction in the combined fiscal deficit, inflation between 3 and 5 percent and further reduction in the gross NPAs of the banking sector are required to be achieved for creating an enabling environment for further liberalization in the forex markets.

Cross-country Experiences in Development of Forex Markets

2.9 The decade of the 1990s was characterised by remarkable developments in emerging market economies (EMEs) towards shift to a flexible exchange rate regime, opening up of capital account and integration of their domestic financial markets with the global system. This was a reflection of conscious efforts in this direction either as an integral part of the overall process of liberalisation or was prompted by an adjustment mechanism initiated in the wake of financial crises. A perceptible policy shift has been noticed towards reorientation of their financial markets in terms of availability of a wide range of new products and instruments, development of institutional and market infrastructure and realignment of regulatory structure consistent with liberalised operational framework. The changing contours of the foreign exchange markets are mirrored in a rapid expansion in terms of participants, innovation in products, rising transaction volumes and reduction in transaction costs and more efficient mechanism of risk transfer. The process of foreign exchange market liberalisation generally speeds up with increasing move towards capital account liberalisation. This gets manifested in a more liberal approach towards restrictions on investment flows. However, regulators prefer to tread carefully in providing freedom to market players in the use of risk management instruments, particularly derivatives.

2.10 Aided by technological breakthroughs, rapid growth in investment funds and commodity trading, daily trading volume in foreign exchange markets at the global level more than doubled to US $ 2,408 billion in 2004 from US $ 1,076 billion in 1992. It is estimated that less than one-fifth of all foreign exchange transactions is directly related to the needs of importers and exporters while the remaining involve financial flows related to investments and profit-seeking transactions. Adjusted for local and cross-border double counting, the global foreign exchange market turnover increased from a daily average of US $ 1,200 billion in 2001 to US $ 1,880 billion in 2004.

2.11 Country experiences indicate that a move to a flexible exchange rate regime necessitates, as also facilitates, the development of foreign exchange markets. A number of EMEs have adopted either managed floating or independently floating exchange rate regimes. Despite a rise in turnover that has been associated

with an increasing exchange rate flexibility and greater forex market development, EMEs are still insignificant in terms of their share in global foreign exchange turnover and also in the derivatives segment of the forex market. They still retain a number of foreign exchange regulations and are yet to have their currencies convertible on the capital account. The markets for underlying assets/instruments themselves leave scope for development. These factors limit the size of their market turnover.

2.12 Exchange rate flexibility exposes market participants to risks arising as a result of exchange rate fluctuations. Market risk assumes significance in globally integrated foreign exchange markets, encouraging market participants to use risk management instruments. Availability of these instruments as also the freedom to use these instruments depends on the existing exchange control/regulation environment in a country. The operational environment is relatively more flexible in countries with current account convertibility and open capital accounts. Exchange rate regimes do influence the regulatory framework when it comes to the issue of providing operational freedom to market participants in respect of their foreign exchange market operations. While the use of risk management instruments is encouraged by EMEs for hedging genuine exposure linked to real and financial flows, their overall approach towards risk management has remained cautious with a clear emphasis on the need to safeguard against potential financial instability that could arise due to excessive speculation in the foreign exchange market even when macro-economic fundamentals are reasonably good. This has been seen even in those countries where the use of hedging instruments is not linked to the ‘real demand principle’.

2.13 Country practices in respect of permission given to banks to engage in local currency/foreign currency derivative transactions with non-residents reveal a move towards relative freedom with some restrictions. Flexibility is also allowed in establishment and lifting of hedges in several countries. Non-deliverable forwards onshore are restricted in many countries. Regulations on FX transactions for individuals and companies are generally eased before relaxing them for other market participants.

2.14 Notwithstanding the fact that prudential regulations are considered an integral part of the overall risk management strategy, country practices differ widely in this regard. An important prudential measure is the fixation of open position/aggregate gap limits of banks. This stipulation also varies from country to country besides the fact that these limits do not attract capital requirement in several countries. The prudential safeguards also get manifested in the form of restrictions on capital account transactions of various types including borrowings of non-residents in the local currency market, foreign currency deposit holdings of domestic residents/local currency deposit holding of non-residents, etc.

2.15 Several countries allow producers and manufacturers to hedge their commodity exposure on international commodity exchanges regardless of the fact that a number of them also have local commodity exchanges. In general, access to international commodity exchanges is only for the purpose of hedging. Restrictions on speculation are in place in some countries such as Australia, South Africa, China and Japan.

2.16 An important lesson is that much like the misuse of derivatives, which leads to an assumption of leveraged risk, systemic threat can be posed if foreign currencies denominated liabilities are left unhedged. The operational freedom in use of risk management instruments has to go along with a proper internal risk control mechanism and efficient prudential and supervisory systems. Of late, there has been a great degree of emphasis on internal risk management systems and the need to have a well-defined risk management policy and appropriate safeguards to ensure that the accepted policy is implemented in true spirit. Supervisors have to be ready with their information/monitoring, regulatory and supervisory systems to ensure that market participants observe the prudential risk management norms and avoid excessive risk taking.

Chapter 3

Suggestions made by market participants for further liberalisation, along with their implications.

3.1. During the decade that has elapsed since the Report of the Expert Group on Foreign Exchange Markets in India, the forex market has grown and matured significantly. Due to volatility in exchange rates and interest rates, a need for greater freedom to hedge exposures dynamically has been expressed. With gradual integration of the Indian economy with the world economy and lowering of custom tariffs, the need to hedge price risk on domestically procured commodities has grown. A demand has emerged to afford the same flexibility to our corporates as is available to their competitors overseas in order for them to compete effectively in the global arena. The various suggestions received and the views of the Group in regard thereto are discussed in the following paragraphs.

At the same time, the Group strongly advocated the necessity of having an enabling environment in place for further reforms in the forex market. In this context, a reference is drawn to para I.42 of Annex I, which deals with the matter at length. The Group felt that the sequencing with regard to implementation of all reforms recommended for implementation would have to invariably take into account the enabling conditions for further progress towards capital account convertibility, liberalisation in other sectors of the economy as well as the trend in overall balance of payments.

Suggestions relating to flexibility to corporates to dynamically hedge their exposures

3.2. Forward Contracts

All forward contracts booked by residents in respect of their foreign currency exposures falling due within one year are permitted to be cancelled and rebooked freely, subject to submission of details of import and non-trade payment exposures by the constituents to their Authorised Dealers (ADs) on an annual basis. Export contracts with tenor greater than one year are also permitted to be freely cancelled and rebooked. To provide greater flexibility to residents in dynamically managing

their exposures, to further the development of the forward segment of the market and to bring about uniformity with respect to booking of such contracts, it is recommended that all forward contracts as also currency swaps booked to hedge an underlying foreign currency exposure **booked by residents**, regardless of tenor, may be allowed to be cancelled and rebooked freely.

3.3. Hedging of derived exposures

A derived foreign currency exposure arises in the Indian market when a customer who has a rupee exposure converts it into a foreign currency exposure through a rupee-foreign currency swap. Thus, for instance, if a customer swaps from a fixed rupee liability into a floating Japanese yen liability, she is exposed to the following two risks:

1. Depreciation of rupee vs. yen; *i.e.*, appreciation of yen vs. dollar or appreciation of dollar vs. rupee, or both
2. Upward movement in yen LIBOR interest rates during the tenor of the contract

Under current regulations, the customer cannot hedge these risks since these are derived exposures. The only option available is to unwind the entire transaction, which then cannot be rebooked.

The Group has considered the above arguments and has concluded that there is ample justification for permitting hedging of interest rate risk as also foreign currency exposure for pairs of currency other than rupee (for eg: a corporate moving from a rupee exposure to yen exposure and seeking to hedge the dollar-yen currency risk) arising on account of such derived exposures.. However the argument of equating derived exposure in foreign currency with an actual borrowing in foreign currency needs to be accepted with caution at the present stage of development of the market. While there are well laid down rules for accessing foreign currency borrowings, the derived or synthetic exposure has entirely different connotations. Permitting free cancellation and rebooking of such exposures would be tantamount to giving freedom to freely access the foreign exchange market without an underlying forex exposure. This has larger implications and would need to be considered only at a later stage when the country is closer to capital account convertibility. The Group,

therefore, recommends that, for the present, the corporates who have derived foreign exchange exposures may be permitted to hedge the interest rate risk and cross currency exposures only. Rupee-foreign currency swaps, as above, cannot be rebooked on cancellation.

3.4 Hedging of competitive exposures.

There are three types of exchange rate exposures that a firm runs:

(i) Transaction exposure

(ii) Contractual exposure, *and*

(iii) Competitive exposure

The essential distinguishing factor in respect of the three types of exposures is the time horizon over which the exposure arises.

Transaction exposure is the extent to which the value of transactions already entered into is affected by exchange rate risk.

Contractual exposures are slightly longer-term exposures, for instance exposures four quarters from now. These are exposures which are not associated with booked transactions. The exporter will have contractual agreements, implicit or explicit, that affect her exposure at that horizon.

The exposure at long horizons is known as competitive exposure. For instance, the exposure of cash flows three years from now. Competitive exposure in respect of an exporter arises when the overseas sales – both quantity as well as the price per unit - are affected by exchange rate changes. This exposure is so known, because the exporters' competitive position – and not just the profitability of current operations - is altered by exchange rate changes. Competitive exposure is a complex phenomenon and depends on the markets in which the exporter does business.

At present, transactional and contractual exposures are permitted to be hedged. Transactional exposures are permitted to be hedged on the basis of documentary evidence and up to the amount of the underlying exposure.

Contractual exposures are permitted to be hedged up to the extent of the previous year's turnover or the average of the previous three years' turnover, whichever is higher. Documents have to be presented at the time of maturity of the contract.

With regard to the competitive exposure of exporters in overseas markets, international experience suggests the following:

(i) Measurement of competitive exposure is an inexact science

(ii) Since competitive exposure arises over a longer time horizon, the response needs to be strategic in nature, depending upon the particular situation the exporter is confronted with. This includes changes in technology, product mix, sources of inputs, marketing approach, shifting of production base etc.

(iii) Hedging of competitive exposure by way of exchange rate contracts is not commonplace, especially because, as pointed out earlier, the risk factor in competitive exposure is the real exchange rate and not the nominal exchange rate.

Accordingly, the Group is of the view that exporters may not, for the present, be permitted to hedge their competitive exposures; this requirement may best be addressed at the time of going in for capital account convertibility.

3.5 Foreign Currency- Rupee Options- Liberalisation

In the foreign currency-rupee options market, corporates can purchase plain vanilla calls and puts, as also enter into packaged products involving cost reduction structures provided the structure does not increase the underlying risk and does not involve net receipt of premium. As options are complex products, the volumes in foreign currency-rupee options market has expectedly been sedate, but is expected to pick up as knowledge and therefore comfort about the product grows. There are only a few market-makers and that too concentrated in the metros. Customer appetite has mostly been for zero-cost structures. The liquidity has not been very good, leading to wide bid-offer spreads. One of the reasons stated is that customers cannot sell options. Therefore, the market is essentially divided into two camps: market-makers who can sell protection and corporates who can buy protection. (Of course, cost-reduction structures which are permitted have enabled customers to be slightly short volatility.) The resultant risk has to be warehoused amongst the banks

themselves, as corporates cannot be net receivers of premium. If say, an exporter is permitted to sell a call against her underlying, it will enable her to express her view in the market and earn a premium for the same, without adding to incremental risk. The market will also be benefited by the additional liquidity and the fact that risks can be shared among the market-makers and the end-users. Bid-offer spreads would reduce, in turn attracting greater all-round participation. In view of the above, the Group recommends that**, in principle,** corporates subject to adequate risk management systems being in place, be permitted to sell/write covered calls and puts. **However, it is imperative that necessary accounting standards and adequate disclosure norms for the corporates are in place before permitting this facility.**

3.6. Introduction of structured products

The optimal regulatory approach with regard to permitting corporates to engage in simple and complex derivative transactions in foreign exchange (both US$/Rupee as also cross currency) for bringing about changes in their risk profile would be to eschew micro specification of what products can be and what cannot be done. Instead, the discretion should lie with banks. Three built-in factors under this approach would ensure that corporates do not indulge in excessive risk taking through derivatives:

(i) Products that enhance risks of corporates would expose banks to credit risk, the quantum of which would depend on, among other things, the size and the risk factors of the product concerned. This would be reflected in the price of the product. If banks observe proper credit risk control discipline, like establishment of credit line and/or posting of collateral, the ability of corporates to engage in derivatives would be limited to their risk-bearing capacity.

(ii) Proper accounting standards in respect of derivatives that require their periodic valuation for the purpose of recognising the same in the P/L statement or under an equity head would ensure that there is no incentive for corporates to engage in the so-called ‘cost reduction’ derivative transactions by hiding the associated risk.

(iii) Implementing a policy of customer suitability and appropriateness by all the banks. This policy would necessarily imply that the bank takes into account the sophistication and risk management policies and capabilities of the client to go in for the derivative transaction being offered and whether it meets the objectives of the client.

It is reported that some banks have restructured deeply out-of-the-money swaps of some corporates at off-market prices to enable them to hide their losses. ICAI is still in the process of drafting appropriate accounting standards and not all banks have implemented a policy of customer suitability and appropriateness.

Most of the well-documented derivative debacles have been on account of lacunae in accounting regulations, which permitted a few individuals to present an apparently rosy picture regarding their financial performance, which was far removed from reality. They were able to hide losses on derivative deals for a period long enough to cause grievous harm to the institution concerned. For this, it was ultimately the shareholders who suffered; by implication, the regulatory infrastructure was also brought into disrepute.

The Group felt that sequencing should be such that the introduction of complex structures is only after the ICAI puts in place robust accounting guidelines like IAS 39 in respect of derivatives accounting requiring, *inter alia,* all entities transacting in such products to reflect the MTM of such structures in their P&L A/C and Balance Sheet. Transparency and disclosure is essential. Accordingly, the Group recommends that the time is not yet ripe for introduction of complex structures. These may be considered for introduction after appropriate accounting guidelines have been put in place and the legal ambiguity relating to OTC derivatives is addressed.

Suggestions relating to banks

3.7. Ensuring customer suitability and appropriateness

Greater liberalisation requires greater control and discretion with banks; they need to act with responsibility and develop the confidence of corporate entities going

in for derivative transactions. The “appropriateness standard” ensures that banks use the same principles for taking credit decisions for derivative transactions as they do for non-derivative transactions. The bank would evaluate the purpose of the derivative transaction and make an assessment as to whether it is appropriate to the customer’s needs and level of sophistication. While several banks already have an appropriateness policy in place, many banks do not. It is recommended that all banks should introduce a customer suitability and appropriateness policy forthwith.

A case in point is the quanto swap which several corporates, financial institutions and, indeed, banks themselves have entered into, without fully appreciating the risk involved, nor being made adequately aware of the associated risk by the market-making banks. A quanto swap is an interest rate swap which involves payment or receipt of the difference between money market interest rates in two different currencies. The customer expresses a view on a foreign interest rate without taking on the exchange rate risk. Assuming a customer has contracted to pay US$ LIBOR and receive a fixed rate in INR, she is exposed to the risk of LIBOR rising by more than what is forecasted.

A related issue is that ADs should ensure that the Board of Directors of the corporate has drawn up a risk management policy, laid down clear guidelines for concluding the transactions and institutionalised the arrangements for a periodic review of operations and annual audit of transactions to verify compliance with the regulations. The periodic review reports and annual audit reports should be obtained from the corporate concerned by the ADs. While this guideline is already in place, it is reported that banks find it difficult to implement it in the face of certain other banks not insisting on such a policy. All ADs should ensure compliance to this regulation, and refrain from offering derivative structures to those corporates which do not submit the requisite information.

3.8. The closing time for inter-bank foreign exchange market in India.

The Forex Association of India (FAI) has requested Reserve Bank to grant a grace period of half an hour (i.e. up to 4.30PM) for concluding trades like end of day position adjustments, correction of wrong reporting, late reporting of branches and cover operations for customer transactions concluded close to 4.00PM. It is reported

that FIIs also access the market for varying amounts close to 4PM; further, vostro account funding operations also take place after the official trading hours.

The Group has examined the issue and accepts the validity of the request. It is suggested that the closing time for inter-bank foreign exchange market in India be extended by one hour from 4PM to 5PM. Accordingly, the trading hours for the inter-bank foreign exchange market would be from 9.00AM to 5.00PM.

3.9. Capital charge for open position

Banks should ideally maintain capital on their actual overnight open exchange position rather than on the limit available. The current requirement to maintain capital on the limit available is on account of the practical difficulties in computing the amount of capital to be maintained by each bank. However, as on date, banks are required to report online to Foreign Exchange Department (FED) their overnight open position maintained on each day by the close of business on the following working day.. The proposal to maintain capital on the actual open position (rather on the limit approved by Reserve Bank) is, accordingly, recommended for implementation. The modalities for actually computing the capital charge may be worked out based on, say, monthly averages.

3.10. Monitoring of interest rate risk using the VaR

The current method of computation of interest rate risk uses the gap method. Aggregate Gaps takes into account only the sum of the monthly mismatches and does not adequately address issues regarding the period of the exposure and attendant interest rate risk. The ceiling on Aggregate Gap Limit (AGL) is fixed at 6 times the net owned funds. Further, on account of the rolling month basis for determining the buckets, the aggregate gap maintained may exhibit a rise despite no transactions having taken place. With rise in business volumes, several banks have found it difficult to stay within the prescribed AGL. It is recommended that the current method be discontinued and a Value at Risk (VaR) method be introduced for monitoring of gaps. The issue regarding capital charge on the VaR maintained by banks is required to be addressed, though. Further, with rise in derivatives market activity, many banks have gaps in the 1-3, 3-5 and >5year sectors, which the model

also needs to address. An appropriate model may be suggested by FEDAI in consultation with Reserve Bank. The VaR number can be released by FEDAI for each bucket and followed uniformly by all banks.

Ultimately the system should move towards the adoption of a VaR model for interest rate risk on the entire portfolio (including that on the rupee book).

3.11. Overseas borrowing limit

In developed markets, while Covered Interest Rate Parity Principle invariably holds, in India it does not. Permitting banks to borrow a greater amount of foreign currency (FC), though a necessary condition, is not a sufficient one for the above principle to hold. In case the overriding feeling in the market is that of continued rupee appreciation, corporates could borrow in foreign currency and sell it to generate rupee for working capital purposes. Reserve Bank would have to mop up the excess supply. The tendency of the banks would be to go in for more and more Buy/Sell swaps to generate FC for lending as also to meet FC payment requirements. Premia would move into discount. Only if entities that are naturally long in FC were permitted access to the market, would they do sell/buy swaps to avail of the arbitrage advantage which would ensure that covered interest parity prevails. However, this would have capital account convertibility implications. Accordingly, it is recommended that this suggestion may be examined for implementation at a later date.

