Chapter 5

CONCLUSIONS, SUGGESTIONS & RECOMMENDATIONS

The objectives of the Research study have been achieved and the study findings out
desk research and primary data survey have been illustrated and analysed in the
previous chapters.

In this final chapter, the summary of findings, conclusions and suggestions are
covered. It incorporates the following points:

⇒ Open FX positions - Foreign Exchange Risk
⇒ Nature and Magnitude of exchange risk
⇒ The strategy to be adopted for hedging or managing exchange risk.
⇒ The tools of managing exchange risk and their relative merits.
⇒ Managing Forex Exposure
⇒ The Hedging decision
⇒ What drives corporate hedging policy?
⇒ Hedging imperatives - Critical scenarios, Systematic hedging
⇒ Tools and techniques for the management of foreign exchange risk
⇒ Main financial risks faced by corporate treasury
⇒ Controlling Corporate treasury trading risks
⇒ Central banks survey of FX and derivative market activity
⇒ Trading in currency futures introduced by GOI
⇒ Growth of the foreign exchange market in India
⇒ Comparison of foreign exchange and derivatives products availability in India
⇒ Summary of responses to Questionnaire from Indian companies
⇒ Successful Currency Risk Management -implementing hedging actions
⇒ Seven steps to successful Currency Risk Management
⇒ Measurement of Risk exposures
⇒ Exposure Management Policy – contents
⇒ Familiarity with the products
⇒ Market risk and Value at Risk(VaR)
⇒ Globalisation and projected volatility
⇒ RBI Guidelines/Notifications
⇒ Inferences from past data
5.1 Open FX positions
The risk inherent in running open foreign exchange positions have been heightened in recent years by the pronounced volatility in forex rates, thereby adding a new dimension to the risk profile of companies’ exposures. Foreign Exchange Risk is the risk that a company may suffer losses as a result of adverse exchange rate movements during a period in which it has an open position, either spot or forward, or a combination of the two, in an individual foreign currency. The corporates are also exposed to interest rate risk, which arises from the maturity mismatching of foreign currency positions. Even in cases where spot and forward positions in individual currencies are balanced, the maturity pattern of forward transactions may produce mismatches. Any changes in premia/discounts of the currencies concerned could result in a loss.

Government’s decision about exchange rate management continues to be the single most factor shaping the currency markets. There are three major exchange rate regimes viz. Fixed, Semi-fixed and Floating. The exchange rate management is closely related to managing the domestic economy of the country. FX risk is one of the major component of market risk. Market risk is the risk that adverse movements in the market affect the value of investment or the expected returns on future cash surpluses or currency positions. It has two important components viz. interest rate risk and foreign exchange risk.

5.2 The three important issues that need to be addressed in this regard are:
- **Nature and Magnitude of exchange risk**
- The strategy to be adopted for hedging or managing exchange risk.
- The tools of managing exchange risk and their relative merits.

5.3 Nature and Magnitude of Risk
5.3.1 The first aspect of management of foreign exchange risk is to acknowledge that such risk does exist and that it must be managed to avoid adverse financial consequences. Many companies refrain from active management of their foreign exchange exposure because they feel that financial forecasting is outside their field of expertise or because they find it difficult to measure currency exposure precisely. However not recognizing a risk would

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Marc Levinson, Guide to Financial Markets, Page 26
HSBC, The Treasurers’ Guide to Investing Corporate Cash, page 39
not make it go away. Nor is the inability to measure risk any excuse for not managing it. Having recognized this fact the nature and magnitude of such risk must be identified.

5.3.2 It is essential to understand the forex market relationships like covered interest parity relationship. For example, if there is free and unrestricted mobility of capital, the interest differential between two currencies will equal the forward premium/discount for either of the currency. Two factors are driving the Dollar premium against INR, viz. interest rate differentials and forward demand / supply factors. Hence, forward hedging should be considered carefully.

