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## **Corporate Behaviours towards Foreign Exchange Risk Management Practices: An Investigative Study in Indian Scenario**

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### ***Abstract***

Indian economy in the post-liberalisation era has witnessed increasing awareness of the need for introduction of various risk management products to enable hedging against market risk in a cost effective way. This industry-wide, cross-sectional study concentrates on recent foreign exchange risk management practices and derivatives product usage by large non-banking Indian-based firms. The study is exploratory in nature and aims at an understanding the risk appetite and FERM (Foreign Exchange Risk Management) practices of Indian corporate enterprises. This study focuses on the activity of end-users of financial derivatives and is confined to 501 non-banking corporate enterprises. A combination of simple random and judgement sampling was used for selecting the corporate enterprises and the major statistical tools used were Correlation and Factor analysis. The factor analysis finds that there are three derived factors of non-usage of derivative products namely, Perceptual Issues, Technical & policy factor and Pricing & Cost considerations. Further, the correlation analysis reveals positive relation between the nine variables representing the reasons as non-usage of derivatives by Indian corporates. The study finds wide usage of derivative products for risk management and the prime reason of hedging is reduction in volatility of cash flows. VAR (Value-at-Risk) technique was found to be the preferred method of risk evaluation by maximum number of Indian corporate. Further, in terms of the external techniques for risk hedging, the preference is mostly in favour of forward contracts, followed by swaps and cross-currency options This article throws light on various concerns of Indian firms regarding derivative usage and reasons for non-usage, apart form techniques of risk hedging, risk evaluation methods adopted, risk management policy and types of derivatives used.

**Key Words:** Foreign Exchange, Financial Derivatives, Hedging, Risk, Factor Analysis, Correlation.

## Introduction

To ascertain the FERM practices, and product usage, of The Indian economy saw a sea change in the year 1999 whereby it ceased to be a closed and protected economy, and adopted the globalisation route, to become a part of the world economy. In the pre-liberalisation era, marked by State-dominated, tightly regulated foreign exchange regime, the only risk management tool available for corporate enterprises was, 'lobbying for government intervention'. With the advent of LERMS (Liberalised Exchange Rate Mechanism System) in India, in 1992, the market forces started to present a regime with steady price volatility as against the earlier trend of long periods of constant prices followed by sudden, large price movements. The unified exchange rate phase has witnessed improvement in informational and operational efficiency of the foreign exchange market, though at a halting pace. In the corporate finance literature, research on risk management has focused on the question of why firms should hedge a given risk. The literature makes the important point that measuring risk exposures is an essential component of a firm's risk management strategy. Without knowledge of the primitive risk exposures of a firm, it is not possible to test whether firms are altering their exposures in a manner consistent with theory. Recent product innovations in the financial markets and the use of these products by the corporate sector are also examined. In addition to the traditional "physical" products, such as spot and forward exchange rates, the new "synthetic" or derivative products, including options, futures and swaps, and their use by the corporate sector is considered. These synthetic products have their market value determined by the value of a specific, underlying, physical product. The spurts in foreign investments in India have led to substantial increase in the quantum of inflows and outflows in different currencies, with varying maturities. Corporate enterprises have had to face the

challenges of the shift from low risk to high-risk operations involving foreign exchange. There was increasing awareness of the need for introduction of financial derivatives in order to enable hedging against market risk in a cost effective way. Earlier, the Indian companies had been entering into forward contracts with banks, which were the Authorised Dealers (AD) in foreign exchange. But many firms preferred to keep their risk exposures un-hedged as they found the forward contracts to be very costly. In the current formative phase of the development of the foreign exchange market, it will be worthwhile to take stock of the initiatives taken by corporate enterprises in identifying and managing foreign exchange risk.

## Significance of the Study

India had earlier followed a tightly regulated foreign exchange regime. The liberalisation of the Indian economy started in 1991. The 1992-93 Budget provided for partial convertibility of Indian Rupee in current accounts and, in March 1993, the Rupee was made fully convertible in current account. Demand and supply conditions now govern the exchange rates in our foreign exchange market. A fast developing economy has to cope with a multitude of changes, ranging from individual and institutional preferences to changes in technology, in economic policies, in regulations etc. Besides, there are changes arising from external trade and capital account interactions. These generate a variety of risks, which have to be managed. There has been a sharp increase in foreign investment in India. Multi-national and trans-national corporations are playing increasingly important roles in Indian business. Indian corporate units are also engaging in a much wider range of cross border transactions with different countries and products. Indian firms have also been more active in raising financial resources abroad. All these developments combine to give a boost to

cross-currency cash flows, involving different currencies and different countries.