3.12 Crystallization of unpaid export bills

Authorised Dealers (ADs) are currently required to crystallize the liability of their customers in rupees in respect of unpaid export bills. The rule framed by FEDAI in this regard states that ADs should take into account the exchange risk inherent in an unpaid exchange bill negotiated/ purchased/ discounted and transfer the exchange risk to the exporter by crystallizing the foreign currency liability into rupee liability on the 30th day after notional due date in case of an unpaid export bill. For crystallization into rupee liability, the ADs are required to apply the ready TT selling rate of exchange ruling on the date of crystallization or the original bill buying rate, whichever is higher. This means that while losses on crystallization are passed on to the customers the gains were not. The rule was formulated in 1984 when the foreign exchange market was in its infancy, with low trading volumes and very few products and, therefore, risk-taking by banks was minimal. Further, the country had low foreign exchange reserves and speedier realization of exports was a priority. Today the situation is very different.

For quite some time, exporters have been complaining that the crystallization rule is unfair and asymmetrical, maintaining that the crystallized amount should be as per the ruling selling rate, regardless of whether it is higher or lower than the original rate at which the bill was bought – i.e., the gains on crystallization of an export bill should be passed on to them just as the losses are recovered from them.

The argument in favour of the above rule was that since the need for crystallization arises on account of a default situation i.e. failure on the part of the exporter to realize the export bill on the due date, there is no need to part with the exchange gains realized on account of crystallization. The arguments against the rule underscore the asymmetry and the logic that the ADs should not gain on account of default by their customers. Further, compared to the early 1980s, when this rule came into force, the foreign exchange market now is more liberalized and, among other things, the risk control systems being followed by ADs are much more developed and robust. ADs now manage fairly substantial open positions and are

exposed to a variety of exposures much larger than that arising from unpaid export bills. Also, as per available information, such an asymmetric rule for treatment of exchange gain and loss on crystallization of export bills is not being followed in developed markets.

The Group examined the matter and recommends that the spirit of the current rule, namely, compulsory crystallization of unpaid export bills should be preserved. However, both the exchange loss and gain on crystallization should to be passed on to the exporters in a symmetrical manner. Further, the mandatory period of 30 days for crystallization of export bills should be done away with and ADs be given the freedom to decide on the period for crystallization which may be linked to factors, like the time lag in receiving information about realization of export bills, credit risk perception of different types of exporter clients etc. However, the internal norms to be devised and followed by banks in this regard should be transparently disseminated to all concerned.

Suggestions relating to hedging of commodity and related exposures

3.13. Permission to specific ADs for approving commodity hedging applications

At present, applications from firms for commodity hedging are to be forwarded by their ADs to Reserve Bank along with their recommendations. Certain details are called for:

- A brief description of the hedging strategy proposed such as nature of risk, instruments proposed to be used to hedge the risk, names of commodity exchanges and brokers to be used for the purpose, average tenure/size of exposure along with expected peak positions
- A copy of the risk management policy covering risk identification, measurement, guidelines to be followed for revaluation and monitoring of positions and names/designations of officials authorised to undertake transactions and limits assigned.

A one-time approval is granted by Reserve Bank and the responsibility of monitoring transactions in this regard thereafter becomes that of the AD. All forex

flows pass through one AD only. Monitoring of operations is thus facilitated, since all flows and reporting is to one single AD only. Firms would have to apply to their AD detailing clearly their risk management policy, guidelines to be followed in the matter of price-fix hedging (what percentage of their total anticipated exposure they plan to hedge), internal risk management procedures and operational controls. A certificate from statutory auditors would have to be submitted by the firm on an annual basis to the AD. The certificate should confirm that the prescribed terms and conditions have been complied with and that the firm's internal controls are satisfactory. These certificates may be kept on record for internal audit/inspection.

The Group recommends that the practice of one-time permission by Reserve Bank be dispensed with. The corporates' bankers could adopt the same methodology as has been practiced by Reserve Bank while screening applications from corporates, as well as improve upon it. On account of having banking relationship with the corporates, the ADs would in fact be better placed to appreciate and process the corporate's application. Since all permission to corporates to hedge their commodity price risk overseas and monitoring thereafter would be done by ADs, it is essential that the AD has relevant expertise/ domain knowledge in the area. The Group suggests that relevant criteria be fixed by Reserve Bank for the purpose of authorising ADs to approve commodity hedging applications and monitor transactions thereafter. Apart from financial strength and expertise, it would be essential for the AD to have put in place a customer suitability and appropriateness policy. A suitable reporting format may be designed for reporting to Reserve Bank the participants, volumes and other relevant aspects. As is the practice currently, permission would be given to corporates to hedge their commodity price risk through one AD of their choice only. However, since gold and silver fall under policy prescriptions different from other commodities, hedging the price risk of these commodities will not fall under these delegated powers. Further, while granting permission for hedging overseas, ADs may indicate that it would be advisable to use exchange-traded derivatives as far as possible.

With increase in the number of corporates seeking to hedge their exposure to commodity price risk in the international as well as the domestic exchanges/ through

OTC contracts, it is necessary that suitable hedge accounting norms in this regard be put in place for adoption by corporates. The Group suggests that the ICAI should come up with accounting rules in respect of commodity derivatives in line with international standards.

3.14. Permission to hedge freight risk

The tanker and dry bulk shipping businesses primarily provide services for the carriage of commodities. The rates and realisations on them are closely linked to the commodities markets. The volatility in the freight rates is therefore of a very high level. For instance, it is reported that in 2004, the freight rate on the VLCC (Very Large Crude Carrier) route from the Arabian Gulf to the Far East saw a high of US$ 45 per ton and a low of US$ 9 per ton.

For trades involving low value – heavy weight commodities, managing shipping costs becomes even more important – it is observed that shipping iron ore costs more than the cost of the iron ore, while the shipping cost of coal is around 60 per cent of the cost of the coal.

For a shipping company, managing the freight volatility assumes a great deal of importance. Forward Freight Agreements (FFAs) are widely used internationally to hedge the risks ship owners and their clients are exposed to. FFAs are contracts bought or sold on a specified Baltic route at an agreed rate for a specified quantity and specific period in the future, and then settled in cash against the appropriate Baltic index/route at the end of each agreed period. The Baltic Exchange declares the indices/rates for several vessel types and routes, both tankers and dry bulk. FFAs are quoted in terms of freight (rate per ton) or as a time-charter rate. The FFA is essentially an OTC market, where settlement is made between the two parties to the contract and not through an Exchange. Counterparties are exposed to mutual credit risk exposure.

Keeping in view the freight risk incurred by the ship owners and their clients, it is recommended that both parties may be permitted to hedge themselves to the extent of their actual physical exposure, based on underlying.

3.15. Hedging of Inventories.

It is observed that several oil companies carry considerable inventory at all times, necessitated by oil and oil products being a sensitive commodity. This is in order to ensure that no shortages occur at any time. Oil companies are, therefore, 'long' and hence exposed to the risk of a decline in prices.

The Group recommends that oil companies may be permitted to hedge inventories based on balance sheet to the extent of the inventory during the previous year. Public sector oil companies may obtain requisite Government clearance before operationalising their hedging strategies.

3.16. Hedging of economic exposure arising out of commodity price risk

Under extant regulations, residents in India engaged in import and export trade, may hedge the price risk of all commodities in the international commodity exchanges/ markets. All standard exchange-traded futures and options (purchases only) are permitted. If the risk profile of the resident entity warrants, it is also permitted to use OTC contracts. It may also use a combination of option strategies involving a simultaneous purchase and sale of options as long as there is no net inflow of premium. The focus is on risk containment. Only off-set hedges are permitted. This implies that the resident entity should have a firm underlying before it hedges its risk in the international market by buying futures and options contracts in the commodity exchanges or OTC contracts. No price-fix hedge is permitted. A price-fix hedge enables an importer/exporter to lock into a future price for a commodity she plans to import/export without actually having a crystallised physical exposure to the commodity. . The advantage of a price-fix is that it allows a firm to lock into a price when it is attractive, leading to better planning and raw material management.

It is well accepted that giving freedom to hedge against price risks is an integral part of the process of economic reform and liberalisation. Accordingly, the Group recommends that corporates may be permitted to hedge their commodity price risk by entering into price fix hedges to the extent of the average quantity of commodity bought/sold during the previous three years, or during the previous year,

whichever is higher. This would be applicable both to commodities imported/ exported and procured domestically. Wherever necessary, Government clearance may be obtained by public sector companies before operationalising their hedging strategies.

For producers/consumers of commodities, the risk of fall/rise in prices may be on the entire produce/amount consumed. Accordingly, they may be permitted to hedge their commodity price risk by entering into price fix hedges to the extent of the average quantity of commodity produced/consumed during the previous three years, or during the previous year, whichever is higher. Alternatively, there may be situations where producers/consumers may run a price risk not on the gross amount, but on the net amount only. They may be permitted to hedge the price risk on the net amount, since a part of the input price risk is offset by the output price risk. Illustratively, consumers of commodities may buy raw material, process the same and sell finished goods, in which case they run a commodity price risk on the net amount only.

3.17. FCNR (B) deposits in more currencies

The Group recommends that FCNR (B) deposits may also be accepted in CAD, AUD and NZD so as to encourage flows from these countries. This would enable non-resident Indians (NRIs) in these countries to avail FCNR(B) facility without having to incur any exchange rate risk.

Miscellaneous

3.18. Deregulation of PCFC interest rate

The existing regulations which stipulate that that Pre-shipment Credit in Foreign Currency shall be extended to exporters at not more than LIBOR + 75 basis points is observed more in the breach. Banks frequently add a “service charge” to the LIBOR +75 basis points cap. This is not objected to by exporters also since they are still able to obtain funding at cheaper levels as compared to rupee credit; objecting to getting PCFC at this enhanced rate may actually result in the exporter not getting PCFC at all. In such a situation, the stipulation on the interest rate on PCFC may be dispensed with. It is recommended that Reserve Bank may write to the Government of India suggesting deregulation of PCFC interest rate.

3.19. Release of data on derivatives

Release of data to the market improves transparency and enables participants to gauge the volumes being transacted. This suggestion is recommended for implementation. Reserve Bank may design a suitable format in consultation with FEDAI.

3.20. Introduction of US$/INR currency futures.

As per current regulations, only those market participants who have an exposure to exchange rate risk are allowed to hedge the risk using various products available, such as spot and forward contracts, swaps and options. Once currency futures are introduced, it would no longer be possible to ensure that the entity buying/ selling a futures contract has an underlying. As such, participants having purely a speculative interest would be enabled to enact their views using futures. Therefore the Group is not in favour of introduction of this product for the present.

3.21. Regulatory and accounting convergence in respect of derivatives.

There is regulatory divergence in the permissible structures of rupee and forex derivatives. These restrictions have been put in place on account of prudential considerations and the fact that India is not fully convertible on the capital

account. The Group recommends that till such time as capital account restrictions are in place, it would be desirable to maintain differential regulations with respect to rupee interest rate derivatives and forex derivatives.

There should be full convergence between the accounting treatment of all types of derivatives (Rupee as well as foreign exchange). and also amongst banks and corporates.

The objective here is to eliminate all incentives to drive any wedge between on-balance sheet and off–balance sheet items. Moreover, there is need to put in place objective conditions to determine whether a derivative is in the nature of a hedge or not. Wherever the derivative is in the form of a hedge, the accounting treatment should be the same as that for the underlying. The Group recommends that derivatives accounting norms on the lines of IAS 39 be introduced for adoption by banks and corporates alike. However, in the case of banks, a somewhat stricter and conservative accounting norms may be necessary on prudential considerations, in view of the pivotal position of banks in the country's financial and payments systems. Para I.40 of Annex I may be seen for a more detailed analysis.

Implications of further liberalisation & Safeguards

The implications of liberalisation measures recommended by the Group for the overall forex market and its two major constituents – users and banks – are as follows:

Forex market

Going by international experience, more freedom on outflows would cause more inflows, particularly when the outlook on the rupee is bullish. Thus, further liberalisation would possibly lead to increased supply and more volume and liquidity in the spot and derivatives segments of the forex market.

Market users

With increase in the international trade volumes, greater access to international funds by way of borrowings and enlargement in scope for investments overseas, it is imperative that Indian corporates have the necessary systems to manage their foreign exchange risk. The proposed liberalisation measures would

offer more flexibility to corporates to manage their risks dynamically and lead to more efficient reallocation of risks.

The competitive position of Indian entities engaged in international trade will be enhanced as a result of the suggested measures. Liberalisation measures pertaining to hedging of commodity price risk would ensure that corporates dealing in commodities whose prices are linked to international prices would be able to compete effectively with their competitors.

Banks

Authorised dealers will benefit from the larger array of products and higher volumes. Banks as users will also benefit in the same way as all other users in better management of their market risks.

Safeguards

Phased implementation

The recommendations need to be implemented in a phased manner so as to allow time to all categories of participants to adequately prepare for the new products/activities that will ensue.

Monitoring of user activities - Information

Enhanced flexibility to users should go hand in hand with availability of critical information for monitoring purposes. At present, there is a substantial information gap as regards what the market-users are doing . This is important for market monitoring purposes, particularly since forex activities of the treasuries of large corporates are increasingly becoming profit-seeking.

Large corporates often use more than one authorised dealer for forex operations. Hence, it would be a good idea to designate one authorised dealer for each large customer to collect and collate information in respect of their forex operations.

Transparency

From a systemic perspective, guaranteed settlement of forex transactions, particularly of the derivatives, provides a fair degree of stability. Also, it becomes easier for authorities to monitor and regulate activities in the derivative markets if all information is concentrated on the clearing/settlement mechanism. CCIL has been offering clearing and guaranteed settlement of spot US$/INR transactions. Guaranteed settlement of US$/INR forward transactions from trade date is likely to commence soon. Centralised clearing and settlement for derivatives by CCIL would rid banks of their concerns regarding credit risk on account of the derivative positions of the counterparty banks; dissemination of information by CCIL would bring about more transparency.

Disclosure

Further liberalisation requires better transparency and ready availability of information. It would therefore be essential to put in place a comprehensive reporting system for all derivatives transactions. The reports should be such that they bring into focus not only the volumes transacted but also the quantum of risk faced by banks on account of their derivative positions.

Chapter 4

Summary of recommendations for implementation in the short-term.

The following measures are proposed for implementation in the short-term:

Resident Entities

1. To provide greater flexibility to resident entities in dynamically managing their exposures, to further the development of the forward segment of the market and to bring about uniformity with respect to booking of such contracts, all forward contracts booked by residents, regardless of tenor, may be allowed to be cancelled and rebooked freely. Foreign currency-rupee swaps booked to hedge genuine foreign currency exposures may also be permitted to be rebooked/reinstated on cancellation. Currency swaps enabling a corporate to move from a rupee exposure to a foreign currency exposure, one cancelled, cannot be rebooked.
2. Corporates who have derived foreign exchange exposures arising from rupee-foreign currency swaps may be permitted hedge the interest rate risk and cross currency exposures (not involving the rupee).
3. Corporates may be permitted to sell/write covered call and put options subject to **adequate accounting standards** and risk management systems being in place,

Banks

1. Greater liberalisation requires greater control and discretion with banks. Banks need to evaluate the purpose of the derivative transaction being offered to their customers and make an assessment as to whether it is appropriate to the needs and level of sophistication of the customers. All banks may be required to put in place a customer suitability and appropriateness policy.
2. Banks may be permitted to provide capital on the actual overnight open exchange position maintained by them, rather than on their open position limits.
3. Banks may be given the freedom to decide on the period of crystallization of unpaid export bills. The exchange gain and loss on crystallization shall be passed on to exporters symmetrically.
4. Banks having expertise in managing commodity price risk and hence specifically authorised by Reserve Bank in this regard, may be allowed to approve commodity hedging proposals from their corporate customers.

5. The closing time for inter-bank foreign exchange market in India may be extended by one hour from 4.00 PM to 5.00 PM.
6. Forex data, including traded volumes for derivatives such as foreign currency-rupee options, may be made available to the market on a regular basis.

Non resident entities

1. FCNR (B) deposits may also be accepted in Canadian dollar (CAD), Australian dollar (AUD) and New Zealand dollar (NZD), apart from US dollar (US$), Pound sterling (GBP) , Euro and Japanese yen (JPY), as at present.

Annex I

Perspective on the Indian Forex Market.

I.1 The wide-ranging structural reforms in the 1990s in response to the unprecedented external payment crisis of 1990-91 led to strength and resilience in the external sector of the economy. With the country moving to a market determined exchange rate regime and becoming fully convertible on current account transactions, the risk-bearing capacity of banks increased and trading volumes started rising. The first major initiative toward further developing the forex market along modern lines in the early years of reform was the appointment of an Expert Group in November 1994 to study, in-depth, the shortcomings of the foreign exchange market and to recommend measures for its efficient and orderly growth, including the introduction of new derivative products. The Expert Group, popularly known as the Sodhani Committee, made 33 major recommendations. Reserve Bank accepted these for implementation and the period starting from January 1996 saw wide-ranging reforms in the Indian foreign exchange market. Certain measures, such as permission to Foreign Institutional Investors (FIIs) to hedge their investments in India, which were not found suitable for implementation initially, were also implemented subsequently.

I.2 The Indian forex market is made up of banks authorised to deal in foreign exchange, known as Authorised Dealers (ADs), foreign exchange brokers, money changers and customers - both resident and non-resident, who are exposed to currency risk. It is predominantly a transaction-based market with the existence of underlying forex exposure generally being an essential requirement for market users. The entire gamut of regulations on hedging of currency exposures is predicated on the fact that the entity accessing the forex market should have an underlying. Foreign Exchange Dealers' Association of India (FEDAI) plays a special role in the foreign exchange market as a Developmental Agency for smooth and speedy growth of the forex market in all its aspects. All ADs are required to become members of FEDAI and to execute an undertaking to the effect that they would abide by the terms and conditions stipulated by FEDAI for transacting forex business.

FEDAI is also the accrediting authority for the forex brokers in the interbank forex market.

I.3 AD licences are issued to banks, on their request, under Section 10(1) of the Foreign Exchange Management Act, 1999. The AD licences are co-terminus with the banking licences and allow ADs to undertake the entire range of foreign exchange activities. All merchant transactions are required to be undertaken through ADs. ADs are freely allowed to buy/sell/swap foreign exchange and enter into forward and derivative contracts with other banks. Currently, there are 88 ADs operating in India out of which two are Urban Co-operative banks (UCBs) and one is a State Co-operative Bank. Some UCBs have been granted Full Fledged Money Changer's licence, which allows them to buy foreign currency and sell foreign currency for private and business visits. A few of them have also been granted permission by Reserve Bank to maintain NRE/NRO deposits. Some financial institutions, which have large volumes of foreign exchange transactions and wish to run their own treasuries, have been granted restricted authorised person's licence. Under this licence, their foreign exchange transactions have to be restricted to those listed out in their licence. While they are allowed to hedge their underlying forex risk, they are generally not permitted to trade/ initiate positions.

I.4 As mentioned above, AD licences are granted to banks co-terminus with their banking licences. However, it is well acknowledged that managing forex risk requires expertise, both in terms of human resources and systems, on an ongoing basis. It, therefore, bears examination as to whether one should consider issuing an AD licence initially for a period of, say, three years. During this period, the bank's forex operations would be monitored and only if the systems and procedures adopted are found to be satisfactory, would the licence be renewed. If any major violation of guidelines is detected warranting discontinuation of the AD licence, the same would not be renewed. AD licence would not be granted or if granted, would be withdrawn, in case of banks whose balance sheets are weak, and which could possibly face a difficult financial situation.