5.3.3 From the above it can easily be determined that a currency with a lower interest rate will be at a premium to a currency with a higher interest rate. The other relationships in the forex market are not as deterministic as the covered interest parity, but needs to be recognized to manage forex exposure because they are the theoretical tools used for predicting exchange rate movements, essential to any hedging strategy particularly to economic risk as opposed to accounting risk. The most important of these is the Purchasing Power Parity relationship which says exchange rate changes are determined by inflation differentials. The Uncovered Interest Parity theory says that the forward exchange rate is the best and unbiased predictor of future spot rates under risk neutrality. These relationships have to be clearly understood for any meaningful forex risk management process.

5.4 Managing Forex Exposure

The first major decision on forex risk management is to fix its open foreign exchange position considering the cash flows in various currencies and the need for expansion. There are various tools, available for hedging of FX risk like over the counter forwards, futures, money market instruments, options, structured products etc. In equilibrium and in an efficient market the cost of all will be the same. The tools differ for different risks, for example symmetric hedging tools like futures cannot easily hedge contingent cash flows where the risk is non-linear and options may be better suited.
5.5 The Hedging decision
The issue of whether or not to hedge risk continues to baffle many corporations. At the heart of the confusion are misconceptions about risk, concerns about the cost of hedging, and fears about reporting a loss on derivative transactions. A lack of familiarity with hedging tools and strategies compounds this confusion. Corporate risk managers also face the difficult challenge of getting hedging tools (i.e., derivatives) approved by the company’s board of directors.

An effective hedging program does not attempt to eliminate all risk. Rather, it attempts to transform unacceptable risks into an acceptable form. The key challenge for the corporate risk manager is to determine the risks the company is willing to bear and the ones it wishes to transform by hedging. The goal of any hedging program should be to help the corporation achieve the optimal risk profile that balances the benefits of protection against the costs of hedging.

5.6 What drives corporate hedging policy?
The analysis in the above article indicates that steady growth in business volumes and a policy of systematically hedging operating foreign exchange exposures have lowered earnings volatility for the IT sector. The stock market seems to have recognized that and has consistently provided robust valuations for the sector.

The lesson, therefore, for companies with an export bias is to have a proper hedging policy in place and, more importantly, implement the policy. For instance, if the policy mandates compulsory hedging of revenue flows if the market provides hedging levels (prices) which cover the internally budgeted cost levels, the hedging action should follow almost automatically. Discretion should be allowed only in respect of the instruments utilized for hedging— for instance, forward contracts or options —but not on the price level to be hedged.

Ian H. Giddy, The Corporate Hedging Process, (Adapted from an article published by Bank of Montreal)
5.7 Hedging imperatives

Hedging is imperative for companies which have revenue flows with a single-currency bias or that are denominated in a single currency.

In that case, the flexibility and cushion provided by a currency-diversified revenue stream is not available. Official statistics show that Indian exports are still predominantly invoiced in the US dollar. Therefore, Indian companies, by and large, do not enjoy the benefits of the foreign exchange market equivalent of portfolio diversification.

Of course, an alternative in such a situation is to move the cost base itself to the currency in which companies’ exports are predominantly invoiced.

This could involve a shift to imported raw materials from locally procured raw materials and/or financing — both for working capital and capital expenditure — in the currency which causes exposure on the income side. Official balance of payments statistics show that Indian companies are trying out these strategies.

Non-oil and non-consumption imports have registered strong growth over the past few years. (The recent permission for also hedging the price risk on the commodities planned to be imported is another important step towards reducing the overall level of risk on companies’ operating cash flows, as this would serve to fix the dollar or foreign currency price of the commodity being imported). Indian companies have also taken to foreign currency borrowings for their working capital/capital expenditure in a big way.

5.7.1 CRITICAL SCENARIOS

Systematic hedging also becomes critical in scenarios where currencies are subject to secular trends. The earnings stream of a company with international exposures could remain broadly anchored to its medium-term growth rate if what is lost in one year is made up in another year on account of volatility in exchange rates.

