Hedging- An Effective Tool for Risk Management

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Abstract: Due to the globalization and liberal foreign investment rules and regulations many Indian companies have started expanding their business in many countries. This leads to higher recognition as well as increasing revenue. However there are some aspects which require very meticulous consideration while doing the international trade. The major risk associated with international trade is interest rate risk as well foreign currency risk. There are different methods adopted by companies to minimize such risk by using different methods. One of the highly preferred and widely popular risk minimizing techniques is the use of derivative instruments like forwards, futures and option contract to hedge currency fluctuation risk. This paper is based on study of selected Indian companies, on how to hedge the foreign exchange risk more effectively through use of derivatives. The researchers will be studying how forwards are used by selected Indian companies for minimizing currency exchange risk in efficient manner.

Keywords: Hedging; Derivative; Risk Management; Futures; Options; Swaps

I. INTRODUCTION

Due to the globalization and liberal foreign investment rules and regulations many Indian companies have started expanding their business in many countries. This leads to higher recognition as well as increasing revenue. However there are some aspects which require very meticulous consideration while doing the international trade.

The major risk associated with international trade is interest rate risk as well foreign currency risk. There are different methods adopted by companies to minimize such risk by using different method. One of the highly preferred and widely popular risk minimizing techniques is to use hedging techniques. There are numbers of studies that had been done by many scholars and researchers in the field of risk management. The risk associated with foreign exchange volatility is one of the critical area which plays important role in company’s financial strategic decision. In India this market is less developed but the increase in the number of forward and option contract are increasing very rapidly.

Although use of derivative product requires systematic and conceptual clarity they can be very helpful to the companies which are prone to high currency risk. Formulating and using currency hedging is very much essential for the companies when the international exposure reaches 15 percent to 20 percent of a total portfolio. Failing to do so leaves a large, inadvertently acquired, unmanaged risk in the portfolio. This paper will be based on study of selected Indian companies, on how they can hedge their foreign exchange risk more effectively through forward contracts.

II. PROBLEM STATEMENT

The main concern that will be addressed through this research paper is “To study how hedging techniques can be used for minimizing currency risk for selected Indian Companies.

III. LITERATURE REVIEW

(GUPTA, 1997) Dr. L.C Gupta Committee constituted by SEBI had laid down the regulatory framework for derivative trading in India. SEBI has also framed suggestive bye-law for Derivative Exchanges/Segments and their Clearing Corporation/House which lays down the provisions for trading and settlement of derivative contracts

(SAURABH, WINTER 2013) Snehal Bandwadekar and Saurabh Ghosh identify that derivative products like futures and options on Indian Stock Market have become important instruments of price discovery, portfolio diversification and risk hedging in recent times. Susan Thomas and Ajay Shah examined the characteristics, growth in liquidity and turnover of Futures and Options.
Dr Premalata examined the impact of introducing index futures and options contracts on the volatility of the underlining stock index in India. The results suggest that futures and options trading have not led to a change in the volatility of the underlying stock index.

Golaka C Nath examined the behavior of volatility in cash market after the introduction of derivatives. Rajendra P. Chitale examines issues and impediments in the use of different types of derivatives available for use by these institutional investors in India.

O P Gupta study suggest that the overall volatility of the stock market has declined after the introduction of the index futures for both Nifty and Sensex indices. However there is no conclusive evidence. Sandeep Srivastava uses the call and put option open interest and volume based predictors as given by Bhuyan and Yan (2002). The results show that these predictors have significant explanatory power with open interest being more significant as compared to trading volume.

This paper examines price discovery and hedging effectiveness of commodity futures after this change and concludes that, on average, futures prices do discover information relatively efficiently, but helps to manage risk less efficiently. The paper uses the viewpoint of the hedger to conjecture what factors may improve hedging effectiveness.

Diksha Arora, Ravi Agarwal (2009, August). ‘Banking Risk Management in India and RBI Supervision’. The paper commences with the study of risks associated with commercial banks. The purpose of the study is to identify all the possible risks faced by banks like credit risk, market risk, liquidity risk, etc. It focuses supervisory resources on the areas of highest risks within individual banks. It incorporates an assessment of management’s ability to deal with risks beyond the control of management, such as systematic risks and risks in the economic environment in which the bank operates.