I.5 Primary Dealers (PDs), who primarily deal in government securities, have evinced interest in obtaining AD licences. Their specific interest appears to be in

acting as market makers in derivative products. However, as dealers in Indian securities, they are not exposed to foreign exchange risk. In addition, PDs are financial intermediaries mandated to perform a specialised role in Government Securities Market; their role as market- makers in foreign exchange has not been envisaged, and may, in fact, come in the way of effective discharge of their responsibilities as primary dealers. As such, PDs may not be granted AD licences for the present. The request of PDs for permission to invest in overseas securities is currently under consideration. In case such investments are approved, PDs would be exposed to exchange risk insofar as their overseas investments are concerned and would be permitted access to the domestic forex market as users, through their ADs.

1.6. All merchant transactions in the forex market have to be necessarily undertaken directly through authorised dealers. However, to provide depth and liquidity to the interbank segment, ADs have been permitted to utilise the services of brokers for better price discovery in their interbank transactions. Inter-bank contracts can be concluded between ADs through direct negotiations over the telephone or through an electronic negotiated dealing system where the counterparties directly contact each other over an electronic dealing platform and negotiate the terms of the contract. Alternatively, such deals can be put through a voice broker over telephone or through an electronic order matching system, where counterparties leave their bid/ offer quotes on an electronic system which are displayed to the market participants.

The Sodhani Committee had seconded the proposal of Reserve Bank for setting up of a clearing house for forex transactions, considering the substantial benefits which would accrue to banks such as reduction in the cost of settlement, reduction in counterparty risk due to the settlement guarantee offered by the Clearing House, better utilisation of counterparty limits on account of netting, etc. Accordingly the Clearing Corporation of India Ltd. (CCIL) was set up in 2001 and has been undertaking guaranteed settlement of interbank US$/INR spot and forward contracts since November, 2002. Forward deals are guaranteed for setlement from the S-2 day; the proposal for guaranteed settlement of forward deals from trade date is currently under examination. Subsequently, CCIL has been undertaking

guaranteed settlement of cash (value same day) and tom (value next working day) contracts also. The settlement is undertaken on a multilateral net basis, through a process of novation, and all trades accepted are guaranteed for settlement.

To take care of the risks associated with guaranteed settlement, CCIL has set up a robust risk management mechanism by setting exposure limits for its members and also putting in place a sound allocation mechanism. CCIL has recently been granted pemission for aggregation of cross currency deals of ADs through the Continuous Linked Settlement (CLS) process by becoming a third party user in the CLS system. CLS settlement is however not a guaranteed settlement and only ensures that settlement takes place on a Payment Versus Payment basis. Once the CLS facility is operational, the feasibility of extending it to banks in our neighbouring countries (such as those under the Asian Clearing Union mechanism) needs to be explored.

I.7 General permission has been given to ADs to open/close rupee accounts of their overseas branches or non-resident banks with whom correspondent relationship is established. No interest is payable on the balances in these accounts. Funding of the vostro accounts can be done only on up to spot basis, for which ADs are permitted to quote only the bid side. ADs are not permitted to make two way or forward quotes to overseas banks.

I.8 Reserve Bank issued guidelines to banks in November 2002 for opening and maintenance of Off-shore Banking Units (OBUs) at the Special Economic Zones set up at the behest of the Ministry of Commerce, Government of India. The OBUs are expected to provide world class facilities and funds at global rates to the export oriented units situated in these zones. OBUs are not permitted to deal in rupees at all except for their day to day expenses. There has to be a clear fire wall between their activities and the domestic forex and money markets. To this end, they have been prohibited from lending to their parents/branches in India. They are also permitted to lend only 25 per cent of their total liabilities as on the previous working day to units in the Domestic Tariff Area (DTA). While OBUs are permitted to invest overseas, they are not permitted to lend outside India.

Several banks operating OBUs have requested for expansion of the activities conducted by OBUs. They have represented that lending to units in the SEZs does not generate sufficient business and they should be allowed further facilities such as lending to banks in India, to Export Oriented Units in the Domestic Tariff Area and to overseas entities. To prevent off shore funds from contributing to credit expansion and increase in prospects of liquidity, forex and credit risks, it is necessary to insulate the DTA from credit flows from the OBUs. Therefore, the first two activities cannot be considered. However, allowing OBUs to lend outside India and take part in international syndications/ consortiums at par with the foreign branches/offices of Indian banks may be considered favourably. This would enable OBUs to shift focus from the domestic canvas to an international one and help them develop expertise in the international sphere. At the same time, this would ensure that dealings of offshore banks with residents would reduce as a percentage of their total business, which really was the intention when OBUs were established.

I.9 The Indian forex market has grown manifold over the last several years. While the number of banks authorised to deal in foreign exchange has shown a modest increase from 84 to 88 and the number of forex brokers from 40 to 47, turnover has grown substantially, as reflected in the table below. The top 30 banks in India account for approximately 90 per cent of the overall turnover in the market.

(Amount in US$ billion, without adjusting for double-counting)

	Jul 96-Jun 97	**Jul 03-Jun 04**
Total turnover	915.98	2429.81 (2.6 times)
Avg. daily Merchant turnover	0.60	2.24 (3.7 times)
Avg. daily Inter-bank turnover	3.07	7.47 (2.4 times)
Avg. daily total turnover	3.67	9.71
Inter-bank to Merchant ratio	5.12	3.33
Spot t/o as a percentage of total t/o	52.92	49.38
Forward t/o as percent of total t/o	11.65	13.36
Swap t/o as percent of total t/o	35.43	37.26

There are two significant features in the above data. The first is that inter-bank to merchant turnover ratio has declined from 5.12 to 3.33. This is on account of the fact that the merchant turnover has grown at a much faster pace than the interbank turnover. The second is that Inter-bank FC/FC (foreign currency/foreign currency) turnover as a percent of total Inter-bank turnover declined from 42 per cent in 96-97 to 24 per cent in 2003-04. This was on account of substantial increase in Inter-bank FC/INR turnover.

I.10 The sector-wise distribution of the turnover figures (as a proportion of the total turnover for the respective year) is given below:

(In per cent)

	1996-97			2003-04		
Banks	Merchant	Interbank	Total	Merchant	Interbank	Total
Public Sector	8	21	29	9	32	41
Private Sector	2	10	12	5	13	18
Foreign	7	52	59	9	32	41
Total	17	83	100	23	77	100

The table indicates that the share of the public sector banks in the total turnover has increased from 29 per cent in 1996-97 to 41 per cent in 2003-04 equaling that of foreign banks, whose share has declined from 59 per cent to 41 per cent during the same period. The share of private sector banks has also gone up from 12 per cent to 18 per cent during the same period. Some of the new private sector banks have shown significant growth in their turnover over this period. The major growth for the public sector banks has been in their interbank segment,

indicating an increase in their trading transactions. On the other hand, the foreign banks have seen a sharp decline in their interbank volumes from 52 per cent in 1996-97 to 32 per cent in 2003-04, while their merchant volumes have grown from 7 per cent to 9 per cent. The merchant turnover of a few foreign banks has shown a significant increase during the period.

I.11 The market trades freely in spot and forward exchange contracts, and to a limited extent in derivatives. Corporates are not permitted to undertake foreign exchange swap transactions. The efficiency/liquidity of the market is often gauged in terms of bid/offer spreads. Wider spreads are a sure indication of an illiquid or a one-way market. In India, the normal spot market quote has a spread of 0.50 to 1 paise while swap quotes are available at 1 to 2 paise spread. The forward market is very liquid up to one year.

I.12 While the market has grown tremendously, it is fledgling compared to the global market. As per the Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity conducted by BIS in April 2004, and in which Reserve Bank also participated, average daily turnover in the international market has risen to US$1.9trillion in 2004 as against US$1.2trillion in 2001.This represents an increase of 57 per cent at current exchange rates and 36 per cent at constant exchange rates. Regarding the currency composition of turnover, Dollar/Euro is by far the most frequently traded currency pair with 28 per cent of global turnover, followed by Dollar/Yen (17 per cent) and Dollar/Sterling (14 per cent). Percentage share of average daily turnover indicates that US dollar holds 88.72 per cent share, followed by Euro(37.2 per cent), Japanese yen(20.3 per cent) and Pound sterling (16.9 per cent). (Because two currencies are involved in each transaction, the sum of the percentage shares of individual currencies totals 200 per cent instead of 100 per cent) The Indian rupee has just a 0.3 per cent share. It is also worth mentioning that the growth in forex turnover in India has been more than in the global markets. The reason may be attributed to the substantial increase in the volume of forex flows into the country.

I.13 The above survey also indicated that the derivatives market activity has shown tremendous growth as well. Turnover in nominal or notional principal amounts (in US$ million) during the month of April 2004, which may be considered as representative of average monthly turnover, is as follows:

(Amounts in US$ million)

Forward Rate Agreements Of which INR FRAs	2242 698
Interest Rate Swaps Of which INR IRS	17102 11437
Cross Currency Swaps Of which FC/INR swaps	3028 2096
OTC Options (FC/INR +Cross cy) Of which FC/INR	2836 1365

However, average daily OTC derivatives turnover in India forms around 0.1 per cent of the US$1.26 trillion average daily global turnover (excluding outright forwards and foreign exchange swaps).

I.14 Non- Deliverable Forwards: An interesting development has been the establishment of a non-deliverable forward (NDF) market in US$/INR offshore, largely concentrated in Singapore, but also traded out of London and New York (on a smaller scale, though). While reliable statistics on the volumes traded are hard to come by, a recent BIS report puts the average daily turnover, as measured by an Emerging Markets Traders Association (EMTA) survey in early 2003, at US$38 million. This is quite small compared to a daily turnover of US$9.71 billion (US$7 billion excluding double-counting) in the onshore market, although reportedly NDF volumes have grown since then. The daily turnover in US$ million per day for the other commonly traded Asian currency NDFs are 1,350, 250, 150, 65 and 38 for Korean won, New Taiwan dollar, Chinese renminbi, Indonesian rupiah and Philippines peso, respectively.

NDFs in offshore locations are synthetic foreign currency forward contracts on non-convertible or restricted currencies traded over the counter outside the direct jurisdiction of the authorities of the corresponding currencies. These are generally settled in US dollar. The demand for NDFs arises principally out of regulatory and liquidity issues of the underlying currencies. These derivatives allow multinational corporations, portfolio investors, hedge funds and proprietary foreign exchange accounts of commercial and investment banks to hedge or take speculative positions in local currencies.

The pricing of NDF is quite different from that of regular outright forward contracts. The prices are determined by a combination of interest rate differential between the two currencies, supply and demand, future spot expectation and local currency forex regime/ central bank policies. Thus, NDFs are derivative instruments for investors/ speculators who are interested in hedging/ speculating on a currency without a forward market, or a forward market with restrictions for non-residents. The settlement of the transaction is not by delivering the underlying pair of currencies, but by making a net payment in a convertible currency proportional to the difference between the agreed forward exchange rate and the subsequently realised spot fixing.

It is observed that the average turnover in Asian NDF currencies, which amount to around 70 per cent of the emerging market NDF turnover globally, has risen over the years; however, turnover fluctuates a good deal from day to day. Volatility is typically larger than the spot counterpart, owing possibly to intervention in the spot market. Asian NDFs tend to correlate more positively with each other than do their spot counterparts. The wide spreads between onshore interest rates and NDF-implied offshore interest rates suggest segmentation of onshore and offshore markets in Asia, with the exception of South Korea.

In the case of India, the relationship between the two rates also seems to reflect the swings in the underlying market pressure in the rupee. In the wake of the Asian crisis, offshore implied interest rates were higher than onshore rates, reflecting ongoing depreciation pressure in the offshore trading at the time. Since 2003,

however, offshore expectation of further rupee appreciation has driven offshore implied interest rates below onshore rates. Thus, for example, the onshore/onshore interest rate spreads swung from a negative 400 to 1000 basis points in 1999-2001 to positive 300-600 basis points by late 2003. Current spreads continue to reflect offshore expectations of further rupee appreciation.

Mechanics of Settlement of an NDF Transaction Offshore

The basic formula may be expressed as:

Settlement amount in US dollar = Notional amount in US dollar * ((NDF rate – Reference rate on Settlement date) / Reference rate).

If settlement amount < zero, contract seller pays the difference to the contract buyer.

If settlement amount > zero, contract seller receives the difference from the contract buyer.

Thus, if one has sold an NDF contract for notional US$1mio 12-month forward at Rs.45.46, and the reference rate for that 12-month forward date turns out to be Rs.45.00, then the contract seller receives

1000000 X (45.46 – 45.00) / 45.00 = US$10,222.

Policy initiatives to develop the forex market

(A) Relaxations for banks:

I.15 Overnight Open Position Limit (OPL)

The Sodhani Committee recognised that a vibrant forex market would have to allow banks to make two way quotes and take larger open positions. Until 1994, ADs were not permitted to take any view on currency movements and were required to maintain square or near square positions. Subsequently in May 1994, all banks were uniformly allowed an overnight open position limit of Rs 15 crore. As per the Sodhani Committee recommendation, banks were given the freedom to fix their own open exchange position limit and seek approval of Reserve Bank in this regard. The revised limits became operative from January, 1996. Obviously the limits should have a reasonable relation to the trading volumes, merchant turnover and the capital structure of the banks.

It has been observed that as the banks' sophistication and volumes have grown, they have gradually sought to increase their OPL. The combined OPL of the banking system today is several times the OPL that was prevailing in 1996.

I.16 Aggregate Gap Limit AGL)

Depending upon the asset-liability profile, dealing expertise and such other relevant factors, ADs have been accorded freedom to fix their own gap limits for more efficient management of their assets and liabilities, subject to Reserve Bank approval. The ceiling on AGL is fixed at 6 times the net owned funds of the AD. AGL seeks to control an AD's liquidity or mismatched maturity risk. Such risks occur when liabilities and contracts to sell in a given currency mature earlier/later than assets and contracts to purchase in that currency. The maturity mismatch is basically a problem of excess or shortage of funds on any given day; generally, banks are more concerned about a negative gap than a positive gap since it could imply having to fund such shortage at higher than anticipated interest costs (in case of borrowing) or swap costs (in case the currency is purchased to match the shortage and re-sold for another date). The current method of capturing the risk associated with asset-liability maturity mismatch of the forex book of ADs through an indicator (AGL), which is the aggregate of the monthly mismatches, is not very accurate. Banks which are

permitted higher Aggregate Gap Limits are required to mark-to-market their gaps on a daily basis using value-at-risk (VaR) models. A VaR methodology is better than the current methodology for estimating the risk associated with gaps.

While ADs have sought to increase their AGL in tune with their business volumes, the utilisation of AGL for accommodating maturity mismatches on account of derivative transactions has also increased.

I.17 Initiating cross currency position in the overseas markets:

With globalisation and significant increase in cross border capital flows, banks commenced taking views on cross currency movements also. The banks which had put in place adequate risk management systems, on approval of Reserve Bank, were permitted to trade in the overseas markets, subject to observance of the overall position/gap discipline. Currently, banks do not need prior approval of Reserve Bank for initiating cross-currency trading positions overseas.

I.18 Asset - liability management by banks:

Once the foreign currency balance-sheet of the banks started swelling on account of liberalisation, banks were permitted to use interest rate swaps, currency swaps and FRAs for their own asset liability management, subject to a proper risk management policy being approved by their top management. They can also purchase call or put options to hedge their cross currency proprietary trading positions.

I.19 Removal of statutory pre-emptions on inter-bank borrowings

Among other things, the Sodhani Committee went into the issue of the absence of a term-money market in rupee and the consequential imperfection of the yield curve at that time. To address this, it recommended that statutory pre-emption on inter-bank borrowings be abolished. Accordingly, in April 1997, Reserve Bank exempted cash reserve requirements on inter-bank borrowings.

An inter-bank term money market is yet to develop, and the closest proxy to a rupee yield curve is the MIFOR curve. MIFOR is an acronym for Mumbai Inter-bank

Forward Offered Rate. MIFOR curve is a swap curve which is fairly liquid up to five years, although quotes extending to ten years are usually available. Use of MIFOR swap as a derivative instrument for management of interest rate and currency risks has been increasingly resorted to by banks, non-bank financial institutions and corporates alike over the last few years. The evolution of MIFOR swaps can be traced to the facility extended by the Reserve Bank in April, 2000 for the use of 'interest rates implied in the foreign exchange forward market' for pricing of rupee interest rate derivatives. At present, daily trading volumes in the MIFOR swap market are estimated to be in the region of INR350-450 crore.

The MIFOR is a benchmark denoting the cost of rupee funds implied by the US dollar interest rate (LIBOR) and US$/INR forward premia. A MIFOR swap is a plain vanilla (Fixed/Floating) interest rate swap with the floating leg tied to the MIFOR. For swaps of tenor more than 12 months, the floating rate is six-month MIFOR. For swaps of shorter tenor, the floating rate is three-month MIFOR. There is no exchange of principal and interest payments are settled on a net basis. There are established market conventions for computation of six- and three-month MIFOR on all working days.

By construction, hedging of MIFOR swaps necessarily involves a transaction in the US$/Rupee forward market. For example, hedging of a 'Received' position (Receive Fixed – Pay Floating) in a MIFOR swap of five-year tenor would involve the following: (i) Borrow rupee funds (equal to the principal amount) for six months; (ii) Use this fund to do a US$/INR Buy-Sell swap for six months; (iii) Invest the US dollars in a six-month deposit; (iv) Repeat these steps every six months.

Conversely, hedging a 'Paid' position (Pay Fixed – Receive Floating) in a MIFOR swap of five-year tenor would involve the following: (i) Borrow US$ funds for six months; (ii) Use this fund to do a US$/INR Sell-Buy swap for six months; (iii) Invest the rupee fund in a six-month deposit; (iv)Repeat these steps every six months.

The above characteristics of MIFOR swap render it a tool for coupon-only currency swaps as well. Those with medium to longer term borrowing in US dollars

at floating rates can lock in a fixed rupee rate for interest payments through MIFOR swaps.

Despite its ingenuity and popularity, MIFOR swap mechanism raises a few issues:

(i) The MIFOR swap rates cannot be arrived at analytically. In other words, pricing of MIFOR swaps do not follow the no-arbitrage principle. MIFOR swap rates are determined by forces of demand and supply. In this respect, it is exactly similar to the US$/INR forward premia, which usually do not reflect the interest rate differential (arbitrage-free level) and are determined solely by forces of demand and supply.

(ii) The six-month MIFOR is a rupee interest that should prevail if the US$/INR six-month forward premium is equal to the interest rate differential for a similar tenor. To the extent that the US$/INR forward premia reflect market's expectation about future movement of the spot US$/INR, MIFOR rates embody an exchange rate expectation. This is equally true about the longer-term MIFOR swap rates as well. In economic terms, MIFOR swap rates can be better explained with reference to the principle of 'Uncovered Parity'. Thus, MIFOR swap rates are derived rupee interest rates, given the expectation about the movement of the spot US$/INR rate and US dollar interest rates for similar tenors.