The stock market also may not worry much about companies with currency exposures — even if the exposures are not hedged — in such a scenario.
But where currency volatility becomes minimal or negligible, a company has to methodically hedge its operating exposures.

It will otherwise face considerable erosion of its local currency earnings base or could face pressure on the expenditure side. There is an inverse relationship between the level of currency volatility and the stability/growth of the earnings stream. The rupee, for instance, appears to be in the midst of a secular and structural run against the dollar. It has risen 4-5 per cent per annum, on average, against the dollar in the past five years, interrupted only by brief reversals.

In other words, volatility in the bilateral dollar-rupee currency pair has been low, though that in the derived currency pairs - such as, say, in the Euro-rupee or British Pound-rupee - has been notable because of the variability in the Euro-dollar or Pound-dollar pairs.

From a capital market perspective, the corporate policy on earnings distribution or the dividend policy, for instance, could have an important bearing on companies’ decision to hedge and the formulation of a hedging policy.

High dividend pay-outs could be considered the managements’ way of assuring its shareholders (and prospective investors) about the inherent strengths and, more important, the growth potential of the earnings stream and operating cash flows.

It then becomes incumbent on the finance manager to minimize volatility in the earnings stream and in the cash-flows generated so that the dividend payouts are serviced smoothly.

The need to preserve the stability and inherent growth potential of the earnings stream could also be strong for those companies that have to, say, carry on R&D operations uninterrupted.

The pharma sector, for instance, could fall in this category. Pharma R&D is a long-drawn-out affair, involving the commitment of considerable amounts of money and time before a product or formula can be commercialized.
Usually, the R&D effort consumes so much resources that local sales alone may not be enough. Wider markets (exports) and the revenues they bring are also necessary to justify the resources consumed in the R&D phase.

There is a mutually reinforcing relationship here. High expenditure during the R&D stage demands very wide markets but the revenue flows from those markets have to be protected/hedged so that the earnings stream/cash-flow remains strong enough to support continued R&D.

A Ranbaxy or a Dr Reddy’s, for instance, would need a comprehensive hedging policy to be in place, given their R&D efforts and the diverse markets in which they sell.

5.7.2 Imperatives in corporate forex hedging

Low-profile exporters such as textiles as also the more high-profile ones such as IT companies which have revenue (in)flows denominated in the dollar will have pressure on margin when INR is appreciating.

For companies with FC borrowings, there will be a gain on account of outflows and valuation. However, it will not be possible to “fix” the final cost of unhedged foreign currency borrowings for reporting on a particular balance-sheet date.

Therefore it is necessary for Indian companies which have significant revenue flow exposures in foreign exchange to move or convert all or at least a part of their capital liabilities into foreign currency exposures. This can be a broad financial management strategy as long as the appreciating rupee view continues to hold.

That is, as the revenue base is under pressure on account of the depreciation of the currency in which the revenues are denominated, the strategy should be to move the cost base also to the currency which is depreciating against the Indian currency. In other words, increasing levels of ‘dollarisation’ of the balance sheet should be the strategic response to sustained rupee appreciation.

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72 Business Line, Wednesday, 08 August, 2007
The risk in Swap is basically the same as the risk a company takes in borrowing FC directly. As such, as long as the company has a view on currencies, a certain risk appetite and a risk management policy in place, it should be open to doing this product.

At the system level, the RBI places some restrictions on the quantum of such currency swaps (outlined above) which can be outstanding at a point in time for a single bank.

A study of the quarterly results of some textile exporters (‘Rupee squeeze prompts textile companies to change tack’, Business Line, August 6) showed the operating margins of many companies declining by a few percentage points in the June quarter on the back of a 7-8 per cent appreciation in the rupee in the period between March and now.

It is very clear that if these companies had hedged their export receivables in March at the then prevailing levels (spot of around Rs 43.50 during end-March and higher around Rs 44.10 to the dollar earlier in the month and 3 month/6 month dollar premium of around 40-70 paisa respectively), they could have avoided much of the margin pressure being witnessed currently, at least for a part of the overall financial year. The rupee has since strengthened around 7% from its March levels and further costing/budgeting has to be from this base. Such hedging does not appear to have taken place or it has taken place only sporadically. What needs to be stressed here is the criticality of systematically implementing hedging action as long as the market provides prices which cover a company’s budgeted costs/realization prices.

