

## EXCHANGE RISK MITIGATION AND CURRENCY OPTIONS – CASE STUDY OF AN INDIAN COMPANY

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**Abstract:** This paper is an attempt to study the evolution of the Indian Derivatives market in the context of the Indian Corporates' efficiency in handling their Foreign Exchange Risk. Particular Analysis has been made for an Indian Manufacturing Company that had hedged its risk with Options Derivative product.

Data pertaining to one Company in particular and information in General for other Companies have been used. Detailed analysis has been made based on simple arithmetical methods.

The study unfolds the various micro aspects of Foreign exchange risk management strategies adopted/to be adopted by Indian Corporates and the need to plan and implement a structured Risk Management Policy. It highlights how ignoring Foreign Exchange Risk Management would result in a U-Turn in the financial health of even a financially strong Company, when faced with an unanticipated financial crisis.

The learnings for the Indian Companies from this experience have been summarized. We have elaborated on the need for a periodical review and quick change of gears when so demanded by the dynamic challenges of this portfolio.

We have concluded the study with an analysis on India's adverse positions due to current account deficits and fiscal deficits and identifying strategies that could be adopted in this context.

**Key Words:** Currency volatilities, Foreign Exchange Risk Mitigation, Derivatives, options, Interest rate futures

### INTRODUCTION

Derivatives market in itself is a fairly young market which has developed only since the past four decades. But it has changed the entire financial system globally including that in India. This has had far reaching impact on the global financial markets.

“Prior to roughly 1970, foreign exchange rates were generally fixed by Governments, a result of an agreement reached by the Allied countries during the closing stages of World War II. When, in 1970, this system came to an end and exchange rates fluctuated, the CME saw in this an opportunity to introduce future contracts on several major foreign currencies. Foreign currency futures were indeed the trailblazers. They proved that money was indeed the

ultimate commodity and that derivatives on money were a great innovation and were here to stay. In 1973, two of the most important events in the history of derivatives occurred. Fischer Black, Myron Scholes, and Robert Merton developed a model that would aid in identifying the appropriate value for an option. This model stimulated a tremendous amount of trading in options and derivatives in general and it led to the awarding of Nobel Prize in 1977.”—Don M Chance and Robert Brooks, 2016.

Derivatives market in India, in comparison, is still only in the developmental stage although The Foreign Exchange Market originated in India in 1978 and trading in Derivatives also started as early as June, 2000 in the BSE and NIFTY Index futures. In 2001, India started with individual stock option Derivatives.

The significant derivative products that are traded in India are listed below:

Highlights in the Indian Derivatives Market
<b>OTC Derivatives</b> Foreign exchange forward contracts Since 1978 Interest rate Swaps & Forward Rate Agreements. This was introduced in July, 1999. (However, Swaps with Caps/floors/collars are not permitted in India) Foreign Exchange Derivatives - Foreign Exchange Options and Swaps are also other products traded in Indian OTC Market
<b>Exchange Derivatives</b> – Equity(f &o), Currency(USD, GBP, Euro & JPY) (f &o) and NSE Bond Futures, commodity futures. India is likely to introduce option trading in the commodity markets in the near future.
Index futures were introduced in June 2000, followed by index options in June 2001, and options and futures on individual securities in July 2001 and November 2001, respectively.Currency futures (Introduced in August, 2008 in NSE and subsequently on other exchanges)
Although the first organized commodity exchange in India was The Bombay Cotton Exchange founded in 1893, the demutualized electronic multi commodity exchange was introduced by the Government only a few years back.
European style option on USD-INR pairs was introduced in NSE & BSE in October, 2008.
Interest Rate Futures contracts on 10 year notional coupon bonds introduced in NSE in August, 2009
Futures contracts on 91-day T- Bills introduced on July 4 <sup>th</sup> , 2011
Introduction of Portfolio compression services by CCIL in the derivatives market on July, 27 <sup>th</sup> 2011.
Introduction of IRF Contracts on 2 year and 5 year G Secs was introduced on 30 <sup>th</sup> December, 2011.
Credit Default swap was introduced in 2011 end and on December 7 <sup>th</sup> 2011 ICICI Bank and IDBI Bank entered into the 1 <sup>st</sup> CD swap in India.
Clearing Corporation of India launches trade repository for OTC Forex Derivatives on 9 <sup>th</sup> July 2012
Interest rate options was introduced in India w.e.f 31 <sup>st</sup> January, 2017 both in OTC and Exchange
Reserve Bank of India, in the month of April, 2018, has also proposed introduction of interest rate swaptions in rupees and allowing NRIs to participate in the domestic interest rate swap market

Popular economists like John Maynard Keynes and James Tobin, have expressed that Derivatives market

being speculative in nature, could pose a major threat to the economy and financial System, if effective standard regulations to control and continuously monitor them are not in function.