The corporate enterprises in India are increasingly alive to the need for organised fund management and for the application of innovative hedging techniques for protecting themselves against attendant risks. Derivatives are the tools that facilitate trading in risk. The foreign exchange market is still evolving and corporate enterprises are going through the movements in transition from a *passive* to an *active* role in risk management. There is no organised information available on how the corporate enterprises in India are facing this challenge. It is in this context that a review of the perceptions and concerns of the corporates, in relation to derivatives and of their initiatives in tuning the organisational set up to acquire and adopt the requisite skills in risk management, assumes significance. Appropriate policy and other measures can then be taken to accelerate the process of further development of foreign exchange market and also upgrade foreign exchange

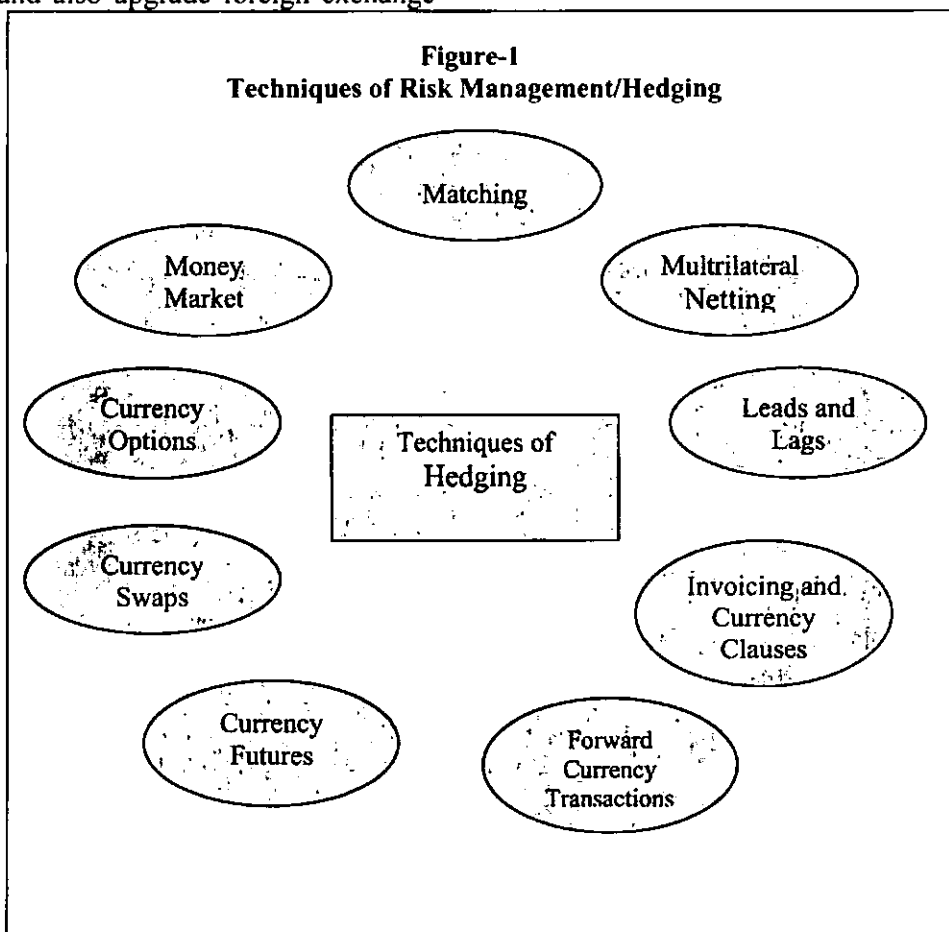
risk management (FERM) with higher professionalism and increased effectiveness.

**Objectives of the Study**

- a) Indian non-financial corporate enterprises.
- b) To know the attitudes, perceptions and concerns of Indian firms towards FERM.
- c) To understand the level of awareness of derivatives and their uses, among the firms.
- d) To ascertain the organisation structure, policy-making and control process adopted by the firms, which use derivatives, in managing foreign exchange exposure.

**Currency Risk Management Techniques**

A firm may choose any one or any set of combinations of the following techniques (Figure-1) to manage foreign exchange rate risks.



i) *Matching*: Cash inflows in one of the pairing currencies can be offset against cash flows in the others. A firm can balance its receivables and payables in the same currency. Firms may also deliberately influence the balance by arranging short or long term loans or deposits.

ii) *Multi-lateral Netting*:- The netting can be done between inflows and outflows of different currencies arising from cross-border transactions of the different entities in the group. This, of course, requires a comprehensive information system concerning foreign exchange dealings of the group companies.

iii) *Leads and Lags*: Within the boundaries of the terms of the trading contracts or in keeping with prevailing commercial practices and within the existing regulations, payments to trading partners or foreign subsidiaries, in currencies whose values are expected to appreciate or depreciate, can be accelerated or delayed.

