

Usage of Derivatives for Hedging FOREX Risk: An Investigation of Indian Companies

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With the turmoil in the global economy, Indian Rupee exchange rate has seen huge volatility against USD and other major foreign currencies in recent times. Hedging with derivative instruments is a feasible solution to this situation. This paper aims to provide a perspective on managing the risk that Indian companies faces due to fluctuating exchange rates. It investigates the prudence in investing resources towards the purpose of hedging and narrates the trends in foreign exchange exposure of Indian companies in international markets. It also analyzes the usage of different derivative contracts for hedging the foreign exchange risk by Indian companies.

The BSE SENSEX companies are taken as sample for secondary data analysis as it is representative of entire Indian market. It covers all major industries and these are the leading companies in India. An attempt has been made to find out the quantum of foreign exchange risk exposure and the tools used for hedging by respective companies from their published annual reports for the financial year 2007-08, 2008-09, 2009-10

Key words: Foreign Exchange Risk, Forwards, Futures, Options, Swaps

INTRODUCTION

With India Inc's Forex exposure rising to \$437bn at the end of December 2010, compared to the country's total Forex reserves of \$279bn, it's tempting to feel the situation is getting out of control. Companies with a substantial global presence could end up earning less due to exchange fluctuations like Bharti Airtel in some quarters. In other cases, if the rupee depreciates, India Inc could end up with higher debt- service obligations than it has bargained for. Indeed, the fact that several companies are facing Forex Risk and trying to handle this risk by way of hedging. Exchange rate volatility is one of the most difficult and unrelenting problems in the era of globalization. Besides market-determined fluctuations, there was a lot of volatility in other markets around the world owing to increased inflation and the oil shock. Firms with foreign transactions and obligations may face substantial losses due to adverse movements in exchange rates. Firms are exposed to the adverse movement of exchange rates because of three broad reasons. First, all foreign financial transactions involving cash payments must often be denominated in the creditor's domestic currency. As the exchange rates fluctuate between the time of contract and the date of payment, there is the possibility of losses because the amount of money that has to be available for conversion from the debtor's to creditor's currency at the payment date is larger than it was expected on the contract. Second, the exposure arises because of the size of the foreign transactions. Finally, the length between the date of contract and the date of payment is also the reason for firms' exposure to foreign exchange rate risk. Corporate struggled to cope with the uncertainty in profits, cash flows and future costs. It is financial derivatives – foreign currency, interest rate, and commodity derivatives emerged as means of managing risks for companies. In India, exchange rates were deregulated and were allowed to be determined by markets in 1993. The economic liberalization of the early nineties facilitated the introduction of derivatives based on interest rates and foreign exchange. However derivative use was highly regulated area due to the partial convertibility of the rupee. Forwards, swaps and options were available in India and the use of foreign currency derivatives was permitted for hedging purposes only. Now in India, Currency Futures are available for trading with limited pair of currency.

This paper aims to provide a perspective on managing the risk that Indian companies faces due to fluctuating exchange rates. It investigates the prudence in investing resources towards the purpose of hedging and narrates the trends in foreign exchange exposure of Indian companies in

international markets. It also analyzes the usage of different derivative contracts for hedging the foreign exchange risk by Indian companies. It has been observed that the recent rise in volatility of US Dollar caused lots of Forex risk to Indian companies. While weakening rupee is beneficial for exporters, it adversely affects imports across import-intensive industries, including petroleum products. Imports are costlier for the payments made in US dollars. India is the world's largest importer of pulses, cooking oil and fertilizers. A sharp depreciation in the value of rupee negates the impact of fiscal measures, such as imposition of export duties to fulfill domestic demand, undertaken by the government to cool down inflation. Hedging with derivative instruments is a feasible solution to this situation.