I.20 Permission for overseas borrowings and investments

One of the major shortcomings of the Indian foreign exchange market is that the forward price of the rupee is not determined by the interest rate differentials alone, but is influenced in a major way by (a) supply of and demand for forward dollars, (b) interest differentials and expectations of future interest rates, and (c) expectations of future US$/INR rate. This would indeed be the case in all countries that still have exchange and capital controls. To initiate the process of integration between the two markets, Reserve Bank has permitted limited access to banks to borrow from and invest in the overseas markets. Presently, banks are permitted to borrow overseas up to 25 per cent of their Tier I capital or US$10 million, whichever is higher. However, overseas borrowings of banks for funding export credit are not included in this limit. The interest and exchange rate scenario, prevailing over the

last two years has led to increased demand by exporters for foreign currency denominated loans leading to manifold increase in the overseas borrowings of banks to fund these loan assets. In March 2004, rationalization of the various avenues for foreign currency borrowings of banks was undertaken and a system of monthly reporting was introduced. Current data indicates that the banking system's overseas borrowing is quite close to the overall ceiling and if borrowings for funding of export credit are also included, the total overseas borrowings are significantly higher. A reference is also drawn to the Report of the Internal Group on External Liabilities of Scheduled Commercial Banks constituted by Reserve Bank. In its report dated May 24, 2004, the Group had stated as follows: "International liabilities of banks are now nearly double of their international assets which is an issue of serious concern."

There has been some thought on whether a cap should be placed on the total overseas borrowings of banks at, say, 50 per cent of each bank's Tier-I capital. The concern about residents borrowing in foreign currency is that it might lead to a ballooning of unhedged exposures which may have adverse implications for the stability of the foreign exchange market as well as the quality of loan assets in the books of banks. However, foreign currency loans for funding export credit cannot be considered to be unhedged since exporters have a natural hedge in terms of their export proceeds. The only apprehension would then be if exporters were to sell their foreign currency proceeds forward and repay the foreign currency loans out of rupee resources. One point of view is that with the withdrawal of quotas for many manufactured goods, Indian exports are set to take off and this may not be the right time to restrict the availability of foreign currency funds to the exporters and therefore, no limit should be placed on banks' borrowings for funding export credit.

Another issue for examination is whether smaller banks, for whom US$10 million is higher than 25 per cent of their Tier-I capital, should be permitted to borrow only up to the 25 per cent limit. This could be justified in the sense that being a smaller bank, its risk-taking appetite would also be smaller and the prudential limit of 25 per cent would be an appropriate ceiling. On the other hand, such small banks are few in number; they have limited merchant base and restricting their borrowing would further starve them of opportunities in the market.

ADs are free to undertake overseas investments up to the limits approved by their respective Boards. Such investments may be made in deposits with banks or money market/debt instruments of approved rating with residual maturity up to one year. Investments in fixed income securities of longer tenor are permitted for undeployed FCNR (B) funds subject to the condition that the maturity of the securities does not exceed the maturity of the underlying deposits.

I.21 Hedging of capital by banks

Foreign banks are allowed to hedge the Tier-I capital held by them to manage the translation risk on their global balance sheet on account of their operations in India, subject to the condition that the forward contracts should be for tenors of one year or more and that the capital funds should be available in India to meet local regulatory and CRAR requirements. Rebooking of cancelled hedge will require prior approval of Reserve Bank.

(B) Relaxations for the users

Residents

I.22 Starting from 1992, corporates have been permitted increasing access to foreign currency funds. While exchange earners in select categories such as Export Oriented Units (EOU) are permitted to retain 100 per cent of their export earnings, others are permitted to retain 50 per cent of their forex receipts in EEFC accounts. On account of these factors, corporates were accorded greater freedom to undertake active hedging. Recognising this, Reserve Bank permitted the following facilities in stages:

I.23 With effect from December 2001, exporters and importers have been permitted to book forward contracts on the basis of past performance (without production of any underlying document evidencing transactions at the time of booking the contract). Eligible limits were gradually raised to enable corporates greater flexibility. Initially, forward contracts booked, in the aggregate, could not exceed the average of the previous three financial years' turnover. This was subject

to the condition that at any point of time forward contracts so booked and outstanding could not exceed 25 per cent of the eligible limit, within a cap of US$100 million. The eligible limit itself was amended to mean the average of the previous three years' turnover or the previous year's turnover, whichever was higher. The US$100 million cap was then done away with and the cap of 25 per cent gradually increased such that today contracts booked and outstanding can be 100 per cent of the eligible limit. The limits are computed separately for export and import contracts. Documents are required to be furnished at the time of maturity of the contract. Contracts booked in excess of 25 per cent of the eligible limit have to be necessarily delivered. This relaxation has proved very useful to exporters of software and other services since their projects are executed on the basis of master agreements with overseas buyers which usually do not indicate the volumes and tenor of the exports.

I.24 Corporates have been given freedom to choose the currency of hedge irrespective of the currency of the exposure.

I.25 When cross currency options were introduced in 1994, it being a new product, it was stipulated that an option once cancelled could not be rebooked. In other words, once a corporate chose to exit from the option, this product was not available to hedge the exposure again. This restriction was removed in 1996 and corporates were given complete freedom on par with forward contracts to book and cancel cross currency option contracts.

I.26 Use of derivatives to manage the risk of external commercial borrowings required prior permission of Government of India till August 1996. This requirement was withdrawn subsequently and the banks given full freedom to offer any derivative product or combination thereof to the corporates subject to the condition that there was no net receipt of premium nor was the structure a leveraged one.

I.27 In many businesses, contracts are denominated in foreign currency but settled in Indian Rupees. Recognizing the exposure of corporates with this invoice pattern, Reserve Bank allowed residents to enter into forward contracts with ADs to hedge such transactions. The hedge contracts are required to be held till maturity

and cash settlement to be made on the maturity date by cancellation of the contracts.

I.28 In 1998, residents in India, engaged in export/import trade, were permitted to hedge the attendant commodity price risk in international commodity exchanges/ markets using exchange traded as well as OTC contracts. The onus of ensuring that the hedge undertaken by these entities is in the nature of an offset hedge and not a price-fix hedge lies on the AD who is also required to ensure that every contract is backed by an underlying. The oil sector was initially excluded; necessary permission was accorded with Government concurrence in 2000. Given the fact that domestic prices are inextricably linked to the international prices of oil which are volatile, and since there is a time lag between procurement of crude oil and sale of petroleum products, oil refining companies were permitted to hedge their refining margins too. A refining margin allows refineries to lock in the differential between refinery input and output prices, and profit or protect against changes in that value. This approval allows refineries to hedge their margins against both export and domestic sales of all petroleum products produced out of imported crude. A major oil producer has even been permitted to hedge the price risk on crude oil, natural gas and other petroleum products produced/sold by it in India.

I.29 External Commercial Borrowings (ECBs) have been a source of funds for many Indian corporates. General permission has been given to ADs for approving ECBs of their customers up to a limit of US $ 500 million, subject to post facto reporting to Reserve Bank. This has been a major step towards freeing of capital controls. However, there are restrictions on the end-use of such funds- for example, they cannot be utilised towards rupee working capital purposes or for replacing existing rupee debt. Financial intermediaries have to seek prior approval of Reserve Bank for availing ECBs. Freedom has also been given to borrowers for prepayment of ECBs under certain terms and conditions.

I.30 Once banks were permitted to lend in foreign currency to resident corporates from their pool of non-resident deposits, corporates availed of this facility in good measure. During the last couple of years, there was large demand from

corporates, both big and small, for loans denominated in foreign currency. It is understood that many banks had lent out their entire corpus of foreign currency deposit liabilities and were generating additional foreign currency funds through swaps in the foreign exchange market to meet the demands of their customers. Foreign currency exposures assumed in this way were left largely unhedged by many corporates in the belief that rupee would continue to appreciate and LIBOR would remain low. This had systemic implications and Reserve Bank had to draw attention of the banks to the need for hedging foreign currency exposures.

Non-residents

Non-Resident Indians

I.31 Non-resident Indians are permitted to place deposits in foreign currency with ADs where the exchange rate risk is borne by the banks. Earlier, the foreign currency funds thus mobilised remained invested overseas to a large extent. Subsequently, banks were permitted to lend in foreign currency to resident corporates from out of this pool of non-resident deposits.

I.32 ADs are permitted to enter into forward contracts with rupee as one leg with NRIs to hedge the amount of dividend due to them on shares held in Indian companies, balances held in FCNR (B) and NRE accounts, as also the amount of investment made under Portfolio Investment Scheme. With regard to balances in FCNR (B) accounts, cross currency (not involving the rupee) forward contracts are also allowed to be booked to convert the balances in one foreign currency to another foreign currency in which FCNR (B) deposits are permitted to be maintained.

Foreign Direct Investments

I.33 ADs are permitted to enter into forward contracts with residents outside India to hedge their investments made in India since January 1, 1993, subject to verification of the exposure in India, as also the dividend receivable on their investments.

I.34 Residents outside India are permitted to enter into forward sale contracts with ADs to hedge the currency risk arising out of their proposed foreign direct

investment in India. Such contracts, if cancelled, are not eligible to be rebooked for the same inflows and exchange gains, if any, on cancellation, are not allowed to be passed on to the overseas investor.

Foreign Institutional Investors

I.35 Foreign Institutional Investors (FIIs) have been permitted to hedge the market value of their entire investment in equity and/or in debt in India. While there is no absolute limit on the amounts that FIIs can invest in equity subject to sectoral caps, FIIs, as a whole, can invest only up to US$ 1.75 billion in Government securities and Treasury Bills and US$ 500 million in corporate debt.

Holding of Government securities by non-residents beyond a reasonable limit is neither feasible nor advisable in the present situation. The reason is that if all controls on portfolio debt flows are removed there should be convergence between domestic and foreign interest rates, subject to a country risk premium. Convergence of interest rates would happen only if there is a convergence between domestic inflation and foreign inflation, currently in the range of 2-3%. Achieving this kind of low inflation in India would be incompatible with the medium- term target growth rate of 7-8% per annum. In other words, interest rate in India will continue to be much higher than in the developed countries and this would attract huge capital flows if restrictions on portfolio debt flows are removed. Upward bias in interest rate is also caused by high fiscal deficit and buoyant private sector demand for borrowing. Further opening up of the Government securities market to non-residents would, therefore, be contingent upon significant reduction in fiscal deficit on a sustainable basis.

Further, on account of the clear arbitrage avenues available at the short-end, it bears examination whether non-resident investment in Government securities could be severely restricted in the short-end. There is a view that investment could be restricted to the medium and long end of the yield curve. Similarly, opening of the corporate debt market to non-residents may also not be advisable from the point of view of financial stability and considerable sensitivity to higher interest rate volatility.

(C) Derivative Products

I.36 One of the recommendations of the Sodhani Committee was that ADs should be permitted to offer all types of derivative products, subject to their putting in place comprehensive risk management systems on the basis of Reserve Bank guidelines. It was also recommended that an association of professionals or FEDAI should put in place uniform documentation and market practices for derivative products. The following products are currently transacted by Indian banks:

I.37 Forward contracts

Forward contracts have been in use in India for a very long time. While booking of forward contracts is only possible based on underlying genuine exposures, corporates were given complete freedom in 1992 to actively hedge their exposures by freely booking and cancelling forward contracts. When a forward contract is cancelled, the difference is cash-settled. It thus has elements of an NDF contract. The important difference is that, while booking a forward contract, the existence of an underlying is a pre-requisite, whereas the same is not required when booking an NDF contract. In other words, freedom to book and cancel forward contracts has elements of an NDF contract ex-post, whereas ex-ante the two are not comparable. In the wake of the SE Asian crisis, it was observed that the freedom to freely cancel and rebook forward contracts was being misused. This facility was, therefore, withdrawn except for export transactions. The facility has since been restored in respect of all transactions of residents with a residual maturity upto one year. Export contracts beyond one year can also be freely cancelled and rebooked. However, forward contracts entered into by non-residents, once cancelled, cannot be re-booked. While the forward market is very liquid up to one year, the volume of long term forward contracts has also increased over the years.

I.38 Foreign Currency Options

Banks in India were allowed to write cross-currency options on fully covered back-to-back basis from 1994. In 1996, banks were accorded freedom to offer cost reduction strategies, such as range forwards and ratio range forwards, subject to the important condition that corporates do not receive premium on a net basis.

As part of developing the derivative market in India and adding to the spectrum of hedge products available to residents for hedging currency exposures, foreign currency/rupee options were introduced in July 2003. The product complements the spot and forward FX markets to provide the complete universe of hedging products to market participants. The product allows the user to hedge her currency risk without sacrificing the up side of the currency movement. For this right, an upfront premium has to be paid by her to the AD.

All ADs having a minimum CRAR of 9 per cent are allowed to sell rupee options to their customers on back-to-back basis. Select ADs satisfying specified financial criteria and having the necessary expertise and systems, are permitted to be market makers and run a foreign currency/rupee option book after obtaining a one-time approval of Reserve Bank. To begin with, 11 banks were given such permissions. Currently, there are 14 banks acting as market makers for foreign currency/rupee options.

Only plain vanilla European options or combinations thereof are permitted to be used. End users are not permitted to be net receivers of premium. The volumes are not much and bid-offer spreads are quite wide, indicating that the market is not very liquid yet. However, it is only to be expected that a non-linear product such as the option would have a sedate start. Most of the interest has been for zero cost structures, involving simultaneous purchase and sale of options in such a way that corporates are not net receivers of premium. Most of the corporates using foreign-currency rupee options are located in metros. Many corporates in non-metros are not adequately comfortable with the product yet. FEDAI and the market-makers themselves have organised seminars and training programmes to disseminate knowledge about the product.

One of the main constraints hindering the development of the options market is stated to be the fact that corporates are not permitted to write/sell options. If corporates with underlying exposures are permitted to write/sell covered options, this would lead to increase in market volume and liquidity. Further, no public sector bank is a market maker in the product. For the product to be available to the SME sector,

it is imperative that public sector banks should develop the necessary infrastructure and expertise to run option books.

I.39 Swaps

A person resident in India who has borrowed in foreign currency is permitted to enter into an interest rate swap, currency swap, coupon swap, cross currency option, interest rate cap or collar purchase or forward rate agreement (FRA) with an AD or with a branch outside India of an AD or with an OBU for hedging her loan exposure and unwinding from such hedges. These products were permitted so long as they did not have rupee as one of the currencies.

A beginning for rupee based derivatives was made in India when in April 1997 Reserve Bank permitted banks to offer foreign currency/rupee swaps to corporates wishing to actively manage their foreign exchange exposures. Once this was permitted, the market has seen contracts even up to 7-10 years, whereas earlier a price beyond 6 months was virtually unheard of. The product also became popular among rupee borrowers who opted to acquire foreign currency liability when the US dollar interest rates started moving down and the rupee depicted an appreciating trend against the US currency. Currently, no limits are placed on ADs for undertaking swaps to facilitate corporates to hedge their foreign exchange exposures; a limit of US$50 million per AD is, however, fixed for net supply in the market on account of swaps enabling corporates to move from rupee to foreign currency liability. It may be noted that this is the only foreign exchange derivative product which is allowed to be used by entities with no foreign currency exposures to begin with.

There are currently 15 ADs actively managing foreign currency/rupee swap books. The notional principal amount of swaps undertaken during the month of April 2004 (information collected as part of the BIS Triennial Survey) was US$ 2096 million. Current regulations do not permit rebooking of cancelled swaps nor can exposures arising on account of swaps enabling a corporate to move from rupee to foreign currency liability (derived exposures) be hedged.

I.40 Regulatory and accounting convergence in respect of derivatives

The derivatives mentioned above and combinations thereof are permitted to be transacted in the Indian forex market. Interest rate swaps, forward rate agreements and exchange-traded interest rate futures are currently available for hedging the rupee interest rate risk in the books of banks and corporates. There are regulatory disparities in the permissible structures of rupee and forex derivatives. For instance, a limit of US$ 50 million per AD is placed for net supply in the market on account of foreign currency/rupee swaps whereas there are no such limits in place for rupee/rupee swaps. Further, there is a limit of 25% of Tier I capital (or US$10 million) up to which banks are permitted to borrow overseas.

The current regulatory approach toward derivatives involving foreign currency/rupee has been shaped by the considerations of (i) existing restrictions on capital account (ii) impact on the local forex market (iii) encouraging use of derivatives for risk reduction or hedging, etc. While optionality is permitted to be built into the pricing of foreign currency/rupee swaps (so long there is no increase in risk or net receipt of premium), structures having option elements, such as caps and collars, are not permitted in the case of rupee interest rate swaps. On the other hand, while foreign currency/rupee swaps cannot be rebooked on cancellation, there is no such restriction for rupee interest rate swaps. The restriction on foreign currency/rupee swaps has been placed to ensure that excessive cancellation and rebooking does not add to the volatility of the rupee.

These restrictions have been put in place on account of prudential considerations and the fact that India is not convertible on the capital account. Till such time as capital account restrictions are in place, it would be desirable to maintain differential regulations with respect to rupee interest rate derivatives and forex derivatives. In respect of structured products, the regulation needs to be so framed in order to ensure that residents are not able to circumvent the applicable restrictions on accessing the ‘underlying cash’ market abroad through derivatives. In other words, regulation should examine the permissibility of all the individual elements comprising any structured product. Further, while derivatives involving at

least one foreign currency have a clear legal standing under FEMA, there is some legal ambiguity in regard to OTC rupee derivatives.

As regards the accounting treatment for derivatives, there should be full convergence between all types of derivatives and also amongst banks and corporates. The objective here is to stop all incentives to drive any wedge between on-balance sheet and off–balance sheet items. Moreover, there is a need to put in place objective conditions to determine whether a derivative is in the nature of a hedge or not. Wherever the derivative is in the form of a hedge, the accounting treatment should be the same as for the underlying. Consequently, the Group has recommended that derivatives accounting norms on the lines of IAS 39 should be introduced for adoption by banks and corporates alike.

Recommendations of the Sodhani Committee– Status.

I.41 Most of the recommendations, including the setting up of the Clearing Corporation of India Ltd. which conducts inter-bank forex clearing and settlement operations, among other activities, have been implemented and have had a beneficial impact on the market. Recommendations which have not been implemented chiefly relate to accounting of derivative transactions and disclosure norms. The ICAI is still in the process of formulating them. Second, laws relating to withholding tax are still not unambiguous. Third, the recommendation that all market participants should put in place risk management policies and internal control systems before being allowed to transact in forex and interest rate derivative products, has not been followed in practice. Few corporates have an appropriate risk management policy and systems in place. Banks frequently report that they find it very difficult to obtain these policies. Further, even from corporates that have such policies in place, they find it difficult to obtain a review report and annual audit report, as required under the extant regulations.