Raghuvir Mukherji ‘A primer on corporate hedging’, The Business Line, (2008, April 5) said without hedging, a company is exposed to the vagaries of the markets and finds it difficult to predict revenues and incomes. Quoting instances, Raghuvir Mukherji explains how the different risks to a company arise and highlights the importance of having a clear and coherent policy framework for corporate hedging.

### IV. OBJECTIVE OF STUDY

#### A. PRIMARY OBJECTIVES:
1. To get insight about forwards as hedging tool.
2. To Study how forward contracts are used for minimizing currency exchange risk in efficient manner.

#### B. SECONDARY OBJECTIVES:
1. To understand current methods of hedging foreign exchange risk.
2. To study effectiveness of using derivative tools by selected Indian companies.

### V. RESEARCH DESIGN

The study basically follows “Descriptive Study” particularly through the study of secondary sources like annual reports of various companies.

### VI. RESEARCH METHODOLOGY

#### TABLE-1

<table>
<thead>
<tr>
<th>Sampling</th>
<th>Design</th>
<th>Sampling method</th>
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<tbody>
<tr>
<td>Sample Population</td>
<td>Top 100 Indian Companies involved in international trade either in import or export.</td>
<td>Descriptive</td>
</tr>
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<td>Sample unit</td>
<td>4 Indian companies from Information Technology Sector</td>
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</table>

#### A. METHODS OF DATA COLLECTIONS:
Overall project will be based on secondary data provided by selected companies in:
2. Official websites of companies
3. Past research reports
4. Newspaper articles
5. Financial Magazines
B. DATA PREPARATION:
The data will be critically analyzed and conclusion will be based on data provided by companies. However necessary assumption are to be made wherever sufficient data is missing, in acceptable manner.

C. LIMITATION OF STUDY:
1. For better application of the study, the current market scenario needs to be taken into consideration which is not fully taken.
2. Only four corporate are selected and that too of Information Technology sector only for the analysis purpose.

VII. WHAT IS RISK MANAGEMENT
Risks are unavoidable. However, business can take steps to ensure that they are fully equipped to manage these risks and can consequently plan to have more control over their cash flows. Operating or business risks and event risks are not faced by businesses on a regular basis; these arise at a various irregular intervals. The higher management is responsible for anticipating the possible timing of these risks and for planning to cope with them. In other words, these risks are managed at a strategic level. Credit risks also do not arise often. Companies can regularly monitor the creditworthiness of the customers and take the appropriate action when necessary.

On the other hand, businesses face price risks on a regular basis. It is essential that businesses develop strategies to manage price risks. In managing price risks, the task for the manager is not to forecast prices, but to ensure that the prices are fixed for buying and selling at a future time without having to worry about price volatility. This is known as hedging the price risk. Hedging strategies would depend on the expected direction of movement of prices.

VIII. FOREIGN EXCHANGE RISK
Exposure is defined as a contracted, projected or contingent cash flow whose magnitude is not certain at the moment and depends on the value of the foreign exchange rates. The process of identifying risks faced by the firm and implementing the process of protection from these risks by financial or operational hedging is defined as foreign exchange risk management.

One of the most common corporate uses of derivatives is for hedging foreign-currency risk or foreign-exchange risk, which is the risk that a change in currency exchange rates will adversely impact business results. Over 90% of the world’s 500 largest companies use derivatives to help manage their risks, according to new ISDA survey. According to the survey, 92% of these companies use derivative instruments to manage and hedge their risks more effectively. The companies using derivatives are located in 26 countries around the world and represent a broad variety of industries, ranging from aerospace to wholesalers of office and electronic equipment.

85% of the companies (78% of the total) use derivatives to help manage currency risk. The survey demonstrates that derivatives today are an integral part of corporate risk management among the world’s leading companies,” said Robert Pickel, executive director and chief executive officer of ISDA.

Across geographic regions and industry sectors, the vast majority of these corporations rely on derivatives to hedge a range of risks to which they are exposed in the normal course of business.” many of the businesses, governmental entities and other end users that rely on over-the-counter derivatives to manage efficiently the financial market risks inherent in their core economic activities.