iv) *Invoicing and Currency Clauses*: Trading companies may, sometimes, have options to invoice their cross-border sales or purchases, in domestic currency, so that the other party absorbs exchange rate risk. Similar choices of invoicing in third country currencies may also be negotiated with trading partners. There are instances of invoicing in terms of *currency baskets*, comprising a composite index of different national currencies that have been allotted predetermined weights. Judiciously employed, this can help in reducing the impact of volatility of exchange rates.

v) *Forward Currency Transactions*: This involves an agreement between two parties, a buyer and a seller, to buy/sell a currency at a later date at a fixed price. Forward currency contracts can be easily arranged with banks, which are ADs in foreign exchange. A forward contract has the advantage of locking in the exchange rate at an agreed level, protecting from adverse movement in exchange rates.

vi) *Currency Futures*: This involves an agreement between two parties, a buyer and a seller, to purchase/sell a currency at a later date at a fixed price, and that it trades on the futures exchange and is subject to a daily settlement procedure to guarantee each party that claims against the other party will be paid. In India, we are yet to have a futures exchange and clearing house for financial futures.

vii) *Currency Options*: Currency options offer the holder the *right*, but not the *obligation*, to buy or sell foreign currency at an agreed price, within a specified period of time. Generally, on most exchanges, options are not constructed on the underlying market, but rather convey the right to buy or sell the futures contract. There can be exchange-traded options as also OTC options.

viii) *Currency Swaps*: A financial swap is a transaction in which two parties agree to an exchange of payments over a specified time period. It is ordinarily marked by an exchange of principals, which may be actual or notional. In a cross currency swap, the counter-parties exchange principals in different currencies at an exchange rate that is usually the current spot rate and reverse the exchange at a later date, usually at the same exchange rate.

ix) *Money Market Hedging*: Companies that have need to raise medium term foreign currency loans should explore the possibility of reducing currency risk by raising them in currencies in which they have medium term exposure in terms of receivables and assets in these currencies.

## Review of Literature

*Collier and Davis (1985)* in their study about the organisation and practice of currency risk management by U.K. multinational companies. The findings revealed that there is a degree of centralised control of group currency risk management and that formal exposure management policies

existed. There was active management of currency transactions risk. The preference was for risk-averse policies, in that automatic policies of closeout were applied.

*Batten, Metlor and Wan (1992)* focussed on foreign exchange risk management practice and product usage of large Australia-based firms. The results indicated that, of the 72 firms covered by the Study, 70% of the firms traded their foreign exchange exposures, acting as foreign exchange risk bearers, in an attempt to optimise company returns. Transaction exposure emerged as the most relevant exposure.

*Jesswein et al. (1993)* in their study on use of derivatives by U.S. corporations, categorises foreign exchange risk management products under three generations: Forward contracts belonging to the *First Generation*; Futures, Options, Futures-Options, Warranties and Swaps belonging to the *Second Generation*; and Range, Compound Options, Synthetic Products and Foreign Exchange Agreements belonging to the *Third Generation*. The findings of the Study showed that the use of the third generation products was generally less than that of the second-generation products, which was, in turn, less than the use of the first generation products. The use of these risk management products was generally not significantly related to the size of the company, but was significantly related to the company's degree of international involvement.

### **Methodology of the Study**

An exploratory survey, by way of extensive literature review of books, journals and other published data related to the focus of the study, as also concerned websites, was carried out to gather background information about the general nature of the research problem.

*Phillips (1995)* in his study focused on derivative securities and derivative contracts found that organisations of all sizes faced financial risk exposures, indicating a valuable opportunity for using risk management tools. The treasury professionals exhibited selectivity in their use of derivatives for risk management.

*Howton and Perfect (1998)* in their study examines the pattern of use of derivatives by a large number of U.S. firms and indicated that 60% of firms used some type of derivatives contract and only 36% of the randomly selected firms used derivatives. In both samples, over 90% of the interest rate contracts were swaps, while futures and forward contracts comprised over 80% of currency contracts.

*Hentschel and Kothari (2000)* identify firms that use derivatives. They compare the risk exposure of derivative users to that of nonusers. They find economically small differences in equity return volatility between derivative users and nonusers. They also find that currency hedging has little effect on the currency exposure of firms' equity, even though derivatives use ranges from 0.6% to 64.2% of the firm's assets. Our findings are very important since no previous work has examined the FERM practice in Indian context. This study will be a pioneering attempt in Indian scenario and first of its kind to survey the Indian companies and their risk management practices.

### *Sources of Data*

The main part of the Study deals with Indian corporate enterprises' awareness of and attitudes to foreign exchange risk exposure. The required data was collected through the pre-tested questionnaire administered on a judgement sample of 501 corporate enterprises, located in different parts of the country. The administration of the questionnaire was done through multiple channels, which included surface mail, e-mail and personal involvement.