“As the organization of investment markets improves, the risk of the predominance of speculation does increase. In one of the greatest investment markets in the world, namely New York, the influence of speculation is enormous. Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes the by-product of the activities of a casino, the job is likely to be ill-done. The measure of success attained by Wall Street, regarded as an institution of which the proper social purpose is to direct new investment into the most profitable channels in terms of future yield cannot be claimed as one of the outstanding triumphs of laissez-faire capitalism—which is not surprising if I am right in thinking that the best brains of Wall Street have been in fact directed towards a different object. These tendencies are a scarcely avoidable outcome of our having successfully organized “liquid” investment markets. It is usually agreed that casinos should in the public interest be inaccessible and expensive. And perhaps the same is true of stock exchanges. The introduction of a substantial government transfer tax on all transactions might prove the most serviceable reform available, with a view to mitigating the predominance of speculation over enterprises in the United States.”—Keynes John Maynard, 1936.

James Tobin (1982) has also urged adoption of securities transaction tax to curb excessive volatility in international financial markets.

“The immense power of the computer is being harnessed to the paper economy not to do the same transactions more efficiently but to balloon the quantity and variety of financial exchanges”.- Tobin, James (July, 1984).

The enhanced risk-bearing capacity of banks, rising foreign exchange trading volumes and finer margins bear proof to the degree of development and contribution to economic growth by these markets. Today this market has become an inevitable and important part of the financial market that has a major role in the future

economy. Financial Engineers continuously innovate new products. Economists and Central Banks engage in formulating, monitoring and regulating new policies to ensure a healthy economy that offers a good atmosphere for trading and that has a good control and reporting system in place.

Reserve Bank of India has, in fact, taken a lot of measures in regulating the OTC markets in India and has been closely monitoring the transactions. On the one hand, the Central Bank keeps revising its monitoring mechanism, while on the other; it has also been taking a number of initiatives for the development of the Derivatives products

The Global crisis has also set in motion a lot of debate and changes in reporting Losses/Gains in Forex /Derivative transactions. Lots of problems are being encountered and finding solutions would be an on-going process while chalking out the roadmap for growth in the Derivatives market in India. Further India's move to align its Accounting System in sync with the IFRS system (called the INDAS 35) in a phased manner is yet another task where solutions have been worked out.

In this context, the study of how a medium sized Corporate SGE Ltd. (that made rapid strides in the path of growth after turning around a sick unit) suffered huge losses, due to non-adoption of a proper forex risk management policy well in time, is analyzed.

## **MATERIALS & METHOD**

### **Period of study**

The period covered is 2007 to 2009. Other periods have been touched upon incidentally.

### **DATA**

Primary data of SGE Limited.

Secondary data Source - Reserve bank of India, other Government and reputed Institutions and websites as mentioned in the Bibliography.

### **The Case under study**

**1.1.** SGE Ltd. A Manufacturing Unit went into an expansion Programme involving modernization of

Plant and a switch over to economically efficient fuel energy for its manufacturing process, besides introducing a new product. The Company raised ECB Term Loan of US Dollars 15 Million. This research paper focuses on the importance (including timing of adoption) of the Risk Management Policy and its various aspects. The focus has been on various currency and interest hedging options that the Company should consider/ did consider to meet its loan repayment commitments which would comfortably cover its Debt Servicing and Principal repayments besides ensuring that the project is able to meet/exceed its projections of profit from the project.

**1.2 Background:** SGEL was promoted in 2003, by acquiring the assets of erstwhile S I Ltd, a manufacturer of porcelain insulators which became sick in 1992. It was successfully turned around into a profit making one within a very short period.

The Company then started manufacturing high-voltage insulators in a 46 acre facility at Cuddalore District near Pondicherry with an installed capacity of 15,000 Tonnes per Annum. The Company had the capacity to manufacture various kinds of insulators ranging from 11KV to 765KV capacity; in addition to specialization in manufacturing high voltage solid core insulators of 220 KV.