IX. HEDGING
Hedging means a risk management strategy used in limiting or offsetting probability of loss from fluctuations in the prices of commodities, currencies or securities. In effect, hedging is a transfer of risk without buying insurance policies. Hedging involves reducing or eliminating financial risk by passing that risk on to someone else. It can provide certainty of cash flows, which helps with budgeting, encourages management to undertake investment, reduces the possibility of financial collapse. Foreign currency hedging specifically tries to reduce the risk that arises from future movements in an exchange rate. This can be accomplished by any of the four following instruments:

A. FORWARD CONTRACTS & FUTURE CONTRACTS:
A forward contract provides the holder of the contract the right to buy or sell the underlying asset at a future time at a price that is agreed upon at the time of entering into the contract. Typically, forward contracts are short term contracts and are non-negotiable, and the two parties that enter into the contract will have to fulfill their obligations when the contract expires. Forward contracts are usually entered into by private parties and, hence, are called over-the-counter contracts.

A futures contract provides the holder of the contract the right to buy or sell the underlying asset at a future time at a price that is agreed upon at the time of entering into the contract. Although a futures contract is similar to a forward contract, futures
contracts are negotiable and either party to the contract has the right to transfer the contract obligation to a third party anytime before the expiry of the contract. These contracts are traded on futures exchanges. Futures contracts can either be written on real assets or financial assets. If they are written on real assets, they are called commodity futures, and if they are written on financial assets, they are called financial futures.

B. **Options contracts:**

An options contract gives the holder the right to buy or sell the underlying asset on or before the maturity date of the contract. The major difference between options contracts and forward or futures contracts is that the holder of forward or futures contracts will have to fulfill the obligations under the contract, irrespective of whether the position in the contract results in gain or a loss. However, the options contract holder has the option of not having to fulfill the obligations under the contract if the position results in a loss. An options contract is more valuable than a futures contract and consequently requires an initial investment at the time of entrance. Options can be traded in options exchanges or options can be contracted between private parties, in which case they are known as over-the-counter options.

C. **Swap contracts:**

In general, forward contracts and futures contracts have short-term maturity, whereas swap contracts can have long-term maturity. Swaps are contracts wherein two parties agree to exchange future cash flows according to a mutually agreeable formula. The swaps are used to exchange interest rates or currencies.

X. DATA ANALYSIS

A. **Common Notes Applicable in Analysis of Each Company:**

- The total risk exposure of company in Indian Rupee is a product of its total foreign currency units that it will receive or pay in future with spot rate on March 31st 2014.
- Spot exchange rate between US dollars and Indian Rupee on 31st March, 2014 was 59.915 (INR).
- While the actual spot rate on maturity i.e. on 30th June, 2014 was 59.70 (INR).
- For the purpose of simplification and maintaining uniformity in calculation of gain and loss forward rate in case of forward position, Future price in case of future contract was 61.185 INR.
- Under unhedged option, company directly approaches to spot market for the conversion of its foreign currency into INR hence no contracted exchange rate comes in the calculation of gain and losses.
- Under forward, company is abide by its contract with other party at which company get its foreign currency converted in INR at agreed rate i.e. forward rate in this situation. Company’s position will not be affected by spot rate on the maturity date.
- For the purpose of simplification it has been assumed that company has entered into contract with the maturity period of three months.
- The cost involved in trading in derivative market is not taken in to consideration while deciding gain or loss because such charges gets vary from time to time as well as from each intermediary
- **Spot rate current:** This is the rate at which company can get its dollars converted into Indian Rupee if it would have received the foreign currency at 31st March 2014
- **Forward/Future rate:** This is the rate at which company enters in forward/future contract with other party. In other words this is the rate at which both parties to the contract agree to exchange the currency.
- **Spot rate on maturity:** On the date of expiry of derivative contract i.e. 30th June, 2014 whatever is the exchange rate that is quoted on exchange is called spot rate on the maturity. This rate is basically used to decide whether company has forecasted the movement of exchange rate in a right manner or not.

Three alternative hedging strategies apart from company’s current strategy are analyzed throughout report for all the companies.
- If risk is kept Unhedged OR Forward contract

B. **Final Settlement:**

- For the purpose of showing what will be the effect on company’s cash flow if the spot rate on maturity date is below contracted rate it has been fixed at 59 INR for simplification.
- Column of final settlement shows the amount that company can receive at two alternative spot rates on maturity.
- In case of forward contract final settlement is the product of total outstanding units of foreign currency and forward rate.