Information relating to contemporary practices abroad was obtained from published sources such as journals, reports, and from related websites.

### *Samples for the Study*

The survey was accomplished with the pre-tested questionnaire administered on 501 corporate enterprises in India (banks and subsidiaries of foreign multi-nationals not included), having foreign exchange exposure. A combination of simple random and judgement sampling was used for selecting the corporate enterprises for the exploratory Study. As against the 850 questionnaires circulated, 588 responses were received. Of these, 37 had to be eliminated, as they were incomplete in many respects. The respondents are spread over 18 different major industry classifications. The sample covers both old economy corporates like Manufacturing, Minerals, Trade, Oil etc., and new economy corporates including Information Technology (IT), Information Technology Enabled Services (ITES), Business Process Outsourcing (BPO) etc., and they vary notably in size. The respondents to the questionnaire are financial executives with responsibility for FERM and for hedging foreign exchange risk exposure by use of derivatives. The Study is exploratory in nature and aims at an understanding of the risk appetite and FERM practices of Indian corporate enterprises. It also embraces an understanding of the policy or other constraints or impediments faced by the enterprises in managing foreign exchange exposure. The Study has its focus on the activity of end-users of derivatives and, hence, is confined to non-banking corporate

## **Results and Findings of the Study**

### *Profiles of Respondents*

The enterprises covered in the sample are from 18 categories of industries (Figure-2). Four sectors including Paints, Print Media, Gems and Jewellery, and Textiles

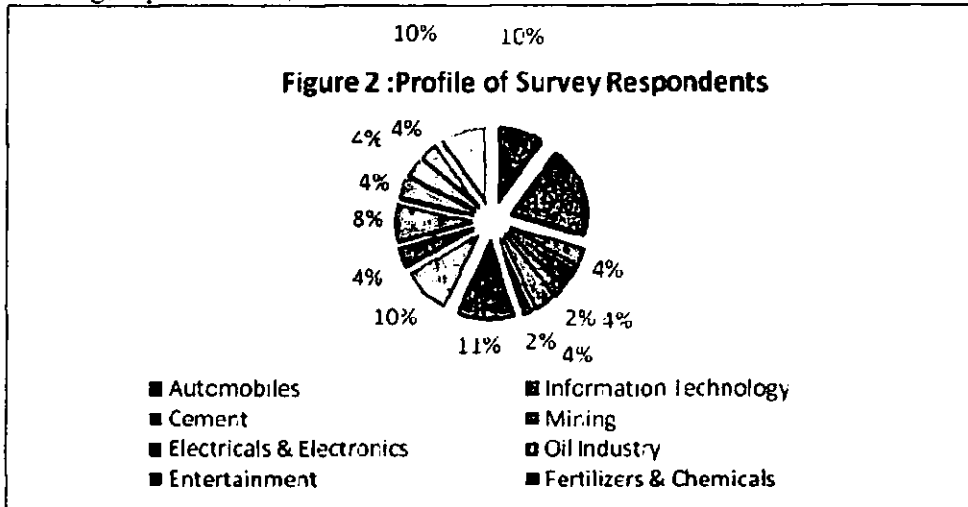
enterprises. Since banks both use and sell derivatives, they have not been included in the scope of the Study. Risk management practices of Indian subsidiaries of MNCs are determined by their parent companies and, hence, they do not form part of this Study. In analysing the responses, the Microsoft Excel Spreadsheet and the Statistical Package for Social Sciences (SPSS) have been used. Factor Analysis, using Principal Component Method, was done wherever there was need to reduce variables into factors. Correlation analysis was also done, as needed, to find the extent of relationship between the variables representing the reasons for non-usage of derivative by Indian companies.

Factor Analysis identifies common dimensions of factors from the observed variables that have a high correlation with the observed and seemingly unrelated variables but no correlation among the factors. Principle Component Analysis is the commonly used method for grouping the variables under few unrelated factors. A factor is a linear combination of original variables factors also represent the underlying dimensions that summarize in account for the original set of observed variables. An important concept in factor analysis is the rotation of factors. It is proposed to use Varimax Rotation to simplify the factor structure. The final step in factor analysis would be naming the factors. This labelling would be intuitively developed by the factor analyst based upon the appropriateness for representing the underlying dimensions of a particular factor. The data analysis has been conducted by using MS-Excel Spreadsheets and SPSS 14.0 software packages.

did not respond. Thus, the Study covers responses from 501 enterprises. The sizes of the enterprises, in terms of turnover as well as international involvement (expressed as the sum of values of imports and exports and external commercial borrowings) varied considerably. Maximum number of responses came from

the IT category, reflecting the dominance of international transactions in that sector. The foreign transactions were mostly denominated in US dollars, with Euro, Pound Sterling, Japanese Yen, Swiss Franc

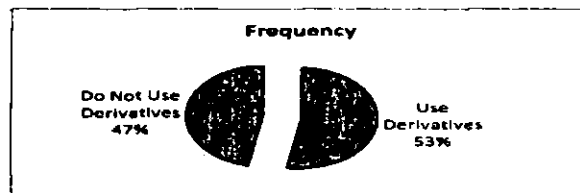
and Deutsche Mark following in that order.