FOREIGN EXCHANGE RISK AND EXPOSURE

The word risk is often used interchangeably with exposure. Although these words have a close relationship, the meaning is different. The risk is usually concerned with the probability of an unexpected outcome, while exposure is concerned with the magnitude of the possibility of loss. The definition of foreign exchange risk differs to foreign exchange exposure. Foreign exchange risk can be defined as "related to the variability of domestic-currency values of Assets, liabilities, or operating incomes due to unanticipated changes in exchange rates, whereas foreign exchange exposure is "what is at risk". Foreign exchange risk arises as a result of uncertainty about the future spot exchange rate. It is a result of uncertainty about the future spot exchange rate (due to the variability of exchange rates), the domestic value of assets, liabilities, operating incomes, profit, rates of return, and expected cash flows that are stated in foreign currency are uncertain. Exposure can exist on assets, liabilities, and operating incomes. Exposure exists on foreign assets when the real domestic currency value of foreign assets rises and when the foreign currency appreciates, and vice versa.

FOREX RISK MANAGEMENT

Risk management techniques vary with the type of exposure and term of exposure. Economic exposure is the extent to which a firm's market value, in any particular currency, is sensitive to unexpected changes in foreign currency. Currency fluctuations affect the value of the firm's operating cash flows, income statement, and competitive position, hence market share and stock price. Currency fluctuations also affect a firm's balance sheet by changing the value of the firm's assets and liabilities, accounts payable, accounts receivables, inventory, loans in

foreign currency, investments in foreign banks; this type of economic exposure is called balance sheet exposure. Accounting exposure, also called translation exposure, results from the need to restate foreign subsidiaries' financial statements into the parent's reporting currency and is the sensitivity of net income to the variation in the exchange rate between a foreign subsidiary and its parent. Transaction Exposure is a form of short term economic exposure due to fixed price contracting in an atmosphere of exchange-rate volatility. The most common definition of the measure of exchange-rate exposure is the sensitivity of the value of the firm, to an unanticipated change in an exchange rate. This is calculated by using the partial derivative function where the dependant variable is the firm's value and the independent variable is the exchange rate (Adler and Dumas, 1984)¹. It is believed that the exchange rate changes are not predictable and it is determined by the efficiency of the Forex markets. Research in the area of efficiency of foreign exchange markets has thus far been able to establish only a weak form of the efficient market hypothesis conclusively which implies that successive changes in exchange rates cannot be predicted by analyzing the historical sequence of exchange rates (Soenen, 1979)². However, when the efficient markets theory is applied to the foreign exchange market under floating exchange rates there is some evidence to suggest that the present prices properly reflect all available information (Giddy and Dufey, 1992)³. This implies that exchange rates react to new information in an immediate and unbiased fashion, so that no one party can make a profit by this information and in any case, information on direction of the rates arrives randomly so exchange rates also fluctuate randomly. It implies that foreign exchange risk management cannot be done away with by employing resources to predict exchange rate changes.

HEDGING FOREX RISK WITH DERIVATIVES

There are different views in favor and against the hedging of forex risk. Some companies are of opinion that hedging techniques are speculative and do not fall in their area of expertise hence they should not venture into hedging practices. Some of companies are not at all aware of being exposed to foreign exchange risks while others are aware of the various risks they face, but are

¹ Adler, M., & Dumas, B. (1984). Exposure to currency risk: Definition and measurement. *Financial Management*, Vol. 13 No.2

² Soenen, Luc A (1979) *Foreign exchange exposure management: A portfolio approach*, ISBN 9028603093

³ Giddy, Ian H and Dufey, Gunter, 1992, *The Management of Foreign Exchange Risk*, Available at: <http://pages.stern.nyu.edu/~igiddy/fxrisk.htm>.