5.8 TOOLS AND TECHNIQUES FOR THE MANAGEMENT OF FOREIGN EXCHANGE RISK

The relative merits of several different tools for hedging exchange risk, including forwards, futures, debt, swaps and options.

First, there are different tools that serve effectively the same purpose. Most currency management instruments enable the firm to take a long or a short position to hedge an opposite short or long position. Thus one can hedge a DM payment using a forward exchange contract, or debt in DM, or futures or perhaps a currency swap. In equilibrium

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the cost of all will be the same, according to the fundamental relationships of the international money market.

Second, tools differ in that they hedge different risks. In particular, symmetric hedging tools like futures cannot easily hedge contingent cash flows: options may be better suited to the latter.

5.9 Main financial risks
Following rapid and large shifts in exchange rates, which remain unstable, and amid uncertainty over interest rates, which have changed sharply in some countries, FX transactions and interest rates are the main financial risks capturing the attention of European corporate treasurers, according to the second Ernst & Young European treasury survey of corporate treasurers across the continent covering nine different countries across Europe (Belgium, Finland, France, Italy, Luxembourg, the Netherlands, Spain, Sweden and the UK). That focus derives partly from hectic global financial markets. But the risks arising from FX and interest rates are also well understood by management and operational participants because they play an integral role in the business of the companies surveyed.

Graph 28: What are the main financial risks?

<table>
<thead>
<tr>
<th>Risk</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest Rates</td>
<td>93%</td>
</tr>
<tr>
<td>Foreign Exchange</td>
<td>93%</td>
</tr>
<tr>
<td>Translations</td>
<td>76%</td>
</tr>
<tr>
<td>Liquidity</td>
<td>67%</td>
</tr>
<tr>
<td>Credit</td>
<td>65%</td>
</tr>
<tr>
<td>Commodities</td>
<td>40%</td>
</tr>
<tr>
<td>Energy</td>
<td>31%</td>
</tr>
<tr>
<td>Equity Prices</td>
<td>22%</td>
</tr>
<tr>
<td>Pollution Rights</td>
<td>20%</td>
</tr>
<tr>
<td>Raw Materials</td>
<td>9%</td>
</tr>
</tbody>
</table>
The vast majority of European companies (three-quarters of respondents) measure their risk exposure at a central level, and complex models of risk valuation such as VaR and sensitivity analysis are widespread. Nevertheless, more than one-half report difficulties in measuring these risks and only two fifths of the corporate treasurers report to their Audit Committee, illustrating the long road ahead for risk management in the future.

**Graph 29: HOW DOES COMPANY MEASURE RISK?**

<table>
<thead>
<tr>
<th>Method</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notional Values</td>
<td>55%</td>
</tr>
<tr>
<td>Sensitivity Analysis</td>
<td>40%</td>
</tr>
<tr>
<td>Value at Risk (VaR)</td>
<td>38%</td>
</tr>
<tr>
<td>Duration</td>
<td>25%</td>
</tr>
<tr>
<td>Gap Analysis</td>
<td>25%</td>
</tr>
<tr>
<td>Asset Liability Management</td>
<td>15%</td>
</tr>
<tr>
<td>Monte Carlo Simulations</td>
<td>7%</td>
</tr>
<tr>
<td>Earning at Risk (EaR)</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>5%</td>
</tr>
<tr>
<td>No Answer</td>
<td>2%</td>
</tr>
</tbody>
</table>