**Use of Derivatives**

Among the 501 respondents (Figure-3), 266 companies (53%) reported using derivatives and the others are not using derivatives. Quite a few returned the

questionnaire blank, with the apology that they are not using derivatives. It seems many enterprises are yet to tune in to the need for planned management of exchange risk exposure.



**Table-1:**  
**Eigen value of variables of non-usage of Derivatives**  
**(Under Various Derived Factors)**

Variables	Attributes	F1	F2	F3	Weighted Mean Points
V1	Exposures are not significant	0.6128			33
V2	Exposures are more effectively managed by other means	0.5122			32
V3	Difficulty in pricing and valuing derivatives			0.56895	5
V4	Lack of knowledge about derivatives		0.6552		9
V5	Concerns about the perceptions of derivative use	0.5761			7
V6	Costs exceed the benefits			0.6058	15

V7	Policy restrictions		0.55896		14
V8	Risk of the products			0.62892	8
V9	General reluctance and fear	0.6325			4

Note: F1, F2 and F3 are the three derived factors.

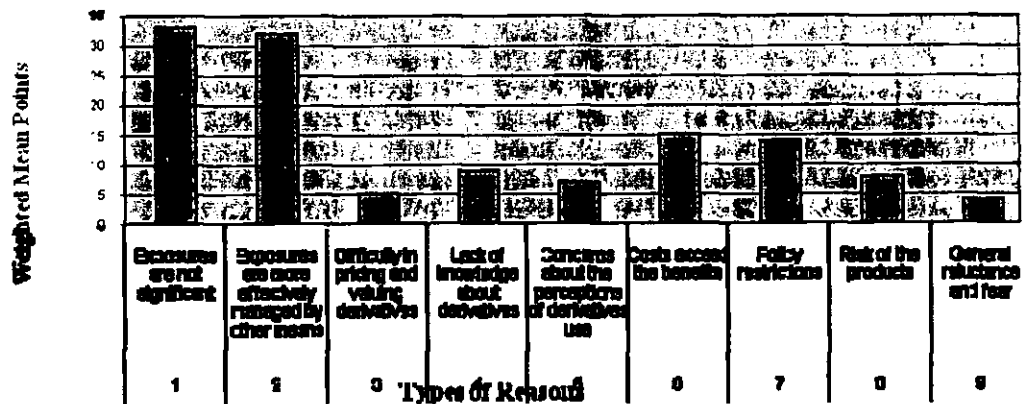
**Table-2**  
**Ranking of Derived Factors & the Underlying variables for Non-usage of Derivatives**

Derived Factors	Mean Score	Ranking of Factors	Underlying variables
F1-Perceptual Issues	19.0	1 <sup>st</sup>	V1- Exposures are not significant V2- Exposures are more effectively managed by other means V5- Concerns about the perceptions of derivative use V9- General reluctance and fear
F2-Technical & policy factor	10.5	2 <sup>nd</sup>	V4- Lack of knowledge about derivatives V7- Policy restrictions
F3-Pricing & Cost considerations	9.67	3 <sup>rd</sup>	V3- Difficulty in pricing and valuing derivatives V6- Costs exceed the benefits V8- Risk of the products

**Table-3**  
**Correlation coefficients between the variables of non-usage of Derivatives**

	V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	V <sub>5</sub>	V <sub>6</sub>	V <sub>7</sub>	V <sub>8</sub>	V <sub>9</sub>
V <sub>1</sub>	1.0								
V <sub>2</sub>	0.451	1.0							
V <sub>3</sub>	0.632	0.231	1.0						
V <sub>4</sub>	0.713	0.105	0.6432	1.0					
V <sub>5</sub>	0.0912	0.310	0.5822	0.1872	1.0				
V <sub>6</sub>	0.425	0.281	0.0923	0.1755	0.0322	1.0			
V <sub>7</sub>	0.112	0.592	0.1065	0.5419	0.0437	0.0320	1.0		
V <sub>8</sub>	0.197	0.210	0.1237	0.4872	0.9231	0.8419	0.0231	1.0	
V <sub>9</sub>	0.459	0.104	0.1349	0.0933	0.8932	0.7833	0.5676	0.5437	1.0