I.42 **Enabling Environment for Reforms in the Forex Market**

The approach towards financial sector reforms in India has been cautious with appropriate sequencing of reform measures, mutually reinforcing norms, complementary reforms across sectors (e.g., monetary, fiscal and external sector),

and development of financial institutions and markets. In order to embark upon further deregulation of the foreign exchange market, including relaxation of capital controls, an enabling environment is needed for the reforms to proceed on a sustainable basis. It is in this context that liberalisation of various sectors has to proceed in tandem to derive synergies of the reforms encompassing multiple sectors.

The Indian approach to opening the external sector and developing the foreign exchange market in a phased manner from current account convertibility to the ongoing process of capital account liberalisation is perhaps the most striking success relative to other emerging market economies. The move towards a market-based exchange rate regime in 1993 and the subsequent adoption of current account convertibility were the key measures in reforming the Indian foreign exchange market. Reforms in the foreign exchange market focused on market development with prudential safeguards without destabilising the market. Authorised Dealers of foreign exchange have been allowed to carry on a large range of activities. Banks have been given large autonomy to undertake foreign exchange operations. In order to deepen the foreign exchange market, a large number of products have been introduced and entry of newer players has been allowed in the market. Full convertibility on the current account and extensive liberalisation of the capital account transactions have facilitated not only transactions in foreign currency, these have enabled the corporates to hedge various types of risks associated with foreign currency transactions.

A comparative analysis of the crucial reforms pending in various sectors provides an idea of the complementary sectoral reforms required for the success of external sector reforms. The foremost challenge to the external sector reforms arise from the persistence of large fiscal deficit and debt. Large fiscal deficit has the potential of making the foreign exchange market vulnerable in a liberalised capital account regime. A conducive environment for further reduction in capital account restrictions, thus, necessitates reduction of fiscal deficit and debt stock to more sustainable levels as the first order condition. The banking sector is still vulnerable to the possibility of rise in non-performing assets (NPAs), though the magnitude of

such NPAs has come down significantly in recent years. More particularly, the financial institutions still carry large burden of NPAs. The pace of enduring liberalisation of foreign exchange market is determined by the robustness of the banking system. Further, the liberalisation of foreign exchange transactions is to be aligned with price alignments in the form of tariff structure, which are still higher in India vis-à-vis the East Asian countries.

The enabling environment also encompasses harmonisation of reforms in the financial sector with the real sector, where the issues relating to reforms in labour market, de-reservation for SSIs and liberalisation of sectoral caps on FDI remain to be resolved. Importantly, large gaps exist in demand-supply of infrastructure services such as transportation, electricity, ports etc., where regulatory and procedural hurdles, pricing and user charges are crucial for attracting foreign investment and ensuring export competitiveness of the Indian industry. It needs to be emphasised that sound macroeconomic policies and a competitive domestic sector improve the capacity of the economy to absorb higher capital inflows, reduce the cost of capital, translate external inflows into higher investment levels and provide cushion against unexpected shocks in more liberalised external markets.

Table: Important Sectoral Reforms	
Sector	**Current Status**
Fiscal Sector	Gross fiscal deficit of the combined Government sector in India amounted to 9.4 per cent of GDP, which puts India in the category of high fiscal deficit countries. Combined Debt of Central and State Governments has risen to 76.7 per cent of GDP at end-March 2004 from 61.7 per cent at end-March 1991.
Banking Sector	Although the Gross Non Performing Assets (NPA) as ratio to gross advances for scheduled commercial banks has come down from 11.4 per cent at end-March 2001 to 7.2 per cent at end-March 2004, it still remains a concern from the viewpoint of financial stability. Net NPAs are still around 6 per cent. NPA levels for financial institutions (term lending financial institutions) continue to be relatively high. Technological intensity is one area where significant catching up is required, notwithstanding the rapid strides made over the last few years. Improving recovery-management is an area requiring expeditious and effective actions in legal, institutional and judicial processes.
Interest Rate	Interest rate differentials between India and major developed countries are positive and this will continue to remain so in the foreseeable future, given higher inflation rate and high fiscal deficit of the country. This leaves open the scope for large and volatile capital inflows.
Debt Market	The private corporate debt market, in the absence of a well functioning secondary market, remains illiquid.
Tariffs	Liberalisation of foreign exchange transactions is to be aligned with price alignments in the form of tariff structure. Peak tariff level for India is presently at 20 per cent, which is much higher than that of 5 per cent for the East Asian countries.
Industrial Sector	Continued reservation for small-scale industry conflicts with the objective of efficiency and the higher competitive pressures. Entry/exit restrictions continue to exist. Foreign Direct Investment (FDI) in various sectors/industries is guided by sectoral caps. Labour laws such as Contract Labour Act are not in synchronization with the objective of inculcating flexibility in labour market to maximize efficiency and promote growth.
Infrastructure Sector	Large gaps exist in demand-supply of infrastructure services such as transportation, electricity, ports etc. Regulatory and procedural hurdles, pricing/user charges and cross subsidy in infrastructure sector ultimately impact on competitiveness of Indian manufacturing.

Annex II
Cross-country Experiences in Development of Foreign Exchange Markets

Introduction

II.1 The decade of the 1990s was characterised by remarkable developments in emerging market economies (EMEs) towards shift to flexible exchange rate regime, opening up of capital account and integration of their domestic financial markets with the global system. This was a reflection of conscious efforts in this direction either as an integral part of the overall process of liberalisation or was prompted by an adjustment mechanism initiated in the wake of financial crises. Despite a series of crisis that marred the EMEs in the decade bygone, the private capital flows to these countries resumed, their currency markets recovered quickly and investors' confidence regained as the adjustment process progressed. Alongside there has also been a perceptible policy shift towards reorientation of their financial markets in terms of availability of a wide range of new products and instruments, development of institutional and market infrastructure, and realignment of regulatory structure consistent with liberalised operational framework. Reflecting the impact of increasing integration with the global system, the domestic foreign exchange markets of these economies have started to play an important role in transmission of global financial market developments to other segments of domestic financial markets. The changing contours of foreign exchange markets are mirrored in a rapid expansion in terms of participants, innovation in products, rising transaction volumes and reduction in transaction costs and more efficient mechanism of risk transfer.

II.2 At the global level, the policy measures relating to development and liberalisation of foreign exchange markets particularly in EMEs are to be seen from the perspective of their bringing about market efficiency while providing adequate safeguards from the point of view of market and financial stability issues. It is held that a floating and market-determined exchange rate system facilitates efficient functioning of foreign exchange markets by adding depth and providing liquidity to these markets. This, by itself, may not be sufficient until and unless operational and regulatory environment is aligned suitably. The process of foreign exchange market

liberalisation generally speeds up with an increasing move towards the capital account liberalisation and the resultant shift to a more liberal approach towards investment flows. However, the regulators prefer to tread carefully in providing freedom to market players in the use of risk management instruments particularly derivatives. The cautious stance is in view of the role played by the excessive use or misuse of derivatives in exacerbating the financial crises in a number of EMEs including Mexico, Russia, Brazil and East Asian countries.

II.3 Derivatives have in-built features to provide leverage to both hedgers and speculators. This leverage not only reduces the cost of capital for taking positions but also the cost of taking on price exposure and in the process encourages greater speculation. This tendency can be quite destabilising for financial markets in times of external shocks. The empirical evidence shows that the use of derivatives is considered more risky from the point of view of their potential for increasing credit risk. Apart from these considerations, the regulators seem to be even more concerned on account of the fact that derivatives appear to have been used to manipulate accounting rules and financial reporting requirements, and to circumvent prudential market regulations in several counties. Empirical evidence also corroborates the view that derivatives allow financial institutions to change the shape of financial instruments in such a way as to circumvent financial regulations in a fully legal way (Steinherr 1998). The task of regulators becomes even more difficult as the increasing use of derivatives makes the full disclosure of relevant information, or at least the full interpretation of the disclosed information, even more difficult (Stiglitz, 1998)[1]. From the viewpoint of transparency, the precise measurement of risk exposure itself becomes intricate as the risk shifts to off-balance sheets of players with the use of derivatives (Randall Dodd, 2003).

II.4 In the Indian context, the foreign exchange market development and liberalisation measures have been implemented in a phased manner. These measures have broadly been in line with the pace of liberalisation in other segments of financial markets. The emphasis has no doubt been on the simplification of rules and operational guidelines and dismantling the regulations that impede operational

[1] Stiglitz, Joseph E 1998, “Sound Finance and Sustainable Development in Asia”, Keynote address to the Asia Development Forum, Manila, Philippines.

efficiency. The initiatives towards enhancing market transparency have also been equally significant. This entire process implemented in an orderly manner has, of course, contributed significantly to an increasing integration of domestic financial markets on the one hand, and the integration of domestic financial markets with the global financial system on the other.

II.5 Against the above backdrop, an analysis of some important issues that emerge for future development of Indian foreign exchange market keeping in view the experiences of other EMEs. The selection of these issues has also been guided by the responses of market participants in their interaction with the RBI. As a prelude, Section II sets out the background in terms of development of foreign exchange markets the world over in the 1990s. Section III provides a summary of exchange rate regimes prevailing in various countries including the emerging market and developing countries. Section IV deals with the regulatory requirements including the need for documentation for carrying out the forex transactions, particularly the derivative transactions, open foreign exchange position of banks and regulatory restrictions on non-resident holding of deposit accounts, resident holding of foreign currency accounts and borrowings by non-resident entities in domestic markets. Country practices regarding hedging of commodity exposures are outlined in Section V. Market structure issues, such as, Over-the-Counter (OTC) *versus* exchange-traded derivatives, features of derivative exchanges in Mexico, Brazil and Russia, and country practices in respect of on-shore/off-shore non-deliverable forwards (NDFs), are analysed in Section VI. Section VII provides the concluding observations and specific inferences that can be drawn from the country experiences.

Section II: Foreign Exchange Markets at the Global Level

II.6 Aided by technological breakthroughs, the rapid growth in investment funds and financial flows, daily trading volume in foreign exchange markets at the global level more than doubled to US $ 2,408 billion in 2004 from US $ 1,076 billion in 1992. It is estimated that less than a small percentage of all foreign exchange transactions is directly related to the needs of importers and exporters while the remaining involve financial flows related to investments and profit-seeking

transactions. Adjusted for local and cross-border double counting, the global foreign exchange market turnover increased from a daily average of US $ 820 billion in 1992 to US $ 1,880 billion in 2004. Within the traditional foreign exchange transactions, the share of spot turnover continued to decline steadily till 2001, before showing a reversal in 2004 while the share of foreign exchange swaps remained significantly higher vis-à-vis outright forwards (Table II.1).

Table II.1 Global Foreign Exchange Market Turnover[2]

Daily averages in April, in billions of US dollars

Instrument	1989	1992	1995	1998	2001	2004
Spot transactions	317	394	494	568	387	621
Outright forwards	27	58	97	128	131	208
Foreign exchange swaps	190	324	546	734	656	944
Estimated gaps in reporting	56	44	53	60	26	107
Total 'traditional' turnover	590	820	1,190	1,490	1,200	1,880

Source: BIS, Triennial Central Bank Survey, 2004

II.7 Details of geographical distribution of reported foreign exchange turnover along with instrument-wise details for 2004 are set out in Tables II.2 and II.3.

II.8 Geographical distribution of foreign exchange turnover by instruments reveals that foreign exchange swaps account for more than 50 per cent of total turnover

[2] Adjusted for local and cross-border double counting. These data are not comparable with data in Table II.2 that adjusts for only local double counting.

Table II. 2:Geographical Distribution of Reported Foreign Exchange Market Turnover[3]

Daily averages in April, in billions of US dollars

	1992		1995		1998		2001		2004	
Country	Amount	Share (%)	Amount	Share (%)	Amount	Share (%)	Amount	Share (%)	Amount	Share (%)
UK	291	27	464	29.5	637	32.5	504	31.2	753	31.3
USA	167	15.5	244	15.5	351	17.9	254	15.7	461	19.2
Japan	120	11.2	161	10.2	136	6.9	147	9.1	199	8.3
Singapore	74	6.9	105	6.7	139	7.1	101	6.2	125	5.2
Germany	55	5.1	76	4.8	94	4.8	88	5.5	118	4.9
Hong Kong	60	5.6	90	5.7	79	4.0	67	4.1	102	4.2
Australia	29	2.7	40	2.5	47	2.4	52	3.2	81	3.4
Switzerland	66	6.1	87	5.5	82	4.2	71	4.4	79	3.3
France	33	3.1	58	3.7	72	3.7	48	3.0	64	2.7
Canada	22	2.0	30	1.9	37	1.9	42	2.6	54	2.2
Russia	-	-	-	-	7	0.4	10	0.6	30	1.2
Korea	-	-	-	-	4	0.2	10	0.6	20	0.8
Luxembourg	13	1.2	19	1.2	22	1.1	13	0.8	14	0.6
Mexico	-	-	-	-	9	0.5	9	0.5	15	0.6
South Africa	3	0.3	5	0.3	9	0.5	10	0.6	10	0.4
India	-	-	-	-	2	0.1	3	0.2	7	0.3
Taiwan	-	-	-	-	5	0.3	4	0.3	8	0.3
Brazil	-	-	-	-	5	0.3	5	0.3	3	0.1
Chile	-	-	-	-	1	0.1	2	0.1	2	0.1
Indonesia	-	-	-	-	2	0.1	4	0.2	2	0.1
Malaysia	-	-	-	-	1	0.1	1	0.1	2	0.1
Thailand	-	-	-	-	3	0.2	2	0.1	3	0.1
Argentina	-	-	-	-	2	0.1	-	-	1	0
China	-	-	-	-	0	0	0	0	1	0
Philippines	-	-	-	-	1	0.1	1	0.1	1	0
Total	**1,076**	**100**	**1,572**	**100**	**1,969**	**100**	**1,618**	**100**	**2,408**	**100**

Source: BIS, Triennial Central Bank Survey, 2004

[3] Net of local inter-dealer double counting.

Table II. 3:Geographical Distribution of Reported Foreign Exchange Market Turnover[4]
Daily averages in April, in billions of US dollars, April 2004

Country	Total foreign exchange turnover	Spot foreign exchange turnover	Outright foreign exchange turnover	Foreign exchange swap turnover
UK	753	223	103	428
USA	461	217	61	183
Japan	199	53	21	125
Singapore	125	43	11	72
Germany	118	36	12	70
Hong Kong	102	36	5	61
Australia	81	26	5	50
Switzerland	79	23	7	49
France	64	13	5	46
Canada	54	18	4	32
Russia	30	24	0	5
Korea	20	10	4	6
Luxembourg	14	3	2	10
Mexico	15	11	1	3
South Africa	10	2	0	8
India	7	3	1	2
Taiwan	8	5	1	2
Brazil	3	3	0	0
Chile	2	2	1	0
Indonesia	2	1	0	1
Malaysia	2	1	0	0
Thailand	3	1	0	1
Argentina	1	1	…	…
China	1	1	…	…
Philippines	1	0	0	0
Total	**2,408**	**829**	**260**	**1,318**

Source: BIS, Triennial Central Bank Survey, 2004

[4] Net of local inter-dealer double counting.

Section III: Exchange Rate Regimes

II.9 Foreign exchange market development and liberalisation measures have generally coincided with a shift to more flexible exchange rate regimes in several EMEs in the 1990s. In the East Asian countries (Thailand, South Korea, Philippines, Indonesia), it is the financial crisis-driven situation that made them abandon fixed/intermediate (crawling bands) exchange rate regimes and experiment with intermediate/free floating exchange rate regimes with varied degree of flexibility. Mexico and Brazil also moved over from intermediate to free float exchange rate system in similar circumstances. Russia showed a transition from a pegged exchange rate system to an intermediate regime in 1998. The Philippines switched over to an intermediate regime under crisis-driven situation in 1997 but its move to free float in 2000 was voluntary. Out of 187 IMF member countries in 2004, 84 had either managed floating or independently floating exchange rate regimes (Table II.4). Available data show that foreign exchange market turnover grew in EMEs that adopted more flexible exchange rate regimes (IMF, 2004).

Table II.4: Exchange Rate Arrangements

	Exchange Rate Arrangement	Name of country	No. of Countries
1.	Exchange arrangement with no separate legal tender	Ecuador; El Salvador; Kiribati; Marshall islands; Micronesia; Palau; Panama; San Marino; Timor-Leste; Antigua and Barbuda; Dominica; Grenada; St Kitts & Nevis; St. Lucia; St Vincent; Benin; Burkina Faso; Cote d'Ivoire; Guinea Bissau; Mali; Niger; Senegal; Togo; Cameroon; Central African Republic; Chad; Congo; Gabon; Austria; Belgium; Finland; France; Germany; Greece; Ireland; Italy; Luxembourg; Netherlands; Portugal; Spain;	41
2.	Currency board arrangements	Bosnia and Herzegovina; Brunei; Bulgaria; China-Hong-Kong SAR; Djibouti; Estonia; Lithuania;	7
3.	Other conventional fixed peg arrangement	Aruba; Bahamas; Bahrain; Barbados; Belize; Bhutan; Cape Verde; China PR; Comoros; Eritrea; Guinea; Jordan; Kuwait; Lebanon; Lesotho; Macedonia; Malaysia; Maldives; Namibia; Nepal; Netherlands; Oman; Qatar; Saudi Arabia; Suriname; Swaziland; Syria; Turkmenistan; Ukraine; UAE; Venezuela; Zimbabwe; Botswana; Fiji; Latvia; Libya; Malta; Morocco; Samoa; Seychelles; Vanuatu;	41
4.	Pegged exchange rate within horizontal bands	Denmark; Cyprus; Hungary; Tonga;	4
5.	Crawling Pegs	Bolivia; Costa Rica; Nicaragua; Solomon Islands; Tunisia;	5
6.	Exchange Rates within crawling bands	Belarus; Honduras; Israel; Romania; Slovenia	5

7.	Managed floating with no pre announced path for the exchange rate	Bangladesh; Cambodia; Egypt; Ghana; Guyana; Indonesia; Iran; Jamaica; Mauritius; Sudan; Zambia; Czech Rep.; Peru; Thailand; Argentina; Azerbaijan; Croatia; Ethiopia; Georgia; Haiti; Kenya; Kyrgyz Rep.; Lao; Moldova; Mongolia; Mozambique; Pakistan; Rwanda; Serbia and Montenegro; Tajikistan; Vietnam; Afghanistan; Algeria; Angola; Burundi; Dominican Rep.; Gambia; India; Iraq; Kazakhstan; Mauritania; Myanmar; Nigeria; Paraguay; Russian Federation; Sao Tome; Singapore; Slovak Rep.; Trinidad and Tobago; Uzbekistan;	50
8.	Independently Floating	Malawi; Sierra Leone; Sri Lanka; Uruguay; Yemen; Australia; Brazil; Canada; Chile; Colombia; Guatemala; Iceland; Korea; Mexico; New Zealand; Norway; Philippines; Poland; South Africa; Sweden; Turkey; UK; Albania; Armenia; Congo Dem; Madagascar; Tanzania; Uganda; Japan; Liberia; Papua New Guinea; Somalia; Switzerland; USA;	34

Source: IMF, Annual Report on Exchange Arrangements and Exchange Restrictions, 2004

Section IV: Regulatory Requirements

II.10 The exchange rate flexibility exposes market participants to risks arising as a result of exchange rate fluctuations. The market risk assumes significance in globally integrated foreign exchange markets encouraging market participants to use risk management instruments. These instruments allow market participants to hedge their currency risks related to currency mismatches between assets and liabilities in an environment of exchange rate uncertainty. Availability of these instruments as also the freedom to use them depends on the existing exchange control/regulation environment in a country. The countries that have allowed their currencies to be convertible on current and capital accounts are liberal in terms of stipulation of operational guidelines although the monitoring aspects still remain crucial from the regulatory angle. Following the same analogy, the operational environment is relatively more flexible in countries with current account convertibility and open capital accounts. The exchange rate regimes do influence the regulatory framework when it comes to the issue of providing operational freedom to market participants in respect of their foreign exchange market operations. These issues are discussed in detail in the following sub-sections.