5.10 CONTROLLING CORPORATE TREASURY TRADING RISKS

In a corporation, there is no such thing as being perfectly hedged. Not every transaction can be matched, for international trade and production is a complex and uncertain business. As we have seen, even identifying the correct currency of exposure, the currency of determination, is tricky. Flexibility is called for, and management must necessarily give some discretion, perhaps even a lot of discretion, to the corporate treasury department or whichever unit is charged with managing foreign exchange risks. Some companies, feeling that foreign exchange is best handled by professionals, hire ex-bank dealers; other groom engineers or accountants. Yet however talented and honorable are these individuals, it has become evident that some limits must be imposed on the trading activities of the corporate treasury, for losses can get out of hand even in the best of companies.
In 1992 a *Wall Street Journal* reporter found that Dell Computer Corporation, a star of the retail PC industry, had been trading currency options with a face value that exceeded Dell’s annual international sales, and that currency losses may have been covered up. Complex options trading was in part responsible for losses at the treasury of Allied-Lyons, the British foods group. The $150 million lost almost brought the company to its knees, and the publicity precipitated a management shake-out. In 1993 the oil giant Royal Dutch-Shell revealed that currency trading losses of as much as a billion dollars had been uncovered in its Japanese subsidiary.

5.11 Central banks survey of FX and derivative market activity in April 2004

Bank for International Settlements (BIS) conducted survey of Foreign Exchange and Derivative activity and central banks and monitory authorities of 52 countries participated. It can be observed from the findings of the survey that Indian Foreign Exchange market’s share is still very small and is increasing over the period since 1994, post liberalisation(Table 14).

Table 16: FX and Derivatives market turnover USD Vs. INR 1989-2004

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Currency wise FX market turnover %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) USD</td>
<td>90.0</td>
<td>82.0</td>
<td>83.3</td>
<td>87.3</td>
<td>90.3</td>
<td>88.7</td>
</tr>
<tr>
<td>(b) INR</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.1</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>2. Currency wise FX market turnover (USD billions)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) USD</td>
<td>-</td>
<td>167</td>
<td>244</td>
<td>351</td>
<td>254</td>
<td>461</td>
</tr>
<tr>
<td>(b) INR</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>3. OTC derivatives turnover (USD billions)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) USD</td>
<td>-</td>
<td>-</td>
<td>53</td>
<td>90</td>
<td>135</td>
<td>355</td>
</tr>
<tr>
<td>(b) INR</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4. OTC derivatives turnover (% share)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) USD</td>
<td>-</td>
<td>-</td>
<td>19.6</td>
<td>18.9</td>
<td>17.7</td>
<td>23.5</td>
</tr>
<tr>
<td>(b) INR</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.1</td>
</tr>
</tbody>
</table>

75 Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity in April 2004, Preliminary global results, September 2004, Monetary and Economic Department, BIS, Basel
5.12 Trading in currency futures introduced by GOI

As per the market expectations, another long pending financial reform issue on Currency futures trading was approved by the government. Launch of trading in currency futures has come at such a time when several Indian corporates have burnt their fingers in another version of currency derivative called Over the Counter (OTC) products few months back, and the issue has turned into a legal battle between suffered companies and banks involved. This introduction will bring complete foreign exchange derivative market in India same as developed countries.

According to Government of India and RBI, a person who is resident of India can now hedge his currency risk by using advanced and complex derivatives like currency forwards, currency swaps and currency options not only through OTC products but also through exchange traded currency futures products.

With increased depth of FX market, which has reached to a daily turnover of $30 billion as on March 2007 from $27.0 billion in March 2006, it was felt that there should be some measures to protect the corporates from excess volatility in foreign exchange market, which otherwise would impact export performance and balance sheet of the companies and the country too.

In an era when Indian companies are buying foreign companies and are going abroad for availing loans/funds, there's an increased exposure of corporate India to various currencies of the world, in which they have to make payment or receive payments. In this direction this step of government, RBI and SEBI was a welcome move, which is expected to create a full fledged FX derivative market in India and will bring India nearer towards capital account convertibility.

Exchange traded currency futures will work just like future and options (F&O) in stock market, with the underlying various currencies of the world. The exchange traded currency future expected to ensure that there may not be any incidents of Indian corporates suffering due to unfavorable movements of currency rates in between option booking date.