**Figure-4:- Reasons for Not Using Derivatives**





Factor Analysis reveals that there are three derived factors responsible for non-usage of derivatives by Indian corporate. Table-1 depicts the Eigen values regarding the nine variables of non-usage of derivatives products and the three derived factors, along with the weighted mean points of the variables. It is found that highest eigen value is seen for 'Lack of knowledge about derivatives' (0.6552) , followed by 'General reluctance and fear' (0.6325) and Risk of the products (0.62892). The last column of table-1 and figure-4 shows the values of weighted mean points of the nine variables. It is observed that highest mean point is for 'Exposures are not significant' with 33 points, followed by 'Exposures are more effectively managed by other means' (32 points) and 'Costs exceed the benefits' (15 points).

Table 2 shows the value of mean score of the three derived factors and their ranking along with the underlying variables. It is seen that there are three derived factors namely, **Perceptual Issues, Technical & policy factor and Pricing & Cost considerations** with mean score of 19.0, 10.5 and 9.67, respectively. The first ranked factor (Perceptual Issues ) consists of 4 variables namely 'Exposures are not significant' , 'Exposures are more effectively managed by other means', 'Concerns about the perceptions of derivative use' and 'General reluctance and fear' as seen from the significant (higher than 0.5) eigen values under factor analysis. The second ranked factor (Technical & policy factor) includes two variables namely 'Lack of knowledge about derivatives' and 'Policy restrictions'. The third ranked factor (Pricing & Cost considerations) consists of three variables namely, 'Difficulty in pricing and valuing derivatives', 'Costs exceed the benefits' and 'Risk of the products'.

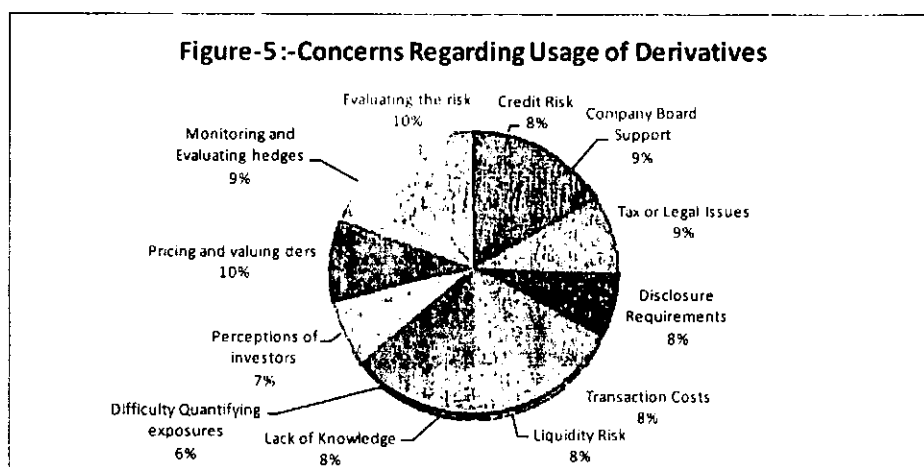
As to the nature of the transactions that are considered for hedging, the responses indicate that hedging is resorted

to mostly in respect of transactions involving contractual commitments, rather than foreign repatriations. There also seems to be a preference to restrict the hedging horizon to less than a year. 65% of the respondents were of the view that enough range of derivative instruments are not available yet. This has the effect of restricting arbitrage opportunities. A good majority felt the need for Rupee-Dollar Options (not in vogue at the time they responded to the questionnaire, but subsequently introduced in July 2003), while others wished that Exchange-Traded Futures were available. From the above, it can be seen that the Indian corporate enterprises are somewhat halting in their approach to the use of derivatives.

Table-3 shows the values of bivariate correlation coefficient of the nine variables (of non-usage of derivatives) with each other. The first variable 'Exposures are not significant' is found to be highly correlated ( positive relation) with V4- 'Lack of knowledge about derivatives' (0.713) followed by V3- 'Difficulty in pricing and valuing derivatives' (0.632) and V9- 'General reluctance and fear' (0.459). The second variable 'Exposures are more effectively managed by other means' is significantly and positively correlated with V7- Policy restrictions with correlation coefficient of 0.592. The third variable 'Difficulty in pricing and valuing derivatives' is found to be positively correlated with V4- 'Lack of knowledge about derivatives' having highest value of 0.6432. The fourth variable ('Lack of knowledge about derivatives') is found to be significantly correlated with V7-'Policy restrictions' (0.5419) and V8-'Risk of the products' (0.4872). Both the fifth variable ('Concerns about the perceptions of derivative use') and sixth variable ('Costs exceed the benefits') are not found to be significantly correlated with any other variables as evidenced from very small values of correlation coefficients (less than 0.10). The seventh variable ('Policy restrictions) is positively and significantly

correlated with V9- 'General reluctance and fear' with coefficient of 0.5676. The eight variable ('Risk of the products') has a

coefficient of 0.5437 with ninth variable 'General reluctance and fear'.