unaware of the methods to guard against the risk. There is yet another set of companies who believe shareholder value cannot be increased by hedging the firm's foreign exchange risks as shareholders can themselves individually hedge against the same using instruments like forward contracts available in the market or diversify such risks out by manipulating their portfolio. The existence of different kinds of market imperfections, such as incomplete financial markets, positive transaction and information costs, probability of financial distress and restrictions on free trade, make Forex Management an appropriate concern for corporate risk management. (Giddy and Dufey, 1992)⁴ It has also been argued that a hedged firm, being less risky can secure debt more easily and this enjoy a tax advantage (interest is excluded from tax while dividends are taxed). This would negate the Modigliani-Miller proposition as shareholders cannot duplicate such tax advantages. The MM argument that shareholders can hedge on their own is also not valid on account of high transaction costs and lack of knowledge about financial manipulations on the part of shareholders. There is also a vast pool of research that proves the efficacy of managing foreign exchange risks and a significant amount of evidence showing the reduction of exposure with the use of derivatives. In one of the more recent studies, Allayannis and Ofek (2001)⁵ use a multivariate analysis on a sample of S&P 500 non-financial firms and calculate a firm's exchange-rate exposure and isolate the impact of use of foreign currency derivatives (part of foreign exchange risk management) on a firm's foreign exchange exposures. They find a statistically significant association between the absolute value of the exposures and the (absolute value) of the percentage use of foreign currency derivatives and prove that the use of derivatives in fact reduced exposure.

HEDGING INSTRUMENTS:

A derivative is a financial contract whose value is derived from the value of some basic underlying financial asset, such as a stock price, a commodity price, an exchange rate, an interest rate, or even an index of prices. The main role of derivatives is that they reallocate risk among financial market participants, help to make financial markets more complete. The most popular hedging instruments for the Forex Risk are Forwards, Futures, Options and Swaps.

⁴ Ibid

⁵ Allayannis, George, and Eli Ofek, (2001), Exchange-Rate Exposure, Hedging and the Use of Foreign Currency Derivatives, *Journal of International Money and Finance*, Vol. 20, pp. 273-296

A forward contract is made to measure agreement between two parties to buy/sell a specified amount of a currency at a specified rate on a particular date in the future. A futures contract is similar to the forward contract but is more liquid because it is traded in an organized exchange i.e. the futures market. A currency Option is a contract giving the right, not the obligation, to buy or sell a specific quantity of one foreign currency in exchange for another at a fixed price; called the Exercise Price or Strike Price. The fixed nature of the exercise price reduces the uncertainty of exchange rate changes and limits the losses of open currency positions. Options are particularly suited as a hedging tool for contingent cash flows, as is the case in bidding processes. Call Options are used if the risk is an upward trend in price of the currency, while Put Options are used if the risk is a downward trend. A swap is a foreign currency contract whereby the buyer and seller exchange equal initial principal amounts of two different currencies at the spot rate. The buyer and seller exchange fixed or floating rate interest payments in their respective swapped currencies over the term of the contract. At maturity, the principal amount is effectively re-swapped at a predetermined exchange rate so that the parties end up with their original currencies. The advantages of swaps are that firms with limited appetite for exchange rate risk may move to a partially or completely hedged position through the mechanism of foreign currency swaps, while leaving the underlying borrowing intact.

LITERATURE REVIEW

Hedging has often been offered as a solution to manage Forex Risk in majority of literature available in India as well internationally. This section briefly describes the various studies conducted on hedging the forex risk. Bjorn Dohring (2008)⁶ discussed exchange rate exposure in terms of transaction risk (the risk of variations of the value of committed future cash flows), translation risk (the risk of variations of the value of assets and liabilities denominated in foreign currency) and broader economic risk (which takes into account the impact of exchange rate variations on competitiveness). He argued that domestic-currency invoicing and hedging with exchange rate derivatives allow a fairly straightforward management of transaction and translation risk and discussed under which circumstances their use is optimal. Economic risk is by its very nature harder to manage, but he argued that natural hedging provides possibilities for doing so. He