**1.3 Net Forex transactions of the Company:** The Company imported Goods and Raw Materials worth Rs.17.31crore in the year ended 31<sup>st</sup> March, 2008. However, it did not have any exports during the year. In the year 2008-2009 the export figure touched Rs.2.33 Crores and Imports came down to Rs.5.87 crores.

**1.4 Future expansion Plans:** The Year ended 31.03.2008 was very profitable - the turnover touching Rs.113.48 Crores and the executable orders on hand Rs.13.50 crores. It planned a major expansion project forecasting major demand for high-voltage hollow insulators due to a climate of huge investments in the power sector. The size of the market for hollow insulators was estimated at between Rs 700 crore and Rs 800 crore. Only five companies in the organized segment were engaged

in this business Besides, a study on the International Demand and Supply scene for its products revealed a huge export market.

Consequently, the Company strategized the following:

- a) To expand in the Power Sector by forward and backward Integration and add products like Polymer and Bus Duct
- b) To start a new factory in Chinglepet district near Chennai after buying a 200 acre land
  - 1) To install a Plant with a capacity of 24,000 TPA.
  - 2) To start manufacturing initially 130KVA Hollow Insulators and disc insulators
    - a) To capture a Major Market share in the export of Insulators and to acquire a foreign Company in Europe to support its International Operations
    - b) Organize funds for the above by way of Debt / Equity @ 50:50

### **1.5. Plan Implementation**

1. The Company received equity investment to the extent of US Dollar 25 Million.
2. It acquired 200 acres of land at Chinglepet.
3. External Commercial Borrowing was organized from a foreign Bank.

## **2. IMPACT OF THE GLOBAL FINANCIAL CRISIS ON SGE LTD.**

The Global meltdown of 2008 had its effect on the Indian Economy too.

1. Flight of FII funds saw our stock markets crashing and currency rates experienced high volatility. Rupee depreciated. Overnight India was gripped with a liquidity crunch that sent interest rates touching 20% despite the fact that the Central Bank responded with a powerful policy of flooding the financial sector with liquidity. However, Banks were not willing to lend the extra funds.
2. Severe power-cuts to the Industrial Sector brought down plant capacity utilization.

3. It lost orders that were in pipeline bringing down the order position by a major percentage.

As a result, Sales turnover for the company fell by 30% from 113.50 Crores to Rs.80 Crores in March, 2009; Imports fell to Rs. 5.87 Crores as against Rs. 17.31crores of the previous year. Although exports was Rs. 2.33 crores, it was much short from its projections of Rs.10 Crores for the year.

### **2.1. Foreign Exchange Risks that brought down the profits of SGE Ltd.**

The Company had failed to cover the Foreign Exchange Risk. The Import transactions of the Company that were in pipeline and the Payables on credit Terms, resulted in heavy loss for the Company due to sudden appreciation of the US Dollar.

Delayed receipt of payments in Exports due to the Global Crisis resulted in interest loss for the Company as the Company was not able to pass on the overdue interest liability that it had to bear, to the customer due to delayed receipts from them in its export transactions as most of them were reputed firms like ABB Australia and Ceramics Insulators Limited.

The outstanding currency Exposure on imports payables being more than those of Exports, it further brought down the Profit of the Company due to the mark-to-market accounting. This resulted in loss due to translation risk.

Except for a slight delay and reschedule, the company could manage to continue with the implementation of its expansion because

- ✓ The local market still had kept its orders full. The Exports also showed encouraging signs in view of the nature of the Industry the Company catered to. Infrastructure and the power sector normally do not go into long recessionary phases.
- ✓ Power supply also improved with purchase of additional power supply agreement with MALCO Industries

The Company shelved its acquisition plan of a Foreign facility at Europe.

In the changed scenario, the Company brought the following change in its strategy

1. The Company went ahead with the implementation of the Project after a deferment of 6 months. In line with this plan, the Company acquired 200 acres of land at Chingleput, took an ECB borrowing for a reduced amount of USD15,000,000 for the Project in December, 2008 .
2. Placed orders for import of Capital Goods to modernize its plant and increase plant capacity.