1. Documentation and Other Related Regulatory Requirements

II.11 The EMEs differ among themselves in terms of exchange rate regimes, degree of convertibility of their currencies and adoption of capital account convertibility. While there has been a distinct move towards greater exchange rate flexibility and financial sector liberalisation, many of them still have restrictive exchange control regimes and continue to tinker with the micro level aspects of foreign exchange market operations. A gradual liberalisation approach is generally preferred to keep it in line with the strengthening of policy framework and tightening of prudential norms against the risk of foreign exchange exposure. While the use of risk management instruments is encouraged for hedging of genuine exposure linked to real and financial flows, speculation is not acceptable in this framework. Foreign participation in local derivatives markets is more closely monitored and even restricted. The discipline in the market in countries with non-deliverable domestic currencies is generally sought to be achieved through the stipulation of documentation requirements for the use of risk management instruments. At the same time, some countries allow limited flexibility through fixation of minimum foreign exchange limit up to which documentation requirement is waived. Hong Kong and Singapore, with deliverable currencies, are even more liberal in allowing both onshore and offshore entities to access forex and derivative markets. South Korea and Chile also have fairly liberal operational regimes. Table II.5 provides details of documentary requirements in select EMEs.

Table II.5: Documentation and Other Regulatory Requirements for Residents/Non-Residents

Country	Documentation/Other Regulatory Requirements
Brazil	No documentation requirements, but for deliverable transactions, it is mandatory. Legally allowed derivative transactions are only simple debt and equity instruments and options; in the case of more complicated and over-the-counter products, prior negotiation with the financial authorities may be necessary in order to ensure registration. Derivative transactions are registered with the Brazilian Central Bank if these are used for hedging of international assets and liabilities. Foreign investors have access to domestic derivative markets.
Chile	All derivative products including NDFs are available onshore. Banks cannot offer currency options directly to their customers. Pension funds are important providers of foreign exchange hedging in the domestic market. Commercial banks can hedge their net positions offshore, if required.
China	Onshore entities can access the local forward market to cover current account transactions (subject to documentary proof such as invoices or trade agreements) and to hedge foreign currency loans borrowed from banks/an offshore entity or any other transaction approved by State Administration of Foreign Exchange (SAFE). Currency options are not available. Purchase, sale or issue of derivatives or other instruments by non-residents is not allowed. Residents are also not allowed to issue financial derivatives abroad. Financial institutions approved by the People's Bank of China who can engage in derivatives business include foreign banks mainland branches, mainland banks, trust and investment companies, financing companies, financial leasing companies and auto financing companies. They may purchase or sell derivative instruments for hedging purposes or for providing trading services to clients as a dealer or a market maker. However, they can purchase foreign financial derivatives and other instruments for hedging after having passed the inspection of qualification and exposure of foreign exchange position. Non-financial institutions may engage in such activities through financial institutions as part of their approved operations without prior approval. Prior SAFE approval is required if these transactions are made with foreign institutions.
Hong Kong	The HKD is freely tradable and convertible. Onshore spot, forward and currency option markets are available to onshore and offshore entities.
Indonesia	Onshore entities are free to access the local spot and forward markets and access the derivatives market without supporting documents for transaction value of up to IDR 100 million. Documentation verification is the responsibility of remitting banks and not of receiving banks. Onshore banks may have derivative transactions with non-residents in foreign currencies against the IDR up to a maximum notional amount of USD 3 million (or its equivalent) for each bank per day (cumulative limit) without any proof of the underlying economic activity. This restriction does not apply when currency exchange transactions are for investment activities in Indonesia. All IDR-related FX deals must be transacted with onshore banks.

Malaysia

Forward foreign exchange contracts with residents are for the purpose of any payments/receipts related to import/export of goods and services, and income (based on firm commitment or anticipatory basis), hedging the foreign currency exposure of permitted overseas investment including extension of credit facilities to non-residents, and any committed capital inflows/outflows including drawdown/repayment (within 24 months) of permitted foreign currency credit facilities.

Forward sales/purchases by residents of any foreign currency receivables/payment can be undertaken up to the tenor of the underlying transaction. Interest rate swap transactions of residents are required to be supported by firm underlying commitment. Currency options are not available.

On-shore licensed banks can enter into short-term currency swaps or forward MYR sales with non-residents to cover payment for share purchases on the Malaysian exchange (subject to firm commitment). The contracts are limited to maturity of up to 3 working days with no rollover option.

Mexico

Controls apply to Mexican financial institutions with respect to types of transactions they can enter into and amounts related thereto when it comes to purchases/sales abroad of derivatives. However, there are no documentation requirements for non-bank residents viz., individuals and corporates.

Philippines

Banks, non-banks with quasi banking functions (NBQBs) and their subsidiaries/affiliates authorised by the BSP enter into derivative contracts where either party to the transaction is hedging only eligible exposure. They can also engage in derivative transactions as end-users.

Forward sale of forex is allowed to cover obligations (deliverable and non-deliverable) arising on account of trade and non-trade (foreign currency loans owed to non-residents or Authorised Agent Banks (AABs) wherein the maturity portion of the outstanding eligible obligation is covered by a deliverable forward and the outstanding eligible obligation is covered by a non-deliverable forward subject to the documentary requirements) and inward foreign investments (outstanding amount of sale/maturity proceeds due for repatriation to non-resident investors pertaining to BSP registered investments). AABs are authorised to sell foreign exchange to residents every 20-calendar days for any non-trade purpose other than that related to foreign currency loan/investment without the need of appropriate documentation up to US $ 5,000. Registration for foreign currency investments is required if the foreign currency needed to service repatriation of capital or remittance of dividend and profits is to be sourced from the domestic banking system. Purchase of foreign exchange from local banks by residents for settlement of derivatives abroad is not permitted.

FX Swap transactions *viz.,* FX sale (first leg)/forward FX purchase (second leg) with non-bank counterparties are subject to the minimum documentary requirements for sale of FX for non-trade and trade transactions. For FX purchase (first leg)/forward FX sale (second leg) with non-bank counterparties, the first leg of the swap is subject to the institution's "Know Your Customer" policy and the AMLA guidelines and requires the conversion of foreign currency to pesos. The second leg of the swap transaction will be subject to the swap contract between the counterparties. The tenor/maturity of FX forwards (whether deliverable or non-deliverable) and swaps shall not be longer than the maturity of the underlying FX obligation or the approximate due date or settlement of the FX exposure, while the tenor of the deliverable FX forward in the case of foreign currency loans shall be co-terminus with the maturity of the underlying obligation.

Swap contracts involving the sale of foreign exchange by non-residents to banks as a first leg require BSP approval. Derivatives involving forward purchases of foreign exchange by non-residents are not allowed except for BSP registered foreign investments under certain conditions.

Russia

The purchase of hard currency by residents for any payments outside the country is on the basis of documentary proof. Purchase of derivatives abroad by residents is also permitted with prior Bank of Russia (BOR) authorisation.

Purchase of derivatives with foreign exchange by non-residents requires prior BOR authorisation.

Singapore

There are no restrictions in transacting Singapore dollar (SGD) spot, forward, asset swaps, foreign exchange options, cross-currency swaps, and repos in Singapore for residents. Banks are permitted to freely transact in Singapore dollar. However, they are required to submit monthly reports detailing all interest rate derivative transactions in excess of SGD 5 million with non-Singapore counterparties.

Non-resident financial entities are also allowed to transact freely in asset swaps, cross-currency swaps, and cross-currency repos, lend any amount of SGD-denominated securities in exchange for both SGD and foreign currency denominated collateral, transact freely in SGD foreign exchange options with non-resident entities (documentary proof was earlier required to show that SGD foreign exchange option transactions with non-resident entities were for hedging purposes).

South Korea

There are no documentation requirements for non-bank residents and non-financial foreign customers for underlying forex exposure. Forward and derivative transactions are no longer based on the 'real demand principle'. Non-bank financial institutions viz., securities, investment trust and insurance companies, etc. also participate in the inter-bank forex market. Financial institutions (other than banks and merchant banking corporations), firms and individuals are allowed to trade derivative products only with banks and merchant banking corporations, except in the case of certain demand-backed derivative transactions.

Instruments traded in the market include forwards, foreign exchange swaps, futures, options and credit derivatives. Transactions in financial futures are also allowed on internationally recognised financial futures exchanges. Residents' participation in international exchange-traded derivatives markets is required to be through foreign exchange banks, merchant banking corporations or licensed futures brokerage firms.

Foreign investors have access to onshore spot and forward markets provided that forex transactions are linked to actual investment in securities or bonds. No ceiling applies to sale of foreign exchange to a national resident. However, sale of foreign exchange to a non-resident is subject to the ceiling of foreign exchange sold by him since his last entrance date, or USD 10,000 (in case there is no evidence of sale of foreign exchange). Amounts exceeding these limits require declaration to the BOK. Non-residents' sale of foreign exchange over USD 20,000 without documentation details relating to acquisition requires declaration to the BOK.

Taiwan

Documentary proof is required for forex transactions onshore where the amount is equal to or more than USD 1 million. Prior approval is required for initiating a new foreign exchange derivative product, NTD exchange rate and domestic risk related products. Select banks are also allowed to offer structured products. Forward market was

	completely opened up in December 1996. In addition to forwards, futures, swaps and options are traded.
Thailand	There are no restrictions in the spot market. However, the Bank of Thailand only allows transactional exposures to be hedged. Proofs of foreign currency obligations are required for different transactions relating to trade, service fees, interest/loan repayment, profit/royalty repatriation, travel and education expenses. Thai state enterprises are allowed to freely hedge foreign currency debts regardless of maturity. Non-residents are allowed to sell USD forward with a tenor exceeding three months without any restriction. Transactions with a tenor of less than three months without any underlying transaction are subject to the limit of THB 50 million for borrowing by resident banks from non-residents.

Source: Asian Bond online (Asian Development Bank), HSBC and Central Bank websites of these countries.

II.12 Another operational issue relates to flexibility in establishment and lifting of hedges (booking, cancellation and re-booking of derivative contracts). Reversal of transactions along with netting is permitted in Mexico, Russia and Brazil. Thailand allows this flexibility as long as the underlying exposures are covered. In South Korea, there are no restrictions on residents so long as they trade with onshore banks.

II.13 Country practices also differ in respect of permission given to authorised banks (ABs)/authorised dealers (ADs) to engage in local currency/foreign currency derivative transactions with non-resident banks and non-banks. Mexico imposes no restrictions while Brazil allows foreign investors to trade any instrument that is available to residents (with the exception of investment in real estate, energy companies & airlines). South Korea permits it for all instruments except credit and commodity related products. In Russia, there are no formal limitations for conducting derivative transactions but the regulatory framework in respect of certain products like NDF contracts is perceived to be inadequate. Thailand allows such transactions only to the extent of underlying exposure.

2. Open Foreign Exchange Position of Banks

II.14 Central banks use the fixation/approval of net open foreign exchange position limits of banks as a prudential tool to contain the scope for their being used for assuming undue foreign exchange risks. The practice of imposition of limits on individual currency positions (and even differential limits depending on the currency)

has been on the decline while limits on banks' overall open positions either in absolute terms or linked to their capital base exist in several EMEs. In addition, the supervisory authorities have also started stipulating capital requirements against foreign exchange risk measured by the overall open positions or by the total foreign exchange risk based on the bank's internal risk model. The Basel Committee defined the size of a single currency position as the sum total of the net spot and the net forward position, guarantees/other instruments (certain to be called and likely to be irrecoverable) and net future income/expenses not yet accrued but already fully hedged (at the discretion of reporting bank). The overall foreign currency position, as per traditional measures of foreign exchange risk, is taken as the 'gross aggregate position' (*i.e*., the sum of all net short and all net long positions), or the 'net aggregate position' (*i.e*., the absolute value of all short positions less all long positions, or the 'shorthand position' (*i.e*., the greater of the sum of the short positions and the sum of the long positions). In some countries, distinction is also made between banks' overall long and overall short foreign exchange positions. These traditional measures are subject to the limitation that the correlation in movements between the various currencies is not fully taken into account. Further, foreign exchange risk is taken independently of other risks faced by banks. Given these limitations, the use of VaR models to estimate foreign exchange risk is gaining prominence.

II.15 IMF data reveals that in a sample of 41 countries for 2001, 23 imposed limits on overall positions and 13 on single currency positions. While 14 countries stipulated capital requirements against these limits, 13 had other types of measures. Further, overall open position limits ranged from 10 to 60 per cent of banks' capital. The limits relate to either overnight/end-week/end-month positions or need to be maintained continuously (and therefore more stringent). The limits assume significance in countries having non-deliverable currencies where the foreign exchange exposure of banks is subjected to prudential norms. In several countries, there are reporting rules on positions prescribed by the regulators/supervisors. In addition, banks are required by regulation to prepare a policy on internal controls, get it approved by their boards and have a monitoring mechanism to determine the effectiveness of internal controls on a regular basis through audit/inspection process.

Capital requirements against open positions have also been stipulated by developed as well as EMEs. Singapore does not restrict open positions but imposes capital requirement against these positions measured in terms of 'shorthand position'. This practice is seen in other developed countries e.g., in Spain and the Netherlands. In the US, the foreign exchange positions of banks, whether overall or individual currency, are not subject to quantitative limitations but banks are subject to prudential oversight. In addition, large foreign exchange market participants are required to report their holdings of five major currencies and dollars weekly, monthly, or quarterly basis. The details of restrictions on open positions in various EMEs are set out in Table II.6

Table II.6: Open Foreign Exchange Position Limits

Country	Open Limits
Brazil	Banks that are authorised to conduct foreign exchange operations may hold long positions up to the equivalent of US $ 6 million, including all currencies and all of each bank's branches. Amounts exceeding this ceiling have to be deposited with the Central Bank of Brazil in dollars. The ceiling on bank's short exchange position is unlimited, provided that the total amount of combined exposure in gold, assets, and liabilities in foreign exchange does not exceed 30 per cent of bank's base capital. Banks must increase capital by their open position over 5 per cent of capital. For licensed dealers, the ceiling on long exchange position is the equivalent of US $ 500,000 but no short exchange position is allowed.
Chile	The limit (net aggregate position) is 20 per cent of Tier I and Tier II capital and reserves. This limit includes derivative and spot instruments, foreign investment, and assets and liabilities issued abroad or denominated in foreign exchange.
China, People's Republic	For financial institutions trading foreign exchange on their own behalf, the daily total amount traded i.e., total open foreign exchange position should not exceed 20 per cent of the foreign exchange working capital. Financial institutions trading foreign exchange on their own behalf may retain a small amount of overnight open position, but this should not exceed 1 per cent of the foreign exchange working capital or foreign exchange operating funds.
Hong Kong SAR	The aggregate net overnight open position i.e., sum of net long/short position of individual currencies should not normally exceed 5 per cent (and, in any event, not more than 15 per cent) of the capital base of any institution, and the net 'overnight position' in any individual currency should not exceed 10 per cent of the capital base.
Indonesia	At the end of each business day, the total daily consolidated net open position (net aggregate position), including on and off balance sheet items and both onshore and offshore branches must not exceed 20 per cent of a bank's capital
Malaysia	Banks are subject to the net open position limit depending on bank capital and

	management.
Mexico	The Bank of Mexico allows short or long foreign exchange risk positions, which, both jointly and for each foreign currency at the end of each day, do not exceed 15 per cent of bank's net capital base. Total liabilities of commercial banks, denominated in or referred to foreign currency (excluding cash and highly liquid assets) must not exceed an amount equal to 183 per cent of the capital stock of the respective bank. Further, for all foreign currency liabilities with a maturity of up to 60 days, banks must maintain liquid assets.
Philippines	All depository banks within the foreign currency deposit system are required to maintain at all times 100 per cent asset cover for their foreign currency liabilities, of which 30 per cent must be liquid. For foreign currency deposit units (FCDU) of commercial banks and commercial banks with expanded derivatives authority, at least 70 per cent of the cover must be maintained in the same currency as the liability and 30 per cent in other acceptable foreign currencies. FCDUs of thrift banks must maintain foreign currency cover in the same currency as that of the corresponding foreign currency deposit liability. From March 13, 2003, the limit on a bank's long (overbought) foreign exchange position is 2.5 per cent of its unimpaired capital or equivalent of US $ 5 million, whichever is lower. Any excess must be settled daily. No limit applies on short (oversold) foreign exchange positions.
Russian Federation	The limit for commercial banks is 20 per cent of capital for all currencies and 10 per cent of capital for an individual currency or precious metal.
Singapore	The Monetary Authority of Singapore sets no limits, but it reviews the internal control systems of banks to ensure that adequate limits and controls are established for treasury activities.
South Korea	The overall net position (i.e., shorthand position) measured by the sum of the net short positions or the sum of the net long positions, whichever is greater, is limited to 20 per cent of the total equity capital at the end of the previous month. In addition, any over-bought (over-sold) foreign exchange position is restricted to 20 per cent of equity capital on the basis of the sum of the over-bought (over-sold) amounts in each foreign currency.
Taiwan	Authorised banks determine their own overbought and oversold positions subject to the approval of Bank of China from July 1996 onwards.
Thailand	The regulation on net foreign exchange exposure limits allows commercial banks to maintain positions in terms of their first-tier capital of no more than 15 per cent oversold or overbought. Thai commercial banks are required to include the foreign exchange positions of their foreign branches in the calculation of the open position. Foreign currency loans classified as doubtful of loss are to be included in the foreign exchange position net of provisions. Financial institutions must include irrevocable guarantees in foreign currency denominations that are within 3 months of maturity if the counter party has a loan account classified as doubtful, doubtful of loss or loss. They should not include loan accounts denominated in foreign currency and classified as doubtful of loss in the calculation of the net open position. The BOT allows financial institutions that have a high degree of system proficiency to use the present value method to calculate their forward positions with prior approval.

Source: IMF, Annual Report on Exchange Arrangements & Exchange Restrictions, 2004.