⁶ Bjorn Dohring, (2008) “Hedging and invoicing strategies to reduce exchange rate exposure: a euro-area perspective” available at http://ec.europa.eu/economy_finance/publications/publication11475_en.pdf

concluded that the domestic-currency invoicing and hedging allow internationally active firms to reduce their exposure to exchange rate variations. Sivakumar Anuradha and Sarkar Runa (2007)⁷ evaluated the various alternatives available to Indian firms for hedging foreign exchange exposure. It concluded that forwards and options are preferred as short term hedging instruments while swaps are preferred as long term hedging instruments. The high usage of forward contracts by Indian firms as compared to firms in other markets underscores the need for rupee futures in India. The paper concluded by pointing out that the onus is on Reserve Bank of India and its working group on Rupee Futures to realize the need for rupee futures in India and the convertibility of the rupee. Yi-Chein Chiang (2007)⁸ examined financial and operational hedge strategies of foreign exchange exposures. Empirical findings showed that the use of operational hedge strategies do not help to reduce foreign exchange exposures for Taiwan firms. Also, the use of foreign currency derivatives (FCD) is an effective hedging strategy in a one-month horizon, but it is less effective when the horizon lengthens. In addition, the use of foreign currency-denominated debts (FDD) always increases foreign exchange exposures. Maurer Raimond and Shohreh Valiani (2003)⁹ examined the effectiveness of controlling the currency risk for international diversified mixed-asset portfolios via two different hedge instruments, currency forwards and currency options. They compared the currency forward with currency options to control the foreign currency exposure risk. Results showed that European put-in-the-money options had potential to substitute the optimally forward-hedged portfolios. The research showed the risk and return implications of different currency hedging strategies. Ahamed Kameel Mydin Meer (2002)¹⁰ compared and contrasted the use of derivatives – forwards, futures and options – and the gold dinar for hedging foreign exchange risk. He said

⁷ Sivakumar Anuradha & Sarkar Runa, Corporate hedging for foreign exchange risk of India, available at <http://www.iitk.ac.in/infocell/announce/convention/papers/Marketing,%20Finance%20and%20International%20Strategy-07-Anuradha%20Sivakumar%20Runa%20Sarkar.pdf>

⁸ Yi-Chein Chiang, “Foreign Exchange Exposures, Financial and Operational Hedge Strategies of Taiwan Firms” available at http://www.centerforpbefr.rutgers.edu/2007/Papers/039-ForeignExchangeExposure_YCCHJL.pdf

⁹ Maurer, Raimond and Valiani, Shohreh, Hedging the Exchange Rate Risk in International Portfolio Diversification: Currency Forwards versus Currency Options (December 2003). EFMA 2004 Basel Meetings Paper. Available at SSRN: <http://ssrn.com/abstract=499363>

¹⁰ Ahamed Kameel Mydin Meer, (2002) Hedging Foreign Exchange Risk with Forwards, Futures, Options and the Gold Dinar: A Comparison Note, available at <http://www.lariba.com/knowledge-center/articles/pdf/Malaysia%20-%20GOLD%20-%20Hedging%20With%20Dinar.pdf>

that the 1997 East Asian currency crisis made apparent how vulnerable currencies can be. The speculative attacks on the Ringgit almost devastated the economy if not for the quick and bold counter actions taken by the Malaysian government, particularly in checking the offshore Ringgit transactions. It also became apparent the need for firms to manage foreign exchange risk. The article argued how a gold dinar system is likely to introduce efficiency into the market while reducing the cost of hedging foreign exchange risk, compared with the use of the derivatives. John T. Harvey (2001)¹¹ compared the orthodox Neoclassical and post Keynesian approaches to exchange rates. From the neoclassical perspective, expectations, per se, do not affect currency prices. Rather, they are simply the mechanism by which the fundamentals set exchange rates. However, Post Keynesian economics suggests a more active role for expectations. It concludes that the expectation variables are not random and exhibit a pattern and are explicable. Martin Glaum, (1999)¹² reported the results of an empirical study into the foreign exchange risk management of large German non-financial corporations. Of the 154 firms that were addressed, a total of 74 took part in the study. The managers of these firms were asked about the measurement of exchange risk, about their management strategies, and about organizational issues. The results can be summarized as follows. The majority of the firms are concerned about managing their transaction exposure. Most firms adopted a selective hedging strategy based on exchange rate forecasts. Only a small minority of firms does not hedge foreign exchange risk at all, and only few companies hedge their transaction exposure completely. The study found a number of interesting discrepancies between the positions of the academic literature and corporate practice. For instance, numerous firms are concerned about their accounting exposure and some firms are actively managing it. The exposure concept favored by the academic literature, that is, economic exposure, is of little importance in practice. Further the paper found that almost half of the firms manage their exchange positions on the basis of the micro hedge approach. The most interesting finding from an academic point of view, however, is the widespread use of exchange rate forecasts and of exchange risk management strategies based on forecasts (selective hedging). By adopting such strategies, the managers indicate that they do not believe that the foreign exchange markets are information efficient and they are able to beat the market with their own forecasts. The academic