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and option expiry date since daily mark-to-market mechanism will ensure effective hedge. Had this facility been available to Indian corporates earlier, the extent of losses Indian corporates suffered could have been avoided.

**Benefit of exchange traded currency future contracts**

- Daily mark-market obligations settlement between parties concerned.
- Counter-party risk of non obligation of contract could be avoided due to intermediary like clearing corporation, which will become guarantor for both the parties.
- Introduction of exchange traded currency option will ensure equitable participation from both large and small investors in currency trading, as compared to OTC contract market, lot will be smaller. Minimum lot size of the newly introduced scheme is US dollar 1000 only.
- It will lead to greater transparency, efficiency and accessibility in currency futures and options market.

**Currency futures are intended to provide further depth and breadth to the market and expected to be one of the effective risk management instrument**\(^77\) in India.

5.13 As per the BIS Triennial Survey on the global foreign exchange and derivatives market activity (2007), the foreign exchange market in India has grown into the 16\(^{th}\) largest market in the world in terms of total daily turnover which was US$34 billion in 2007. The OTC derivatives segment of the foreign exchange market has also increased significantly to register a daily average turnover of USD 24 billion, which is 17\(^{th}\) largest among all countries. The bid-offer spreads are narrow reflecting the liquidity and efficiency of the market. There is a wide menu of products available in the OTC market which serves a distinct economic purpose.

5.14 **Comparison of foreign exchange and derivatives products availability in India**

It can be observed that all the FX products are available in India now and is comparable with developed market as given in Table 17.

<table>
<thead>
<tr>
<th>Product</th>
<th>Developed markets</th>
<th>In India</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Available</td>
<td>Available</td>
</tr>
<tr>
<td>1. Foreign exchange markets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spot</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Outright forwards</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Foreign exchange swaps</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2. The global OTC derivatives market</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Foreign exchange contracts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outright forwards and forex swaps</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Currency swaps</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Options</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>B. Interest rate contracts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRAs</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Swaps</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Options</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>C. Equity-linked contracts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forwards and swaps</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Options</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>D. Commodity contracts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
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<tr>
<td>Forwards and swaps</td>
<td></td>
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<tr>
<td>Options</td>
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<tr>
<td>E. Credit default swaps</td>
<td></td>
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<tr>
<td>Single-name instruments</td>
<td></td>
<td></td>
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<tr>
<td>Multi-name instruments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Derivative financial instruments traded on organized exchanges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Futures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currency</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Equity index</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>B. Options</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currency</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Equity index</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

http://www.bis.org/publ/rpfx07h.htm
2. RBI circular dated Jul 1, 2008 regarding Risk Management and Inter-bank dealings.
5.15 Summary of responses to Questionnaire:
Indian companies are satisfied with existing products available for FX risk management. RBI and Government policies are satisfactory. Technical indicators are used for short term hedging. In the medium term, the positions are kept open. The fundamentals are referred but not depended on as RBI intervenes to ensure stability of INR when it becomes volatile. USD/INR exchange rates are mainly driven by Demand and Supply rather than interest rate differential. Companies use products across the spectrum like forwards, options, swaps, FRAs for managing FX Exposure. If RBI publishes the composition of REER and prescribe the range (say 3-5%) +/- it would help corporate. Public sector banks take the major share of FX business followed by private sector and then foreign banks. Market participants prefer gradual depreciation of Indian Rupee.

5.16 Strengthening of USD hurts export earnings and makes import cheaper for India and vice-versa. Accordingly any un-hedged portions shall result in a loss or gain. Thus, currency risk due to an unfavorable change in the value of USD/INR will result in an unpredictable decrease in earnings, cash flow or value.

Each individual investment or trading or exchange cover decision should be viewed as discrete decision. A clear objective should be set, with risks identified and managed before the decision is implemented. It should be ensured that the company is not over exposed to any particular risk.79 Company executives are required to verify the rates, confirmations etc. given by banks and check MTM of the positions, periodically and report to management to take necessary and appropriate action.