3. Deposits and Borrowings by Non-residents and Foreign Currency Deposits by Residents

II.16 Restrictions on each one of these have an impact on the foreign exchange markets. There is a policy preference to restrict local currency borrowing by non-residents as a precaution against domestic currency speculation. During the Asian Crisis of 1997-98, the facility to borrow in local currency, and offshore domestic currency markets were used to short-sell domestic currencies of Thailand, Malaysia and Indonesia. In Thailand, the non-resident baht accounts (NRBAs) were used as a means of speculative transactions during the first half of 1997. In view of the same, Thailand restricted short-term borrowing up to 3 months by non-residents without an underlying trade or investment transactions to THB 50 million per entity and imposed a limit on the outstanding amount of NRBAs at the end of the day of 300 million baht for each non-resident. Malaysia also restricts lending to, and forward and swap transactions with non-residents in the light of pressure that had been created on the ringgit in mid-1997. In Singapore, banks can lend to non-residents for investment purposes, and to fund offshore activities as long as the Singapore dollar (SGD) proceeds are swapped into foreign currency for use abroad. There is a maximum limit of SGD 5 million on lending of SGD to non-resident financial institutions[5]. For SGD proceeds used outside Singapore exceeding this amount, banks are required to swap or convert the proceeds upon drawdown. This restriction is part of the policy of non-internationalisation of the SGD. However, for non-resident, non-financial issuers of SGD bonds, the restriction relating to swap/conversion of the SGD proceeds into foreign currency before remitting abroad has been withdrawn. South Korea limits non-resident won funding and regulates local currency denominated bond issuances with maturity of less than one year. In Brazil, credits granted to non-residents are required to be registered with the central bank. Domestic currency accounts held by non-residents in some countries are subject to an upper limit on the amount that can be held by an individual depositor.

[5] Banks can lend up to SGD 5 million in the aggregate to non-bank non-residents if it is to be used for economic activities in Singapore or for hedging the exchange and interest rate risks arising from these economic activities.

II.17 In Brazil, banks are prohibited from granting foreign currency loans within the country. However, this restriction does not apply to on lending of external foreign currency loans. In Mexico, borrowing abroad by commercial banks is subject to the limits on their liabilities denominated in foreign currency, and open foreign exchange positions (Table II.7).

Table II.7: Restrictions on Borrowings and Deposits by Non-Residents and Forex Deposits by Residents

Country	Borrowings by Non-Residents in Domestic Currency[6]	Deposits Accounts by Non-Residents	Foreign Currency Deposits by Residents[7]
China	No. However, international financial institutions have been permitted to raise funds in renminbi for use offshore in 2004.	Yes (RMB accounts held by non-resident individuals without restriction). Foreign Direct Investors can hold both foreign exchange and RMB accounts.	Yes (both domestic and abroad). Approved domestic/foreign funded enterprises that have managed rights or earn foreign exchange from current transactions can open these accounts. Natural persons are allowed to open accounts with ABs. Domestic companies also allowed to retain their foreign currency revenue in FC accounts.
Indonesia	No (prohibits onshore banks to lend in IDR or foreign currencies. Local banks prohibited from purchasing securities issued in IDR by non-residents). Non-residents are not allowed to issue local currency denominated money market securities.	Yes (both IDR and foreign currency accounts [with some restrictions on cheque facility]).	Yes (both in Indonesia and abroad, allowed to transfer foreign currency funds abroad subject to restrictions).
Malaysia	Yes (both foreign currency	Yes (foreign currency accounts with	Yes (both domestically

[6] Excluding FDI/non-resident controlled companies and trade-related transactions.

[7] Mexico, Russian Federation and Singapore allow residents to hold domestic currency accounts abroad. Indonesia permits this facility to non-bank residents with some restrictions while prior MOFE notification is required in the case of Korea. However, China, Malaysia and Thailand do not allow residents to hold domestic currency accounts abroad.

	and MYR credit facilities [in the range of MYR 10,000-200 million depending on whether the lender/borrower is individual/stockbroker/ custodian bank][8]. Resident, bank or non-bank, is also allowed to extend credit facility up to a maximum of three immovable property loans in ringgit[9]. Multilateral development banks and foreign multinational corporations are allowed to issue MYR-denominated bonds[10].	licensed banks without restrictions, MYR accounts with no overnight or withdrawal limits but with some restrictions on sources of funds for credit into these accounts, and their use).	and abroad). Corporate residents can maintain FC accounts abroad up to the amount of their foreign currency receipts other than those arising from exports. Resident individuals (without funds abroad) can open FC accounts for meeting expenditure towards education and employment overseas, subject to limits.
Mexico	-	Accounts in domestic currency convertible to foreign currency are not permitted.	Yes (bank accounts may not be denominated in foreign currency except in a few cases for residents in border areas, embassies, consulates and international organisations, firms resident in Mexico and other firms (for payments abroad).
Philippines	Banks are prohibited from extending peso loans to non-residents. Prior approval or license requirement to issue all peso-denominated instruments in international capital markets.	Yes (foreign currency account and PHP accounts provided the latter are funded by inward remittances of foreign currency and by PHP income of non-residents).	Yes (both domestic and abroad).
Russia	-	Yes (bank accounts denominated in foreign currency and RUB accounts viz., 'K' accounts - funds are convertible into foreign currency with no repatriation requirements; N' accounts - funds are convertible into foreign currency over a year after a currency purchase order has been presented; 'F' accounts freely	Yes (domestically with ABs without restriction, and abroad subject to BoR approval except for deposits in OECD or FATF countries by resident natural persons provided these are not

[8] Prior permission required if the credit facilities extended to a non-resident exceed any permissible aggregate limit.
[9] Foreign Exchange Administrative Policies of the Central Bank effective April 1, 2005.
[10] Both issuers and non-resident investors allowed to hedge their foreign currency risks related to these bonds.

		opened by non-resident natural persons and freely convertible into foreign currency, and 'S' accounts - used for transactions in Russian securities denominated in RUB and repatriable only after being kept in a non-interest bearing transit account for a fixed period).	used for commercial purposes)
Singapore	Yes (Banks may arrange SGD bond issues for non-resident financial institutions).	Yes (SGD or foreign currency accounts with a bank without authorisation)	-
South Korea	Yes (KRW 1 billion ceiling on KWR-denominated loans to non-residents by banks and institutional investors {subject to notification to the BOK}). Issue of local currency-denominated bonds by foreign issuers requires notification to the Ministry of Finance & Economy (MOFE) and permission required if the maturity period is less than one year.	Yes (Restriction on deposits denominated in KRW with maturities of less than one year withdrawn). Non-residents hold domestic currency accounts (subject to the restriction of notification to the BOK for overseas remittance of funds withdrawn from these accounts) and 'free won' accounts (to be used for all won denominated funds allowed by law to be paid abroad and without any restriction on their conversion and repatriation abroad).	Individuals and corporate residents can hold unlimited amounts, and Korean firms can maintain foreign currency accounts abroad.
Thailand	Yes (Non-residents may borrow either directly or through FX Swap transactions in local currency from commercial banks to finance their underlying activities; without underlying a maximum of Baht 50 million). This limit does not apply to transactions with contract maturity above 3 months. Local Thai Baht borrowing is also allowed against foreign currency held locally by non-residents.	Yes (FC accounts if funds originate from abroad and THB accounts to be credited with proceeds from the sale of foreign currencies and other payments received from residents). FIs are required to curb the outstanding amount of Non-resident Baht Accounts (NRBAs) at the end of the day to the limit of 300 million baht for each NR.	Yes (subject to evidence of underlying transactions e.g., with funds originating from abroad or with borrowing proceeds from licensed Bangkok International Banking Facilities and other BOT restrictions). Foreign currency deposits are allowed for obligations becoming due in 6 months. For foreign currency accounts held abroad, approval is required if funds are of domestic origin.

Source: IMF, Annual Report on Exchange Arrangements & Exchange Restrictions, 2004.

Section V: Commodity Exposure: Hedging Practices in Select Countries

II.18 The era of derivatives contracts started with the introduction of an agricultural contract at the Chicago Board of Trade in 1859. Over the years, financial derivatives have become more important than commodity derivatives[11] although the latter continue to play a significant role against the backdrop of globalisation of commodity markets and liberalisation of agricultural markets in several EMEs. In the recent past, the upsurge in global commodity prices has been widespread across a number of metals and minerals besides crude oil and petroleum products. There has been an increasing tendency to hedge commodity price risk on the international commodity exchanges by market participants *viz*., commodity producers, commodity users and traders (both importers and exporters) with the objective of protecting against volatility in commodity prices and to ensure stable cash flows. The international commodity markets are also reported to have attracted a new class of players including banks, hedge funds and even pension and mutual funds that are looking for higher returns and avenues for diversification. There is also an element of uncertainty relating to persistence of the upward trend in commodity prices in the near future that generates an interest in use of price risk management instruments by commodity users. The commodities being traded at the international commodity exchanges include oil, electric power, natural gas, coal, nuclear power, pharmaceuticals, metals and agricultural products. Of these, crude oil and petroleum products predominate in terms of their share in all commodity swaps. Commodity hedging instruments are traded at the exchanges and are also available in OTC markets. The documentation procedure in respect of commodity hedging instruments is highly standardised.

II.19 The commodity risk management instruments are different from financial derivatives to the extent that a weak relationship between spot and forward prices of commodities may account for poor hedging effectiveness of commodity futures contracts (Chatrath, 2002). There is an in-built element of credit risk that is specific to the use of commodity price risk management instruments. The providers of the risk management instruments generally face this risk when they extend credit lines

to buyers of commodity options. On organised exchanges, brokers extend this facility to counterparties but it is mostly backed by bank letters of credit to safeguard against credit risk. Over-the-counter commodity price risk management instruments play a credit-enhancing role to the extent that upfront cash payments by clients may not be substantial (UNCTAD, 1994). In any case, the transactions remain confined to parties of good repute and standing as there is a tendency on the part of trade houses and banks to minimise the risk of counterparty default in such deals. The safeguards are also provided by way of upfront premiums, posting of collaterals and margin payments that reduce the credit risk exposure inherent in any risk management transaction. International banks and trading houses have their own systems of determining counterparty and country limits which restrict the access of domestic participants to international commodity exchanges.

II.20 Country practices reveal that several countries allow commodity producers and traders to hedge their commodity price risk exposure on international commodity exchanges like London Metals Exchange, Chicago Board of Trade, New York Mercantile Exchange, etc. This is regardless of the fact that a number of these countries also have local commodity exchanges. The local exchanges are not considered as substitutes to international commodity exchanges[12]. In general, the access to international commodity exchanges that provides benefits of market depth, liquidity and diversity of instruments (and therefore competitive advantage) is allowed only for the purpose of hedging. Restrictions on speculation are in place in a number of countries e.g., in Australia, South Africa, China and Japan. Commodity hedging practices in select countries are set out in Table II.8.

[11] According to UNCTAD estimates, commodity futures and options accounted for less than 15 per cent of total futures and options volume in 2001.
[12] It is held that access to international commodity exchanges may improve liquidity of the local exchange.

Table II.8: Commodity Hedging Practices in Select Countries

Country	Overseas Commodity Hedging	Local Commodity Exchange	Other Features
Australia	√	√	Restrictions on speculation continue. Hedging is done mostly through overseas commodity exchanges. Most Australian companies are quite sophisticated in their approach towards hedging. Regulations apply to firms providing brokerage services on recognised futures exchange anywhere in the world. This is controlled by the Australian Securities and Investment Commission. Even foreign brokerage firms are required to be regulated by the Commission, if they are offering exchange-traded instruments to Australian clients.
China	√	√	China had a highly regulated commodities market until mid-1990s and most of the Chinese companies, who wanted to hedge, were doing it through their overseas subsidiaries. The local companies were later allowed to hedge in a regulated way in late 1990s. Hedging is allowed, subject to licenses provided by local regulators. China Securities Regulatory Commission (CSRC) issues licenses to companies authorizing them to trade on specified foreign futures exchanges. Once authorised, the companies have aggregate limits approved for trading as well as acknowledgement that specified brokers have been approved. Once active, both the clients and brokers are required to send reports on a monthly basis to the CSRC, outlining the client's activity and open positions. Brokers send these directly to the CSRC, to avoid any interference by the client. In addition to controls outlined by CSRC, all Chinese companies are required to register with SAFE for approval of foreign exchange activities. State owned enterprises require the approval in advance for overseas commodity future transactions. These arrangements imply the existence of a two-tier structure of controls. Regulated companies are theoretically watched closely, with various checks and balances in place. However, many firms avoid the regulations by trading through offshore entities, which remain completely unregulated.
Japan	√	√	Local commodity exchanges trade yen denominated contracts. Although there is free market, restrictions on speculation exist.
Malaysia	√	√	Banks offering commodity products must obtain the central bank approval. Local banks cannot trade commodity derivatives. They provide only hedging solutions to their clients.
Pakistan	√	No	With permission from the central bank.

South Africa	√	√	Domestic players are allowed to hedge overseas provided they have a genuine commodity price risk by way of direct commodity exposure, *i.e.*, those importing or exporting. However, clients wishing to hedge indirect commodity exposure must gain approval from the central bank. Speculation is not permitted.
South Korea	√	√	Korean Laws permit domestic players to hedge overseas as long as they go through local counterparties. The market is less regulated in terms of corporates, although foreign brokerage firms can only execute futures business for Korean companies through a local (Korean) introducing broker (IB). These IBs are regulated by the Financial Supervisory Service (FSS). The local brokers are monitored for activity as well as for financial performance. Overseas brokers are not required to lodge any reports to the FSS directly or on behalf of their Korean counterparts.
Thailand	√	No	Bank of Thailand allows only vanilla hedges (swaps, forwards, simple options) and clients need to have underlying commodity exposure. Local commercial banks are currently not permitted to engage in trading operations–they provide only back to back cover transactions for their clients.
UK	√	√	The Financial Services Authority (FSA) regulates all brokers, exchanges and anyone using exchanges. It centralises all regulation from retail to corporate and market counterparts.

Source: UNCTAD.

Section VI: Market Structure

II.21 According to the BIS Triennial Survey for 2004, the average daily turnover in OTC derivatives market at the global level increased sharply to US $ 3,509 billion in April 2004 from US $ 2,168 billion in April 2001. Adjusted for local and cross-border double counting, daily turnover of the OTC derivatives markets nearly doubled from US $ 1,385 billion in April 2001 to US $ 2,410 billion in April 2004. Of the total adjusted turnover (net-net), foreign exchange turnover instruments accounted for US $ 1,292 billion while the share of interest rate turnover was US $ 1,025 billion. The interest rate options recorded a six-fold increase from US $ 29 billion to US $ 171 billion. Despite a rise in turnover that has been associated with an increasing exchange rate flexibility and greater forex market development, the share of EMEs in global OTC derivatives turnover has remained insignificant.

II.22 Average daily turnover of exchange traded derivatives is estimated at US $ 23 billion for currency instruments and US $ 4,634 billion for interest rate instruments in April 2004 as against US $ 10 billion and US $ 2,170 billion, respectively in April 2001. It is evident that trading volume in currency instruments at exchanges is much smaller than that for OTC (Table II.9).

Table II.9: Geographical distribution of reported OTC derivatives market activity[13]

Daily averages in April, in billions of US dollars

Country	Total		Foreign exchange[14]		Interest rate[15]	
	April 2001	April 2004	April 2001	April 2004	April 2001	April 2004
United Kingdom	628	1,176	390	613	238	563
United States	285	599	169	281	116	317
France	106	205	41	54	65	151
Germany	158	127	65	85	94	43
Italy	36	53	12	15	24	38
Japan	132	185	116	154	16	31
Belgium	22	45	8	14	14	31
Netherlands	49	61	25	42	24	19
Australia	8	23	4	9	4	14
Canada	43	53	33	41	10	12
Switzerland	63	74	53	62	10	12
Singapore	73	100	69	91	3	9
Austria	8	23	4	9	4	14
Hong Kong SAR	52	82	49	70	3	11
Taiwan, China	2	6	2	5	0	2
Brazil	2	2	2	1	0	1
India	2	4	2	3	0	1
Korea	4	11	4	10	0	1
Mexico	5	6	4	5	0	1
Chile.	1	1	1	1	0	0
Malaysia	1	1	1	1	0	0
Philippines	1	0	1	0	0	0
Thailand	1	2	1	2	0	0
Total	**1,862**	**3,089**	**1,186**	**1,758**	**676**	**1,331**

[13] Adjusted for local double-counting ("net-gross")
[14] Includes outright forwards and foreign exchange swaps.
[15] Includes single currency contracts only.

Source: BIS, Triennial Central Bank Survey, 2004

1. OTC *versus* Exchange-traded Derivatives

II.23 OTC markets still predominate in terms of the currency derivatives trading taking place the world over. According to the BIS Triennial Survey, In terms of outstanding positions, global notional amount outstanding of OTC contracts at end-June 2004 was US $ 220 trillion (US $ 119 trillion at end-June 2001) as against US $ 49 trillion of exchange-traded positions (US $ 17 trillion at end-June 2001). The notional amounts in the exchange rate segment accounted for 14.3 per cent of global notional amounts in OTC derivatives market at end-June 2004. This is notwithstanding the fact that the Asian crisis brought about increased awareness of credit risks and encouraged investors to relocate their derivatives business onto exchange-listed derivatives. In terms of daily turnover in interest rate instruments, the exchange-traded derivatives, however, were far ahead of the OTC derivatives market with a turnover of US $ 4,521 billion (US $ 1,026 billion in OTC derivatives market) in 2004[16]. The rapid growth of both OTC and exchange-traded derivatives market turnover seems to be unrelated to genuine commercial trade or hedging purpose transactions. They do contain a large element of synthetic transactions.

II.24 OTC derivatives markets provide the facility of customised products but they attract the criticism of not being transparent and therefore more prone to information and action-based manipulation and also to illiquidity problems (Randall Dodd, 2003[17]). Another shortcoming arises on account of difficulty in enforceability of these contracts on some occasions due to possible ambiguity in legal documentation requirements. Because of these limitations, they do not provide a clear picture of concentration risk being embedded in their operations. While exchange-traded derivatives require upfront initial margin in order to enter the contract, OTC derivatives sometimes have no initial collateral requirement- collateral is posted only after the position has lost money above a certain threshold. Given this practice,

[16] In terms of the outstanding notional amount, OTC segment is larger.
[17] Randall Dodd, October 2003, Consequences of Liberalizing Derivatives Markets, Financial Policy Forum, Washington

trading in OTC derivatives market may at times be riskier vis-à-vis exchanges. These markets also attract the criticism of not being subject to proper regulation.

2. Important Features of Currency Derivative Exchanges in Emerging Markets

II.25 Of the select EMEs whose forex market development and liberalisation measures have been studied, Brazil, Mexico and Russia have derivatives exchanges of international repute. Trading at these exchanges extends beyond forex and interest rate instruments. The development of market infrastructure and operational rules/practices at these exchanges in a gradual manner provides a clear idea of the advantages to market participants while also facilitating the task of regulation and supervision. The derivatives exchanges provide for adequate safeguards against systemic risks through guarantee settlement fund. They also reduce the risk linked to 'concentration' of trading among a handful of market players by acting as a central counterparty to all the exchange transactions. Further, it is easier for regulatory authorities to monitor and regulate activities in the derivative markets due to centralisation of information.