¹¹ John T. Harvey, *The Determinants of Currency Market Forecasts: An Empirical Study* by, February, 001(working paper) available at <http://www.econ.tcu.edu/harvey/workppr/wp2.pdf>

¹² Martin Glaum, (1999) "Foreign Exchange Risk Management in German Non-Financial Corporations: An Empirical Analysis" available at <http://www.uni-giessen.de/~g21142/limteam/ma/workingpaper/forex.pdf>

literature, on the other hand, emphasizes that it is very difficult indeed to make systematically successful exchange rate forecasts. Hlupic Vlatka, Paul Walker and Zahir Irani (1998)¹³ addressed using simulation modeling to predict movements in foreign currency rates. They had investigated whether and how simulation modeling can be used effectively to assist in predicting how foreign exchange rates will move in relation to other currencies. They used the factors like money markets, economic, employment, base rates, intervention, political, gilts, and others for simulation. After an understanding of the reasons why currency rates move, they emphasized on the structure of changes which would move the currency exchange rates up or down.

OBJECTIVE

From the review of literature, it is observed that the hedging is the only feasible solution to handle the foreign exchange risk. The use of currency derivatives has also gained popularity in recent times. The objective of this research is to analyze the usage of different derivative contracts for hedging the foreign exchange risk by Indian companies. It also states the quantum of exposure taken by Indian companies in to different currency derivatives contracts.

METHODOLOGY

The BSE SENSEX companies are representative of entire Indian market. It covers all major industries and these are the leading companies in India. Out of 30 companies of BSE SENSEX, fifteen companies are selected based on availability of data and other convenient reasons. An attempt has been made to find out the quantum of foreign exchange risk exposure and the tools used for hedging by respective companies from their published annual reports for the financial year 2007-08, 2008-09, 2009-10. The following is the list of companies used as sample for analyzing Forex Exposure.

Sr. No.	Name of company	Sr. No.	Name of company
1	Bajaj Auto Limited	9	Jindal Steel & Power Ltd
2	Bharat Heavy Electricals Ltd	10	Larsen & Toubro Limited

¹³ Vlatka Hlupic, Paul Appleby Walker, Zahir Irani, (1998) "Predicting movements in foreign currency rates using simulation modelling", Management Decision, Vol. 36 Iss: 7, pp.465 – 472

3	Bharti Airtel Ltd	11	NTPC Limited
4	Cipla Ltd	12	ONGC Limited
5	DLF LTD	13	Reliance Communication Ltd
6	Hero Honda Motors Ltd	14	Reliance Industries Ltd.
7	Infosys Technologies Ltd	15	Reliance Infrastructure Ltd
8	ITC LTD		

DATA ANALYSIS AND INTERPRETATION:

Annexure 1 and Annexure 2 are summaries from the annual reports of all sample companies under the study. After analyzing the information extracted from the balance sheet of sample companies, it is observed that the earnings of all the companies are linked to either US dollar, Euro or British Pound as companies transact primarily in these foreign currencies globally. Some of the companies like ITC, Cipla, Hero, and Infosys etc. whose business presence is very diversified across the globe have shown exposure in Japanese Yen, Canadian Dollar, and Australian Dollar and even other minor currencies. It is observed from the data that USD and EURO are the major currencies used for cross hedging the exposure from minor currencies. Forward contracts are most popular and commonly used among all the sample companies except Reliance Communications. As discussed earlier, forwards contracts can be tailored to the exact needs of the company and this could be the reason for their popularity. This feature of forward contract enables the companies to match their exposures in an exact manner in contrast to exchange traded derivatives like futures that are standardized where exact matching is not possible. Reliance group, Jindal, L&T and Bharti Airtel are the only companies used currency swaps in last three years of study period. Swap usage is a long term strategy for hedging and suggests that the planning horizons for these companies are longer than those of other firms. These businesses, by nature involve longer gestation periods and higher initial capital outlays and this could explain their long planning horizons. In 2007-08, five companies have chosen option and swap contract and eleven companies has chosen forwards contract to hedge their position in international trade. Out of fifteen sample companies, nine companies annual report depicts the usage of options along with forwards to hedge their exposure to the US Dollar. This strategy has gain momentum in recent years among many finance executives in Indian corporate. This has been adopted due to the marked high volatility of the US Dollar against the Rupee. Options are more profitable instruments in volatile conditions as they offer unlimited upside

profitability while hedging the downside risk. In contrast to options, there is a risk with forwards if the expectation of the exchange rate goes wrong. The use of Range barrier options by Infosys also suggests a strategy to tackle the high volatility of the dollar exchange rates. Software industry has a limited domestic market and relies on exports for the major part of their revenues and hence requires additional flexibility in hedging when the volatility is high. The planning horizons of these companies are shorter compared to capital intensive firms.

The top three companies which have used forward contracts in 2009-10, are DLF Limited, Reliance Industries Ltd., and Larsen & Toubro Limited; these are ranked in terms of the size of exposure in forwards contracts. It is the most acceptable derivative instrument to hedge the position. Out of fifteen companies, eleven companies have used forward in 2008-09 and 2009-10 while there are only nine companies in 2007-08 used forward contract. In terms of size of exposure in options contracts, the top three companies in 2009-10 are Reliance Industries Ltd., Bajaj Auto Ltd., and Reliance communications Ltd. Out of fifteen companies, nine companies are using option contract in 2008-09 and 2009-10 while only five companies have used option contract in 2007-08. The top five companies in terms of exposure in Swap contracts in 2009-10 are Reliance Industries Ltd., Reliance Communication Ltd., and Larsen & Toubro Limited. Out of fifteen companies six companies have used Swap contract in 2008-09 and 2009-10 while five companies have used it in 2007-08.

It is evident that most Indian firms use forwards and options to hedge their foreign currency exposure. This implies that these firms chose short-term measures to hedge as opposed to foreign debt. This preference is possibly a consequence of their costs being in Rupees, the absence of a Rupee futures exchange in India and curbs on foreign debt. It also follows that most of these firms behave like net exporters and are adversely affected by appreciation of the local currency. There are a few firms which have import liabilities which would be adversely affected by Rupee depreciation. However it must be pointed out that the data set considered for this study does not indicate how the use of foreign debt by these firms hedges their exposures to foreign exchange risk and whether such a strategy is used as a substitute or complement to hedging.

CONCLUSION

Indian companies are actively hedging their foreign exchanges risks with forwards, currency and interest rate swaps and different types of options such as call, put, cross currency and range-barrier options. In India, regulation has been steadily eased and turnover and liquidity in the foreign currency derivative markets has increased, although the use is mainly in shorter maturity contracts of one year or less. Forward and option contracts are the more popular instruments. There are many variants of these derivatives which investment banks across the world specialize in, and as the awareness and demand for these variants increases, RBI would have to revise regulations and would allow all currency derivatives products in India.

LIMITATIONS AND FUTURE RESEARCH DIRECTION

This study was preliminary investigation of Indian companies with respect to usage of currency derivatives to hedge their Forex risk. It was very limited and only focus on the size of exposure and instruments used by Indian companies. This study can be further extended by an in-depth study of nature of exposure faced by Indian companies along with critical examination of their hedging strategy in terms of the instrument used by them to deal with Forex risk. This can be further supported with a qualitative research by way of surveying the intentions, perceptions and practices for Forex Management of respective companies' CFO.