5.17 Successful Currency Risk Management
It is essential to systematically implement hedging action as long as the market provides prices which cover a company's budgeted costs/realisation prices so that any adverse movements in USD/INR rates will not cause pressure on margins and also corporates will not be caught unaware all of a sudden. The best hedging decisions are made when risk managers acknowledge that market movements are unpredictable. A hedge should always seek to minimize risk. It should not represent a gamble on the direction of market prices.

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79 HSBC, The Treasurer's Guide to Investing Corporate Cash, page 50
advantage by minimizing the risks that are not central to the basic business. Ultimately, hedging increases shareholder value by reducing the cost of capital and stabilizing earnings.

**Graph 30: Seven steps to successful Currency Risk Management**

1. **Risk Definition**: Define the type of currency risk to be managed
2. **Measurement methodology**: Create a model to measure the currency exposure to be managed
3. **Exposure gathering**: Gather data and calculate exposure
4. **Covering Strategy**: Determine to what extent and how exposure will be hedged
5. **Hedge Execution**: Hedge exposure through trade execution and other techniques
6. **Internal Control/Monitoring mechanism**: Periodical review and improvements required
7. **Repeat Steps 1 to 6**

Another critical factor to consider when determining which risks to hedge is the materiality of the potential loss that might occur if the exposure is not hedged. As noted previously, a corporation's optimal risk profile balances the benefits of protection against the costs of hedging. Unless the potential loss is material (i.e., large enough to severely impact the corporation's earnings) the benefits of hedging may not outweigh the costs, and the corporation may be better off not hedging.

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corporation’s earnings) the benefits of hedging may not outweigh the costs, and the corporation may be better off not hedging.

6.18 Measurement of Risk exposures
To measure their risk exposure at a central level, corporates can make use of a few complex models of risk valuation such as Value at Risk (VaR) and sensitivity analysis to the extent possible considering the risk/return trade off.

Clearly, performance measurement standards, accountability and limits of some form must be part of a treasury foreign currency hedging program. Space does not permit a detailed examination of trading control methods, but some broad principles can be stated.

First, management must elucidate the goals of exchange risk management, preferably in operational terms rather than in platitudes such as “we hedge all foreign exchange risks.”

Second, the risks of in-house trading (for that’s often what it is) must be recognized. These include losses on open positions from exchange rate changes, counterparty credit risks, and operations risks.

Third, for all net positions taken, the firm must have an independent method of valuing, marking-to-market, the instruments traded. This marking to market need not be included in external reports, if the positions offset other exposures that are not marked to market, but is necessary to avert hiding of losses. Wherever possible, marking to market should be based on external, objective prices traded in the market.

Fourth, position limits should be made explicit rather than treated as “a problem we would rather not discuss.” Instead of hamstringing treasury with a complex set of rules, limits can take the form of prohibiting positions that could incur a loss (or gain) beyond a certain amount, based on sensitivity analysis. As in all these things, any attempt to cover up losses should reap severe penalties.

Finally, counterparty risks resulting from over-the-counter forward or swap contracts should be evaluated in precisely the same manner as is done when the firm extends credit to, say,
suppliers or customers. In all this, the chief financial officer might well seek the assistance of an accounting or consulting firm, and may wish to purchase software tailored to the purposes.

5.19 FX Exposure Management Policy

It is essential to have a well documented Policies and procedures highlighting the following items for efficient FX management.

- Mission
- Objectives
- Definitions
- Policy guidelines
- Roles and responsibilities
- FX Exposure management
- Controls – Reporting & Corrective actions

It should be approved by The Board and senior management and be reviewed annually and revised incorporating the latest changes in the market.

5.20 Familiarity with the products

Lack of familiarity with derivative products may deter corporate managers in risk management. It is felt that Derivatives are complex to understand. The fact is that most derivative solutions are constructed from two basic instruments: forwards and options, which comprise the following basic building blocks:

<table>
<thead>
<tr>
<th>Forwards</th>
<th>Swaps</th>
<th>Futures</th>
<th>FRAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Options</td>
<td>Caps</td>
<td>Floors</td>
<td>Puts</td>
</tr>
<tr>
<td>Calls</td>
<td>Swaptions</td>
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Structured products: Combination of options, exchange rates, indices etc.