### **3. FOREIGN EXCHANGE LOSS SUFFERED BY SGE LIMITED**

The loss suffered in March 2008 was Rs.17.73 lakhs. In 2008-2009, the exchange loss suffered, leaped to Rs. 35.44 lakhs (impact of global meltdown and bad risk management by the Company) and worked out to 4.32% of the export/import turnover of 2008-09, although the turnover itself in absolute terms was only Rs. 8.20 Crores as compared to Rs.17.31 Crores in the previous year. This worked out to 6.68% of the Gross Profit which was too dear to the Company since the total gross profits had recorded a negative trend from Rs.25.41 Crores in the previous year to Rs.5.30 Crores in the year 2008-2009.

The Company hedged the USD/INR currency risk of its principal loan amount.

#### **3.1. ECB Loan**

The Company decided to go ahead with a US Dollar Loan. The loan was obtained from London. The date of availing the loan was 23<sup>rd</sup> December, 2008, although it required the loan only by end January, 2009, since the loan offer was expiring by the 4<sup>th</sup> week of December. The Company held the Dollar funds in a Current Account in London without receiving interest but had to pay interest @ LIBOR + 2.30% on its ECB Loan till 21<sup>st</sup> January, 2009. On 22<sup>nd</sup> January the Company repatriated the funds to India, used part of it, to meet its project expenditure and placed the balance in short term Fixed Deposit with a plan to prematurely close the same in case funds were required before its maturity

##### **3.1.1. Risk cover**

It hedged the principal repayment amount only.

**Table 1**  
**Illustration and Explanation of the Option Deal concluded by SGE Limited and its implications**

Schedule of equated instalments of repayment of Principal to Lenders at London for ECB Loan to be paid by SGE Ltd. for a total amount of USD15,000,000. Equivalent INR 765,000,000 starting from 23<sup>rd</sup> June, 2011 to 23<sup>rd</sup> December, 2015 after moratorium period of two years, starting from 23<sup>rd</sup> March, 2009.

<i>Date</i>	<i>Principal Re-payment (USD)</i>
23-Jun-11	750,000.00
23-Dec-11	750,000.00
25-Jun-12	11,25,000.00
24-Dec-12	11,25,000.00
24-Jun-13	15,00,000.00
23-Dec-13	15,00,000.00
23-Jun-14	18,75,000.00
24-Dec-14	18,75,000.00
23-Jun-15	22,50,000.00
23-Dec-15	22,50,000.00

**3.2. Details of the hedging transactions undertaken by SGE to cover its USD/INR risk for its principal repayment amount** The transaction was done for USD 15 million (Notional INR Rs.765,000,000) on 18<sup>th</sup> March, 2009, with the delivery dates (after two years moratorium) of the options falling due for delivery to coincide with the principal repayment installment amount falling due every half-year, starting from 23<sup>rd</sup> June, 2011, at 18<sup>th</sup> Spot rate of Rs.51/- per US Dollar with a cap on the spread at Rs.75/-, the last option maturing on 23<sup>rd</sup> December, 2015.

#### **3.3. USD/INR Option contract**

**3.3.1** For settlement on each installment due date and for amounts as per the Table-1:

SGE Limited Buys an option of USD Call/ INR Put at Strike 51.00

SGE Limited writes an option of USD Call/ INR Put at Strike 75.00

##### **3.3.2. Examples of other situations/options in the market**

If the company decides to net settle the option amount at market levels on the due dates of the option contracts instead of delivering the actual currencies, then the Table-

2 of calculations would explain in detail the gains/losses accruing due to the movement in USD/INR on the full loan amount – USD 15Millions.

**Table 2**  
**Notional Gain / Loss by the Company worked out in case the Company chooses to Net settle at the spot rate/strike rate**

USD/INR Spot Rate on Expiry Date	SGE Limited Buys USD 15million @	Notional Gain/(Loss) For SGE Limited in INR wrtmarket rate
104	80	360000000
90	66	360000000
75	51	360000000
73	51	330000000
51	51	0
46	46	0

Explanation: (Option premium has been ignored in this illustration)

**3.4. Terms of Option Costs**

SGE Limited has to pay INR 3.05% p.a. fixed on outstanding INR notional

Interest Calculations: A/365, Half yearly on each interest payment date starting 23 June 2009

Through this structure – SGE Limited hedged the risk of INR depreciation against USD only on principal re-payments up to a rate of 75.00. If it goes above this rate SGE Ltd. stands exposed to the higher rate movement beyond Rs.75. If spot rate is below Rs.51, the option would expire out of money and the option cost would be the only loss suffered by SGE Ltd.