C. **Gain/Loss:**

- Gain and loss on over all transaction is the difference of total exposure and final settlement value at two alternative spot rates.
- Findings are based on gains and loss for each alternative.
XI. INFORMATION TECHNOLOGY INDUSTRY

Reason for taking this industry:
The information technology industry is having the highest dealing with foreign countries and hence it is one of the major industries which is facing exposure to foreign exchange risk.

A. COMPANY 1:- TECH MAHINDRA
1. Reported Data By the Company:
   • Company has reported the outstanding Forward Exchange Contracts amounting 910 Million US dollars.
   • Cross currency is Indian Rupee
   • Total Exposure was 54522.65 million (INR), this amount is product of [910mn*59.915 INR].

2. Explanation:
   In this case the company Tech Mahindra is using forward contract to minimize its exposure to currency exchange rate fluctuation. Here the comparison is being done for if the company keeps the position unhedged and if the company uses forwards as a derivative tool.

<table>
<thead>
<tr>
<th>TABLE-2 Analysis</th>
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<td>Sr No</td>
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3. Finding:
   In all off the above mentioned alternative derivative methods there are two possibilities exist.
   • Indian Rupee depreciate against other currency
   • Indian Rupee appreciate against other currency
   • If company has not hedged its risk: In this situation it could have earned gains of Rs.136.5 million if the spot exchange rate increases on maturity from its earlier rate i.e. if the rupee depreciates against US$ Similarly if Indian Rupee appreciates then it will leads to loss of 832.7 Million Indian Rupee since the transaction being a sell transaction of foreign currency for the company under study.
   • Actual Situation- Using forward contract to minimize loss. Here in this case the company had taken forward derivative contract in order to reduce its risk at a forward price of 61.185 resulting into a gain of 1155.7 million Indian Rupee. In case of forward contract spot rate on maturity becomes irrelevant because company has to sell dollars at agreed rate to other party without considering maturity rate.

B. COMPANY 2:- INFOSYS
1. Reported Data By the Company:
   • Company has reported the actual position of 5390 million Indian Rupee being unhedged which results in total exposure of 89.961 million US$.
   • Cross currency is Indian Rupee
   • Total Exposure was 5390 million (INR), this amount is product of [$89.961mn*59.915 INR].

2. Explanation:
   In this case the company Infosys has kept Rs. 5390 Million Indian Rupee being unhedged. Here the comparison is being done for if the company keeps the position unhedged and if the company uses forwards as a derivative tool.

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<th>TABLE-3 Analysis</th>
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<tr>
<td>1</td>
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<tr>
<td>2</td>
</tr>
</tbody>
</table>

3. Findings:
   In all off the above mentioned alternative derivative methods there are two possibilities exist.
• Indian Rupee depreciate against other currency
• Indian Rupee appreciate against other currency

• Actual Situation-The Company has not hedged its risk, in this situation it could have earned gains of Rs. 13.49 million if the spot exchange rate increases on maturity from its earlier rate. Similarly if Indian Rupee appreciates against Dollar then it will leads to loss of 82.31 Million Indian Rupee since the transaction being a sell transaction of foreign currency for the company under study.
• If the company is using Forwards - Using forward contract to minimize loss. Here in this case if the company had taken forward derivative contract in order to reduce its risk at a forward price of 61.185 resulting into a gain of 114.25 million Indian Rupee. In case of forward contract spot rate on maturity becomes irrelevant because company has to sell dollars at agreed rate to other party without considering maturity rate.

C. COMPANY 3:- POLARIS

1. Reported Data By the Company:
• Company has reported the actual position of US$ 42.169 Million being unhedged
• Cross currency is Indian Rupee
• Total Exposure was 2526.56 million (INR), this amount is product of [$42.169mn*59.915 INR].

2. Explanation:
In this Case the company Polaris Pharma has kept Rs. 2526.26 Million Indian Rupee being unhedged. Here the comparison is being done for if the company keeps the position unhedged and if the company uses forwards as a derivative tool.