### ***Why do Companies Hedge?***

Responding to the question as to why companies' hedge, the most important reason adduced is 'to reduce the volatility of the cash flows'. Next in importance comes, 'maximising share holder value' and then, 'reducing volatility of reported accounting earnings'.

### ***What Risks are hedged?***

Predominantly derivatives are used to hedge currency risk. Next in importance comes interest rate risk and to a small extent equity risk.

### ***Types of Derivatives Used***

The First generation derivatives instruments are the most popular, the greatest preference being for simple Forward contracts. This is followed by Second-generation instruments, namely Swaps and Futures. Some corporates also used structured derivatives, which come in the Third Generation category. The Rupee-Dollar Options would have been largely preferred, but they were not available at the time of response to the questionnaire.

### ***Techniques of Hedging***

Among the internal techniques, the *natural hedge* is the most chosen option indicating the desire of the corporates, to match to the extent possible, their foreign currency outflows and inflows. To a lesser extent, internal techniques of leads and lags are also used.

As for the external techniques, the preference is mostly in favour of *forward contracts*, followed by swaps and cross-currency options. (It may be noted that at the time the questionnaire was administered, Rupee-Dollar Options was not in existence).

### ***Risk Management Policy and Guidelines***

On the question of the choice between 'hedging partially', 'hedging fully', or 'not hedging at all', the majority of the corporates (71%) are in favour of an open-ended hedging policy (hedge partially) preferring to watch and take action. 20% of the respondents say they hedge fully and 9% of them choose not to hedge at all.

Regarding risk management policy and guidelines, 50% of the responses confirm that they have a written policy. Among the others, many state that they are in the

process of framing a written policy and relevant guidelines.

In most cases, the policies are evolved and approved by the Board of Directors (BOD), or by a specially appointed Executive Committee (EC). In a large number of instances (42%), the risk management decisions are taken at the level of the EC and, in most other instances (35%), these decisions are taken by the Treasurer. Only in a limited number of instances (19%), does the BOD get involved in the day-to-day decisions on risk management. 70% of the respondents say that their risk management policies are structured in a strategic framework and almost the same percentage of respondents confirm that the risk management policy is framed independently, without reference to the hedging policy of the competitors. However, 30% of the respondents do take note of the policies of the competitors, while framing their own risk management policies.

50% of the respondents have a flexible posture on the role of the top management in analysing the foreign exchange exposure. They react to emergencies as and when needed. 40% of the respondents meet formally every quarter to analyse and take note of their underlying exposures. 46% of the respondents prefer to review their risk management policy on an ad-hoc basis, as and when needed. 24% of them have a quarterly review and 20%, a monthly review. 60% of the respondents prescribe an upper limit up to which a treasurer can trade in derivatives. A majority of the respondents make changes in their hedging strategies, in response to fluctuations in the exchange rates.

### **Role of the Treasury Department**

The Treasury Department plays a significant role in overseeing and/or executing the risk management function. 40% of the respondents consider their

treasury department to be 'service centres'. 28% of them view the treasury department as a 'cost centre'. Only 20% of the respondents consider their treasury departments to be profit centres. Those who regard their treasury department as profit centres, trade almost all in forward contracts, preferring to book the contracts, wait and watch the movements of the exchange rates, cancel the bookings and then rebook again. This may undergo a change, with the current availability of rupee-dollar options. Cross-currency options and swaps are also often utilised for speculation.

Only 20% of the respondents, who define their treasury department as profit centres, engage in pure speculation involving positions unrelated to their underlying exposures. The others maintain their positions related to their underlying exposures, watch the exchange rate movements and hedge with an eye on profits. The experiences on Treasury Department's functioning as a profit centre present a mixed picture. Many firms have reported moderate to substantial gains due to treasury department's actions and decisions with an eye on income / wealth generation. Some have also conceded that their positioning proved wrong occasionally, but they were successful in timing the market on several occasions, resulting in handsome profits. Over 90% of the respondents have less than 5 people in charge of risk management in their treasury department.

### **Dependence on External Services**

Market quote services appear to be the major reference point for exchange risk management decisions. There is also notable dependence on the dealers from whom the derivatives were bought, for guidance in risk management. Accounting firms seem to be the least preferred. 90% of the respondents are happy with the expertise that is outsourced. This may be an indication of the inadequacy of in-house talent, in managing exchange rate exposure.