The manager who understands these will be able to understand more complex structures which are simply combinations of the two basic instruments. Some companies, feeling that foreign exchange is best handled by professionals, hire ex-bank dealers; other groom engineers or accountants. Yet however talented and honorable are these individuals, it has become evident that some limits must be imposed on the trading activities of the corporate treasury, for losses can get out of hand even in the best of companies. In addition, all the
market participants should try to leverage on the Currency futures introduced in India on Aug 29, 2008. It should be used for skill development within company as well as at a broader industry level.

5.21 Market risk and Value at Risk (VaR)

The major components of market risk are: Foreign exchange risk, Interest rate risk, Equity risk, Commodity risk.

VAR is a statistical methodology that helps risk managers to aggregate risk numbers across business and product lines in a meaningful way. This helps to impose risk limits on market risk exposure, and it helps them to manage and optimize risk across their various portfolios – at a corporate level as opposed to a trading desk level.

VAR estimations provide information about the potential for losses in value for a given position or portfolio. Of course, over any time horizon, a portfolio can lose 100% of its value – maybe even more if the portfolio is leveraged. So VAR is an estimate of the possible size of loss over a given time period, and for a given level of confidence.

For example, if the parameters of the model have been set conservatively, a senior executive looking at a VAR number might be able to think, “There’s a 99% chance that our losses won’t exceed that VAR number within the stated time horizon”. There are three ways to calculate VAR: the variance-covariance approach, historical simulation and Monte Carlo analysis.

Though the VaR is more useful to financial institutions and banks, major corporates with large exposure to FX risk can also use this method to estimate the potential losses.

5.22 With Globalisation it is projected that corporate FX volumes rise to USD 1 trillion by 2010. Currency volatility is expected to ride the same wave rising from 10% in 2007 to 13.9% in 2010 according to British Bankers Association. While market forces have converged to make foreign exchange exposure management more critical than ever, Accounting Standards in India and International Accounting Standards have added more

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scrutiny to the process. A systematic method to identify the FX exposure and its management is becoming increasingly complex, especially in MNCs and is challenging. With the emergence of high FX volatility Indian Companies are also expected to face difficult situations in P&L if they do not take pre-caution and put necessary risk management processes in place with proper systems and controls.

5.23 RBI issues notifications and circulars prescribing the guidelines for carrying out transactions related to Foreign Exchange from time to time.

The major areas covered are:

- Direct Investment by Residents in JVs/Wholly Owned Subsidiary (WOS) abroad
- Export of Goods and Services
- External Commercial Borrowings and Trade Credits
- Foreign Investment in India
- Import of Goods and Services
- Miscellaneous Remittances from India – Facilities for Residents
- Non-Resident Ordinary Rupee (NRO) Account
- Remittance Facilities for NRIs/Persons of Indian Origin / Foreign Nationals
- Risk Management and Inter-Bank Dealings

5.24 Inferences from past data:

From the trend analysis of data variables and exchange rate for 15 years between 1990-2005 as given below and also the statistical analysis carried out in appendices and historical trend charts prepared, it can be observed that the exchange rate is dependent on these fundamental factors as well. Therefore it is pertinent for the company executives/risk managers to keep a watch on these factors, especially while deciding on long term hedging decisions.
It is suggested that Finance/Treasury/Senior Management officials keep track of the new changes introduced by the central bank and take necessary action suitable to their organisation, like amendments to FX Policy, modifying the strategies for hedging/trading decisions, unwinding the bookings etc. They can refer to www.rbi.org.in or get in touch with their Bankers for details and interpretation. And it should be submitted to senior management for decision making, if any, periodically. If the marks to market valuations are negative, it should be highlighted and informed to senior management and Boards for information and corrective action if required.