ANNEXURE 1

		Derivative Instruments Used to Hedge Position		
No.	Name of Company	2007-08	2008-09	2009-10
1	Bajaj Auto Ltd.	Forwards & Options	Forwards & Options	Forwards & Options
2	Bharat Heavy Electricals	Forwards & Swaps	Forwards & Swaps	Forwards & Swaps
3	Bharti Airtel Ltd	Options, Forwards & Swaps	Options, Forwards & Swaps	Options, Forwards & Swaps
4	Cipla Ltd	Forwards & Options	Forwards	Forwards
5	DLF LTD	Forwards & Swaps	Forwards & Swaps	Forwards & Swaps
6	Hero Honda Motors Ltd		Forwards	Forwards
7	Infosys Techno. Ltd	Forwards & Options	Forwards & Options	Forwards & Options
8	ITC LTD	Forwards & Options	Forwards	Forwards
9	Jindal Steel & Power Ltd	Options, Forwards & Swaps	Options, Forwards & Swaps	Options, Forwards & Swaps
10	Larsen & Toubro Limited	Options, Forwards & Swaps	Options, Forwards & Swaps	Options, Forwards & Swaps
11	NTPC Limited	Forwards & Swaps	Forwards & Swaps	Forwards & Swaps
12	ONGC Limited	Forwards	Forwards	Forwards
13	Reliance Comm. Ltd	Options & Swaps	Options & Swaps	Options & Swaps
14	Reliance Industries Ltd.	Options, Forwards & Swaps	Options, Forwards & Swaps	Options, Forwards & Swaps
15	Reliance Infra. Ltd	Forwards & Swaps	Forwards & Swaps	Forwards & Swaps

ANNEXURE 2

Size Of Hedge Exposure – Forwards			
	Notional Value (Rs. '000)		
Name of Company	2007-08	2008-09	2009-10
Bajaj Auto Limited	1,57,50,000	9,45,000	75,60,000
Bharat Heavy Electricals Ltd	1,16,95,500	1,99,52,600	2,33,26,500
Bharti Airtel Ltd	4,46,21,780	5,10,63,763	6,39,28,622
Cipla Ltd	1,74,34,000	1,49,33,400	89,81,900
DLF LTD	15,46,738	32,03,44,055	53,54,09,879
Hero Honda Motors Ltd		4,72,500	1,80,000
Infosys Technologies Ltd	2,14,80,000	1,48,70,000	1,18,10,000
Jindal Steel & Power Ltd	1,32,930	11,55,390	1,4,60,760
Larsen & Toubro Limited	3,88,59,600	11,35,01,800	14,19,23,900
Reliance Industries Ltd	18,30,90,800	30,22,96,800	26,01,57,500
Reliance Infrastructure Ltd		55,74,100	8,08,200
Size Of Hedge Exposure – Options			
Name of Company	2007-08	2008-09	2009-10
Bajaj Auto Limited	5,40,000	2,41,65,000	2,60,55,000
Bharti Airtel Ltd	2,15,75,016	1,62,53,499	1,66,22,359
Cipla Ltd	1,50,000		
Infosys Technologies Ltd	51,10,000	87,70,000	91,00,000
ITC LTD	72,000		
Jindal Steel & Power Ltd	3,67,520	2,90,420	1,48,960
Larsen & Toubro Limited	3,59,51,700	10,82,500	7,53,000
Reliance Communication Ltd		3,99,69,200	2,38,86,200
Reliance Industries Ltd	97,52,000	2,49,27,100	44,85,38,300

Size Of Hedge Exposure - Swap			
Name of Company	2007-08	2008-09	2009-10
Bharti Airtel Ltd	2,01,81,708	2,01,81,708	1,25,72,404
DLF Ltd	1,01,40		
Jindal Steel & Power Ltd	7,19,720	8,04,300	5,68,170
Larsen & Toubro Limited	3,65,84,900	4,94,63,600	5,47,59,300
Reliance Communication Ltd		7,59,04,900	5,77,71,900
Reliance Industries Ltd	10,84,51,200	27,65,06,500	52,56,08,400
Reliance Infrastructure Ltd		67,68,000	55,00,000

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