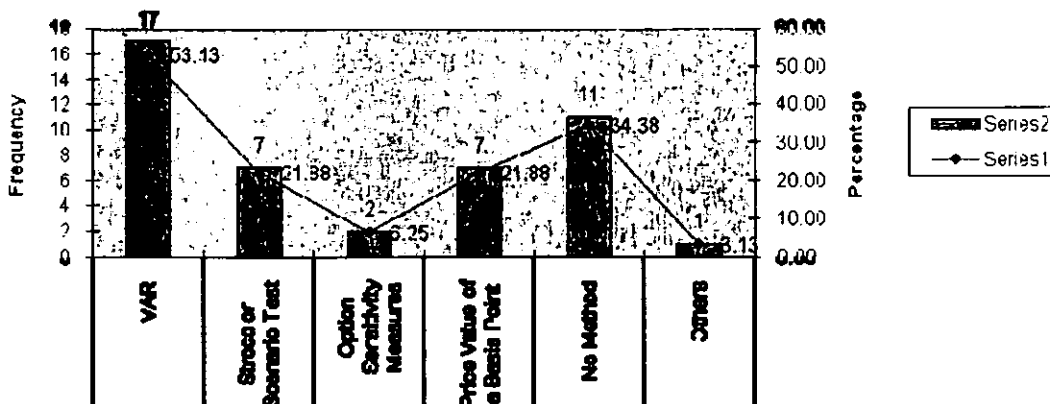
Or, it may be that outsourcing advice is found to be less expensive and more effective. Factor analysis has short-listed three factors as the sources of guidance in exchange risk management. They are, in the order of priority, 'derivatives dealers', 'consultancies' and then, 'in-house expertise'. Banks, by virtue of their active involvement in selling derivative products, have an edge over other agencies, in being able to provide specialised information, relevant to foreign exchange risk management.

**Review and Performance Measurement**

As shown in Figure- 6, about 60% of the respondents have a working system of review of the performance of the treasury department. Value-at-Risk (VAR), Stress or

Scenario Test and Price Value of a Basis Point are among the tools widely used for evaluating the risk associated with usage of specific derivatives. 34% of the respondents that use derivatives do not have a system of evaluating risks. VAR technique was the preferred method of risk evaluation by maximum number of Indian corporate. Providing information on the use of derivatives, in the published financial statements, is not yet mandatory in India. 51% of the respondents do not make any mention about the use of derivatives, in their annual reports. 22% of them provide a brief summary, 19% of them make a mere mention and 8% of the respondents report in detail. Further, 93% of the respondents feel happy with their respective risk management practices.

**Figure- 6 :- Methods of Evaluating Risk**



**Conclusion**

The advent of Globalisation has witnessed a rapid rise in the quantum of cross border flows involving different currencies, posing challenges of shift from low-risk to high-risk operations in foreign exchange transactions. The Study covers a sample of 501 corporate falling in 18 different categories. 53% of the respondents are using derivatives. The non-users of derivatives have cited *Confused Perceptions* of derivatives use, *Technical*

and *Administrative Constraints*, and *Fear of High Costs* of derivatives as reasons for not using derivatives. Even the users of derivatives have concerns arising from *Confused Perceptions* regarding investor expectations, *Pricing and Hedging*; they have *Policy and Legal* issues to be sorted out; *monetary considerations* involving transaction costs and liquidity problems also pose some anxiety. Quite a few do not

have adequate knowledge of the use of derivatives.

*Reduction in the volatility of cash flows* is the main reason for hedging. Hedging is mostly with reference to Currency risk, next in importance being Interest Rate risk and, marginally, Equity risk. The greatest preference is for simple Forward Contracts. Swaps and Cross Currency Options are moderately used. 40% of respondents consider the treasury department as a 'Service Centre', 28% as a 'Cost Centre', and 20% as a 'Profit Centre'. There is a noticeable preference for outsourcing advice for managing currency risk exposure. In most cases, Banks provide the necessary expertise and advice. A majority of the respondents have in use, a working system of performance review. They employ tools such as Value-at-Risk, Stress or Scenario Test, etc., for evaluating risk associated with usage of specific derivatives. The Currency Risk Management practices in India are evolving at a slow pace. At the Policy, Reporting, and Operational levels, there is need for a greater sense of urgency in developing foreign exchange market fully and using the hedging instruments effectively.

The framework developed in this research is based on a mental model of a medium-to-large manufacturing company producing industrial components, as perceived by the researcher. The complex nature of the relationship between the 'risk elements' and 'decision variables' may often be beyond human comprehension without the aid of special diagnostic and analytical tools. Decisions and actions in the area of FERM may have impact on other segments and activities in the enterprise. A larger interactive model capable of embracing all facets of enterprise-wide risk management needs to be developed. This is an area of further enquiry.

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