**4. Interest rate swap** SGE considered the following swap deal to cover its interest rate and currency risk but decided not to go ahead with interest rate swap deal.

**4.1** The quote and Explanation for the swap deal is, however, furnished below)

**Coupon Exchange**

BANK Pays	USD 6-month LIBOR + 230 bps on outstanding USD notional
Interest calculation	A/360
SGE Pays	INR 8.55% p.a. fixed on outstanding INR notional Interest calculation A/365

The above swap includes the price for the option hedge at 3.05% p.a. While the above structure is a hedge on the ECB interest amount and rate, should the Company decide to net settle the deal at market prices instead of delivering the currencies for settlement of the underlying exposure on maturity, the following table gives the interest exchange in USD LIBOR.

Through this structure, the Company could hedge the USD six month Libor risk into INR fixed rate terms USD/INR risk on interest payments.

**Indian Rupees to 1 EUR**



.120 days	latest (Apr 9)	lowest (Nov 10)	highest (Mar 19)
	66.345	60.3548	68.779

**Indian Rupees to 1 USD**



.120 days	latest (Apr 17)	lowest (Dec 18)	highest (Mar 3)
	49.8599	46.74	51.9699

**American Dollars to 1 EUR**



.120 days	latest (Apr 9)	lowest (Oct 27)	highest (Dec 17)
	1.3273	1.2446	4.4358

**Figure 1: Movement chart for 4 months for Euro/INR, USD /INR & USD/Euro (Source x-rates.com)**

### 5. TIMING THE AVAILMENT OF THE LOAN ON 23<sup>RD</sup> DECEMBER, 2008

Although the requirement for the funds was only by end January, 2009, SGE Limited went ahead with the loan on 23<sup>rd</sup> December because the loan offer was valid only till the fourth week of December. Besides, Dollar was forecast to appreciate in the following month by Analysts in December, 2009. The Company, therefore, held the Dollar funds in a Current Account in London with its Bank, without receiving interest but had to pay interest @ LIBOR + 2.30% on its ECB Loan.

On 22<sup>nd</sup> January, the Dollar was rallying at 49. The Company repatriated the funds to India to meet its Project expenses, after translating the rupee depreciation profit to its book. The Company used part of the repatriated funds to meet its expenditure for the Project and placed the balance in short term deposit

### 6. SGE LTD. HAD NOT COVERED ITS CURRENCY EXPOSURE IN WORKING CAPITAL CYCLE

SGE Ltd. has its imports and exports in different currencies and suppliers and customers in different countries.

#### Results

The Company incurred losses due to currency risk and transaction risk as a result of heavy appreciation of dollars in Import payables and interest loss on delayed receipt of export receivables. (ECGC not covered)

The table below gives the volatility in Euro/INR, USD/INR and USD/Euro prices.

#### Indian Rupees to 1 EUR



120 days latest (Apr 9) 66.345 lowest (Nov 10) 60.3548 highest (Mar 19) 68.779

#### Indian Rupees to 1 USD



120 days latest (Apr 17) 49.8599 lowest (Dec 18) 46.74 highest (Mar 3) 51.9699

#### American Dollars to 1 EUR



120 days latest (Apr 9) 1.3273 lowest (Oct 27) 1.2446 highest (Dec 17) 1.4358

Figure 2 Movement chart for 4 months period for Euro/ INR, USD/INR & USD/Euro

Source: x-rates.com

**Explanation** December third week Euro has been more volatile & still continued to be more volatile than US Dollar in March, 2009

The possible reasons for the choice of US dollars instead of Euro are:

- i) Operational Problems due to lack of adequate technical skills in a lesser traded currency.
- ii) More conversion loss since Euro has to be converted to USD before converting to INR (double conversion in cross currencies) to arrive at the pricing and at the repatriation stage.
- iii) Dollar loan interest rate was cheaper than Pound sterling loan interest rate.
- iv) Lender's willingness to extend USD Loan and not Pound Sterling Loan.