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Nature of Derivative Contract</th>
<th>Currancy</th>
<th>Buy/ Sell</th>
<th>Cross Currency</th>
<th>Amt. in m/n (USD)</th>
<th>Spot Rate Current</th>
<th>Total Exposure in m/n (INR)</th>
<th>Fwd/Future/Strike Rate</th>
<th>Spot Rate on Maturity</th>
<th>Final Settlement m/n (INR)</th>
<th>Gain/Loss (Amt. In million)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Un Hedged</td>
<td>USD</td>
<td>Sell</td>
<td>INR</td>
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<td>59.915</td>
<td>2526.556</td>
<td>60.065</td>
<td>59</td>
<td>2532.88</td>
<td>2487.97</td>
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<td>2</td>
<td>Forward</td>
<td>USD</td>
<td>Sell</td>
<td>INR</td>
<td>42.169</td>
<td>59.915</td>
<td>2526.556</td>
<td>61.185</td>
<td>2580.11</td>
<td>2580.11</td>
<td>53.55</td>
</tr>
</tbody>
</table>

3. Findings:
In all off the above mentioned alternative derivative methods there are two possibilities exist.
• Indian Rupee depreciate against other currency
• Indian Rupee appreciate against other currency

• Actual Situation-The Company has not hedged its risk:-In this situation it could have earned gains of Rs. 6.33 million if the spot exchange rate increases on maturity from its earlier rate. Similarly if Indian Rupee appreciates then it will leads to loss of 38.58 Million Indian Rupee since the transaction being a sell transaction of foreign currency for the company under study.
• If the company is using Forwards - Using forward contract to minimize loss. Here in this case if the company had taken forward derivative contract in order to reduce its risk at a forward price of 61.185 resulting into a gain of 53.55 million Indian Rupee. In case of forward contract spot rate on maturity becomes irrelevant because company has to sell dollars at agreed rate to other party without considering maturity rate.

D. COMPANY 4:- WIPRO

1. Reported Data By the Company:
• Company has reported the outstanding Forward Exchange Contracts amounting 516 Million US dollars.
• Cross currency is Indian Rupee
• Total Exposure was 30916.14 million (INR), this amount is product of [$516 mn*59.915 INR].

2. Explanation:
In this Case the company Wipro is using forward contract to minimize its exposure to currency exchange rate fluctuation. Here the comparison is being done for if the company keeps the position unhedged and if the company uses forwards as a derivative tool.
3. Finding:
In all off the above mentioned alternative derivative methods there are two possibilities exist.

- Indian Rupee depreciate against other currency
- Indian Rupee appreciate against other currency

- If company has not hedged its risk: - In this situation it could have earned gains of Rs. 77.4 million if the spot exchange rate increases on maturity from its earlier rate. Similarly if Indian Rupee appreciates then it will leads to loss of 472.14 Million Indian Rupee since the transaction being a sell transaction of foreign currency for the company under study.
- Actual Situation: Using forward contract to minimize loss. Here in this case the company had taken forward derivative contract in order to reduce its risk at a forward price of 61.185 resulting into a gain of 655.32 million Indian Rupee. In case of forward contract spot rate on maturity becomes irrelevant because company has to sell dollars at agreed rate to other party without considering maturity rate.

XII. FINDINGS & SUGGESTION

From the above analysis following facts are observed-

- One of the reasons company prefers forward contract can be “Stability” in the amount of loss that company need to incur in the worst change in currency exchange rate.
- Currently Companies are relying on one or few hedging instrument, but to hedge risk effectively it is advisable to use combination of different derivative contract.
- Unhedged foreign currency risk can have worst impact on company’s future cash flow hence it is also advisable to hedge such risk rather then keep if Unhedged.

XIII. CONCLUSION

After studying the current practices of using derivative contracts of selected Indian companies following are the important conclusions are derived.

- Majority of Companies that have been studied are presently using forward as their widely used technique for hedging their foreign exchange fluctuation risk.
- The main reason for the use of forward contract as preferred derivative instrument is it helps to stabilize the total risk that may arise due to swings in the exchange rate of foreign currency.
- Companies are presently using the hedging derivatives mainly to hedge their risk, in other words companies do not intend to make profit out of such contract but they want to minimize their risk.

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## AUTHOR’S PROFILE

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<thead>
<tr>
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