(1) Brazil

II.26 Brazilian Mercantile and Futures Exchange (BM&F) was founded in July 1985 and commenced its operations in January 1986. In 1991, the Sao Paulo Commodities Exchange (BMSP) merged with BM&F. The exchange has three clearinghouses separately for derivatives, foreign exchange and securities. The BM&F's Foreign Exchange Clearing House has been in operation since April 22, 2002. In August 2002, it launched the Brazilian Commodities Exchange that started trading in October 2002.

II.27 A wide variety of futures, forwards, swaps and options on interest rates, exchange rates, stock indexes, gold, foreign currency spreads, and sovereign debt instruments, and a number of commodities are traded at BM&F. It also facilitates OTC trades. The clearing and settlement system is operated by the exchange itself. In the spot market, DVP is observed while in the derivatives market, the clearing house processes daily margin calls based on mark to market principle for the collateral and applies haircut according to credit and liquidity risk of each asset. The BM&F Derivatives Clearinghouse imposes intraday risk limits, market concentration

limits, and collateral requirements on clearing members, brokerage houses, and customers. Most of the OTC contracts registered with the BM&F are guaranteed by the exchange. In view of the importance assigned to liquidity aspect, the exchange does not allow risk offsets between different products.

II.28 The foreign exchange interbank operations were earlier performed exclusively over-the-counter with mandatory registration at the Central Bank. However, the volatility of the Brazilian real in 1999 when it was made floating encouraged the use of hedging instruments. While the government regulations inhibited the growth of OTC market, the BM&F's aggressive marketing strategy was quite successful in attracting investors to currency derivatives traded at the exchange. BM&F accounts for a significant part of trading in currency derivatives in the country. BM&F runs both open outcry and electronic trading.

II.29 In 2003, BM&F traded 21 million currency option contracts (IDMA Derivatives Market Survey, 2003). In terms of futures trading volumes, Futures Industry Association (FIA) rated BM&F as the sixth largest global futures exchange and the 12th largest exchange in terms of global futures and options volume in 2003. The interest rate swap market is more liquid in Brazil than is the underlying cash market. Hence, it has become the chief price discovery mechanism. Further, trading volume in currency derivatives is much higher than in the cash market.

II.30 The exchange's liquidity is concentrated in three areas: the foreign currency futures (dominated by the US$50,000 cash-settled US dollar contract); the stock index futures; and the interest-rate futures. The contracts that dominate trading at the exchange include *DI Futures* (based on one-day interbank deposit futures contract and used for hedging or taking position on local interest rate risk), US dollar futures for maturities of one year or less, *Ibovespa Index Futures* (based on the Brazilian stock market index) and *Cupom Cambial Futures* (based on the spread between the local interest rate on interbank deposits, and the exchange rate variation during the life of the contract that amounts to onshore US dollar interest rate). Most of the derivatives contracts traded at the exchange are “non-deliverable”.

(2) Mexico

II.31 The efforts to create an exchange-listed derivatives market in Mexico began in 1994. The preferred approach was in favour of a gradual opening of the

Mexican markets to derivatives products in anticipation that excessive speculation might pose threats to the financial system. The Mexican Derivatives Exchange (MexDer) began operations in December 1998. It deals in currency futures, stock index futures and interest rate futures, and option contracts (stock index and individual stock options) but not commodities. The Electronic Trading, Transaction, Registry and Allocation System was introduced in September 1999 to reduce the operation cost, facilitate the activities of monitoring of the market and to bring about transparency in the process of price making.

II.32 MexDer is an organized derivatives market that offers advantages of liquidity, transparency and a diverse array of instruments for investment to the participants in the exchange. The exchange along with a clearinghouse functions on the principle of self-regulation. The Ministry of Finance and Public Credit, the National Banking and Securities Commission, and the Central Bank jointly regulate it.

II.33 Mexico is in the same time zone as Chicago and the derivatives exchanges of Chicago offer a number of derivative products based on Mexican underlying assets that restricts the level of turnover on MexDer. Notwithstanding this, trading volume totalled 173.8 million contracts in 2003 (84.27 million contracts in 2002), showing an increase of 106 per cent. Open interest showed a rise from 5.4 million contracts in 2002 to 20.5 million in 2003. MexDer emerged as the fastest growing market for interest rate derivatives and the sixth in terms of futures trading volumes in the world in 2003 (International Options Market Association, Derivatives Market Survey 2003, May, 2004). The FIA Annual Survey for 2003 also revealed that it was the interest rate contracts that led to a sharp rise in MexDer's growth, shifting it to the list of ten largest exchanges. Foreign investors are also allowed to trade on MexDer.

(3) Russia

II.34 The Moscow Interbank Currency Exchange (MICEX) was formed in January 1992 to organise interbank trading in currency and other financial

instruments. It began trading in governmental short-term non-coupon bonds (GKO) in 1993. In addition to MICEX, there are seven regional currency exchanges.

II.35 With the introduction of a new electronic trading and depository complex in 1994, the exchange started trading in new financial instruments of stock and derivatives market. In September 1996, the exchange initiated derivatives exchange market (futures for US dollar and GKOs). As the exchange was emerging as the leading market of derivatives in Russia in terms of open position volumes, it introduced futures on government securities (OFZ-PK), equities and MICEX Composite Index. Option is an interbank market whose operators are banks and companies hedging their currency positions but is much less developed. Dealers operating on the forward market usually quote options only on the 15th of each month for a period of one to 12 months.

II.36 In 1997, the System of Electronic Lot Trading (SELT) was introduced which led to integration of regional currency exchanges with MICEX. This system is used to hold inter-bank and inter-regional currency tenders. Traded currencies include the US dollar and the Euro. The volume of inter-bank currency tenders held on the MICEX reached US $ 350 billion in 2004.

II.37 The MICEX Group comprising the MICEX Stock Exchange, the MICEX Settlement House, the National Depository Centre, regional exchanges and others is the largest exchange in Russia, the CIS and Eastern Europe. Its total trade turnover in 2004 was US $ 548 billion with the average daily volume of transactions of about 2 billion dollars. Annual trading volume in currency market segment of MICEX stood at 10051,89 billion roubles in 2004, up from 3512,13 billion roubles in 2000. Derivatives section (confined to futures on the US dollar and the Euro) trading turnover at MICEX increased from 57 billion roubles to 1307 billion roubles during the same period.

II.38 The legislative framework, particularly for OTC derivatives, is not considered perfect. Regulation of derivatives recently became simpler in Russia because of the creation of a single derivatives regulator, in the form of the Federal Service for Financial Markets instead of three different regulators – foreign exchange, equities and commodities derivatives. Forwards are understood only as

deliverable forwards. Netting is also effectively impossible in Russia. Only matured obligations in the same currency are allowed to be offset against each other.

3. On-shore/Off-shore Non-Deliverable Forwards

II.39 Trading in offshore NDF contracts[18] arises on account of restrictions on the use of hedging instruments by non-residents in the onshore market. Mostly foreign investors use offshore NDF contracts for emerging market currencies, and these generally trade at a premium to local markets. The post-Asian crisis period has been marked by the imposition of various restrictions on onshore-offshore transactions by several Asian EMEs to contain speculative pressures that arise on account of offshore markets[19]. The existence of an offshore market in domestic currency is also perceived to interfere with the monetary policy objectives of regulating money supply and or maintaining stable exchange rates. Notwithstanding these restrictions[20], the NDF market is reported to be active in six Asian currencies viz., Korean won, New Taiwan dollar, Chinese renminbi, Indian rupee, Indonesian rupee and Philippine peso (BIS, 2004[21] & EMTA, 2003[22]). The Brazilian real, Chilean peso and the Russian rouble are other currencies that are important in terms of their share in daily NDF turnover. The derivatives linked to the Central European currencies are also often traded offshore (IMF, 2004). NDF trades are observed to be more volatile vis-à-vis spot and deliverable outright forward transactions. The

[18] Theoretically, offshore currency markets are expected to provide benefits of liquidity and also depth to foreign exchange markets in domestic currency and thereby facilitate efficient pricing. However, the regulators view the possible destablising impact of these markets more seriously and tend to restrict offshore currency trading.

[19] The practice of imposition of restrictions on transactions with non-residents in domestic currency instruments was also resorted to by German and Swiss authorities in the 1960s and 1970s.

[20] In People's Republic of China and Taiwan, offshore entities do not have access to onshore markets while in India, Indonesia, Korea and the Philippines, non-residents are allowed to access onshore forward markets that is limited or subject to underlying transaction requirement. The restrictions are imposed by way of prohibiting domestic currency deposits by non-residents, not allowing them to access domestic currency credit from resident financial institutions, controls on domestic currency transactions of financial institutions with offshore entities (through onshore and offshore accounts), derivative transactions with non-residents and on issue or sale of domestic currency denominated securities by non-residents. In the extreme case, domestic currency transactions of non-financial institutions with non-residents are also restricted. Korea, Malaysia and the Philippines even prohibit use of domestic currency in settlement of trade transactions with some exceptions.

[21] Average daily NDF turnover in six Asian currencies, according to various estimates, is reported to be in the range of 11.3 per cent to 25.1 per cent of total turnover of outright forwards, forex swaps and NDFs in these currencies.

[22] EMTA's NDF Survey for the second quarter of 2003 reported a turnover in NDFs of US $ 320 billion. EMTA defines NDFs as synthetic forward contracts for currencies that foreign investors are not able to settle in local forward markets due to illiquidity or regulatory, transferability or other restrictions.

offshore use of domestic currencies is restricted in Asia (Indonesia, Korea, Malaysia, Singapore, Thailand, China, India, the Philippines, Taiwan Province of China), Latin America (Brazil, Chile and Colombia), and Europe (Hungary and Poland) (Ishii et al, 2001). NDFs onshore are generally restricted in several countries (Table II.10).

Table II.10: Non-Deliverable Forwards: Experiences of Select EMEs

Country	Features of NDF market
Brazil	Most of the derivatives contracts traded at BM&F are non-deliverable.
Chile	Domestic corporations prefer to hedge their exposure in the onshore NDF market while leveraged foreign investors use mainly the offshore market[23].
China	NDF/NDS market is available offshore.
Indonesia	Before the crisis, even deliverable IDR market existed offshore. However, the imposition of restrictions on domestic currency loans and transfers to non-residents in 2001 led to the replacement of offshore deliverable IDR forwards by NDFs.
Malaysia	Prior to the crisis in 1997, an active offshore market in ringgit had developed in Singapore that was used for cross-currency hedging of ringgit. However, the offshore trading of MYR was severely curtailed through controls on cross-border transactions after the crisis. An offshore market in USD/MYR is practically not available. NDF market is technically non-existent in Labuan International Offshore Financial Centre in Malaysia.
Philippines	Under the Currency Rate Risk Protection Program, US dollar-Philippines Peso forward foreign exchange contracts are entered between the BSP and the commercial bank with the foreign exchange obligations of bank clients as the underlying transaction; only the net difference between the contracted forward rate and the prevailing spot rate shall be settled in pesos at maturity. NDF contracts with non-residents are also allowed but the forward contract amount shall not exceed the outstanding amount of the underlying obligation during the term of the contract.
Russia	NDF market is mainly located offshore due to insufficiently developed regulatory base in Russia (NDF contracts are not supported by Russian court, and enforceability is questionable). Futures liquidity both offshore (CME) and on-shore (MICEX and SPICEX) is insignificant. However, before the financial crisis in 1998, the onshore NDF market was very active. The outstanding notional of the US dollar-rouble NDF contracts in the pre-crisis situation ranged from US $10 billion to US $ 100 billion.
Singapore	Singapore discourages offshore trading of its currency. However, an offshore SGD market exists in London, Hong Kong and New York.

[23] Nine out of ten forward contracts in onshore market are non-deliverable. In Chile, corporates entering forward contracts with banks are required to post collateral on account of counterparty risk. The collateral requirement ranges between 5 to 15 per cent of the notional value of the contract depending on maturity period. This requirement is met through the approval of a credit line by the bank and its cost is passed on to customers by way of less favourable forward rates.

South Korea	No regulation on trading NDF onshore since April 1999 although offshore market is more active. Domestic banks are allowed to participate in the offshore NDF market. NDF can be structured in tenors of up to ten years in the offshore market. The offshore NDF market in Korean won is reported to be the deepest in Asia and also globally.
Taiwan	NDF market exists both onshore and offshore.
Thailand	Onshore NDF transactions are discouraged except for rollover transactions, or for transactions that have to be terminated due to settlement failure.

4. Forex Derivatives and Financial Crisis

II.40 Derivatives that are primarily supposed to be risk management instruments to be used by market participants for minimising their currency exposure and interest rate risks have often attracted criticism when they exacerbate crisis situation and lead to financial sector vulnerability. During periods of extreme financial distress, markets become one sided as firms and investors look forward to hedging their exposures. With few or no entities willing to step in on the other side of the trade, market makers are forced to hedge their exposures by short-selling the domestic currency in the spot market. Consequently, domestic currency weakens further, interest rates rise, volatility increases and corporate solvency deteriorates, posing threat to financial stability.

II.41 The experiences of EMEs reveal that in several cases, the excessive use of derivatives enabled market participants to establish leveraged positions and assume risks, which could not be sustained leading thereby to crisis situations. The EMEs with fixed exchange rate arrangements were more vulnerable to such situations although Hong Kong with flexible exchange regime could also not avoid speculative attack on its currency by highly leveraged players. The use of specific derivative instruments e.g., total return swaps in East Asia with the underlying objective of gaining from the carry trade or carry business on account of interest rate differential of borrowing and lending under fixed exchange rates came under severe criticism in the context of their role in deepening the financial crises (Randall Dodd, 2000)[24].

II.42 OTC options on emerging market debt particularly of Brazil, Mexico, Argentina, Venezuela and Poland also generated an element of volatility arising as a result of their use for speculation. It is the use of structured products, which combine the features of conventional financial instruments with calls/options that is reported to have caused volatility in foreign exchange markets during the Mexican and Asian crises. In Mexico and Brazil, there were also instances of circumvention of prudential regulations by market participants with the shifting of on-balance sheet exposures to off-balance sheets that subsequently turned destabilising. There have been several cases of commodity price manipulation through the use of derivatives, which affected severely a number of primary products exporting developing countries.

II.43 An important lesson to be drawn from the country experiences is that large positions in OTC derivatives markets by investors were generally financed through credit lines provided by commercial banks (e.g., LTCM case, attack on Hong Kong dollar). Consequently, the excessive derivatives exposure got linked to credit risk faced by the banking system in a number of countries. The restrictions on domestic currency lending to non-residents can limit the scope for short-selling the currency and reduce the scope for speculative attacks.

Section VII: Conclusions

II.44 Country experiences indicate that a move to flexible exchange rate regime necessitates as also facilitates the development of foreign exchange market. A number of EMEs have adopted either managed floating or independently floating exchange rate regimes. Despite a rise in turnover that has been associated with an increasing exchange rate flexibility and greater forex market development, EMEs are still insignificant in terms of their share in global foreign exchange turnover and also in derivatives segment of the forex market. They still retain a number of foreign exchange regulations and are yet to have their currencies convertible on the capital account. The markets for underlying assets/instruments themselves in some of these countries leave scope for development. These factors limit the size of their foreign exchange markets.

[24] Randall Dodd, 2000, “The Role of Derivatives in the East Asian Financial Crisis”, Working Paper No. 20, Centre for Economic Policy Analysis, New York.

II.45 The exchange rate flexibility exposes market participants to risks arising as a result of exchange rate fluctuations. The market risk assumes significance in globally integrated foreign exchange markets encouraging market participants to use risk management instruments. Availability of these instruments as also the freedom to use these instruments depends on the existing exchange control/regulation environment in a country. EMEs differ significantly among themselves in terms of their overall approach towards foreign exchange market liberalisation strategy. While the majority has been supportive of a gradual approach towards reforms, some have preferred to adopt 'big bang' approach and gone in for a wide range of capital account liberalisation measures. The operational environment is relatively more flexible in countries with current account convertibility and open capital accounts. The countries with liberal exchange control regimes have now switched over to the regulatory system for capital account transactions that allows market participants to undertake a large number of transactions subject to the requirement of making notification to the regulatory authorities while the 'negative' list requiring prior permission is getting pruned over time.

II.46 The exchange rate regimes do influence the regulatory framework when it comes to the issue of providing operational freedom to market participants in respect of their foreign exchange market operations. While the use of risk management instruments is encouraged by EMEs for hedging genuine exposure linked to real and financial flows, their overall approach towards risk management has remained cautious with a clear emphasis on the need to safeguard against potential financial instability that could arise due to excessive speculation in the foreign exchange market even when macro-economic fundamentals are reasonably good. This has been seen even in those countries where the use of hedging instruments is not linked to the 'real demand principle'.

II.47 Country practices in respect of permission given to banks to engage in local currency/foreign currency derivative transactions with non-residents reveal a move towards relative freedom with minor restrictions. Mexico imposes no restrictions while Brazil allows foreign investors to trade any instrument that is available to residents. Korea permits it for all instruments except credit and

commodity related products. In Russia, there are no formal limitations on conducting these derivative transactions. Several countries allow flexibility in establishment and lifting of hedges. NDFs onshore are restricted in some countries while others allow flexibility in their use. Although there is no clear pattern relating to sequencing of liberalisation measures, regulations on forex transactions for individuals and companies seem to be generally eased before relaxing them for financial sector participants. In some countries, the emphasis has been placed on enhancing the real and the financial sectors' capacity to manage risks before undertaking large-scale liberalisation measures. In South Africa, the exchange controls on transactions of non-residents were relaxed before granting permission to corporate residents.

II.48 Notwithstanding the fact that prudential regulations are considered as an integral part of the overall risk management strategy, the country practices differ widely in this regard. An important prudential measure is the fixation of open position limits of banks. This stipulation also varies from country to country besides the fact that these limits do attract capital requirement in several countries. The prudential safeguards also get manifested in the form of restrictions on capital account transactions of various types including borrowings of non-residents in the local currency market, foreign currency deposits holdings of domestic residents/local currency deposit holding of non-residents, offshore holding of domestic currency deposit accounts, etc.

II.49 Several countries allow producers and manufacturers to hedge their commodity exposure on international commodity exchanges regardless of the fact that a number of them also have local commodity exchanges. In general, access to international commodity exchanges is only for the purpose of hedging. Restrictions on speculation are in place in some countries such as Australia, South Africa, China and Japan.

II.50 The experience with the extant market structure in many EMEs brings forth the fact that it may be desirable to develop exchanges for forex transactions including derivatives, which would provide benefits of decentralised risk, transparency, price discovery, faster settlement and better regulation.

II.51 Country experiences highlight the fact that much like the misuse of derivatives, which leads to assumption of leveraged risk, systemic threat can be posed if foreign currency denominated liabilities are left unhedged.

II.52 The operational freedom in use of risk management instruments has to go along with a proper internal risk control mechanism and efficient prudential and supervisory systems. Of late, there has been a great degree of emphasis on internal risk management systems and the need to have a well-defined risk management policy and appropriate safeguards to ensure that the accepted policy is implemented in true spirit. Supervisors have to be ready with their information/monitoring, regulatory and supervisory systems to ensure that market participants observe the prudential risk management norms and avoid excessive risk taking in a liberalised environment.

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