The percentage of volatility in Euro currency was much higher in comparison to the US Dollar during the period (December 3<sup>rd</sup> week, 2008). This could have had a psychological effect in choosing USD as the designated currency for the loan despite the hedging decision

**Table 3**  
**Profit made due to the choice of USD as the currency for the Loan**

**Calculation of Loss, to the Company if the choice had been a Euro Loan**

<i>DT of Loan</i>	<i>USD Amount</i>	<i>Euro/USD</i>	<i>Euro Amount</i>	<i>USD/INR</i>	<i>INR Equivalent</i>
23.12.08	15000000.00	1.3966	10740369.47		
22.01.09	13945295.72	1.2984	10740369.47		
22.01.09	13945295.72			49.11	684853472.81
22.01.09	15000000.00			49.11	736650000.00
<b>Loss if Euro chosen</b>					<b>51796527.19</b>

**Explanation:** On 23<sup>rd</sup> December, the day, the Company availed the loan, the Euro Loan, Euro /USD was 1.3966 which means the Loan amount would be 10,740,369.47 Euros for a USD equivalent of 15,000,000. The Company would have held this money abroad and repatriated on 22<sup>nd</sup> January, 2009 when the Euro/USD was 1.2984 which would have fetched USD13,945,295.72. The USD when again converted to INR would have fetched Rs.68,48,53,472.81 as against Rs.73,66,50,000 which the USD direct conversion has fetched the company resulting in a gain of INR.5,17,96,527.19 on choosing USD Loan.

SGE Ltd. did not consider the swap deal to cover its interest rate/ currency risk for interest amount and decided not to go ahead with interest rate swap. Its decisions were based on the forecast that LIBOR would not exceed 2.2% in the worst scenario and the premise that its export proceeds would serve as a natural hedge for the currency risk which will cover the risk on interest amount. In addition, the interest rate on ECBs are much lower and its forecast that LIBOR interest rate is not likely to cross 2.2 % till the loan repayment date, accounted for its position that this could adequately take care of the movement of the Currency in the adverse direction. (which, forecast , in fact, is true As on 20.06.14 LIBOR is 0.3234 and as on 18<sup>th</sup> March 2009 it is 1.883),

Therefore, entering into an interest rate swap deal according to the Company, would only increase the cost to company.

The Term Loan @ 12% in INR would also work out much more, even after providing for INR depreciation.

### 7.1. Failure in Company's strategies that brought down its performance

1) Non formulation and implementation of foreign exchange risk management policy well-in-time,

leading to a substantial loss in its Forex Portfolio in the two years ended March, 2009, enhanced by the effects of the Global Meltdown.

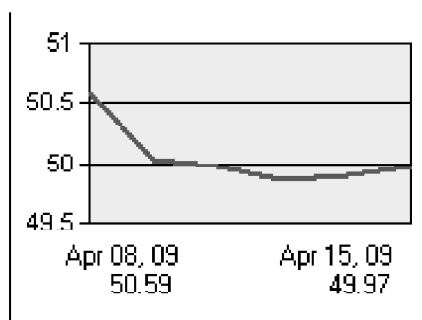
- 2) No full-time Treasury team to monitor the exchange risk on a regular basis and take immediate steps.
- 3) Even after suffering exchange losses for two years, the company did not hedge/cover its Foreign Exchange exposures in the short-term, that is, working capital cycle arising in its export/import transactions citing
  - a) Natural hedge. Company had not assessed its currency exposures or prepared any position records and was under an illusion that its exposures had a natural hedge There was a mismatch in its export and import Turnover. Total turnover in its export and imports in the past and in its projections had major variations. The countries of these exports and imports were different and in such a case, the movement of different currencies with different volatilities too as evident from **Figure 2** (Euro & Dollar) would not give a natural hedge. Besides, there would also be time mismatches.



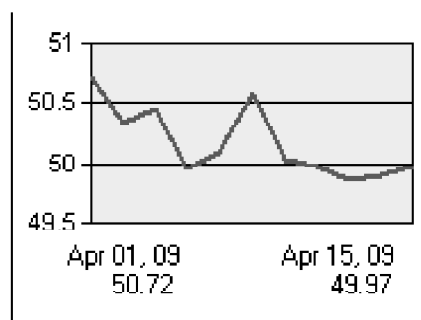
Figure 3 Dollar Vs Rupees (Upto April 14<sup>th</sup> 2009) Movement

**Explanation** Both the currencies have recorded high volatility especially in 6month chart ranging from 47 to 52INR for USD and 60 to 69 in Euro (Source - Standard Chartered Bank)

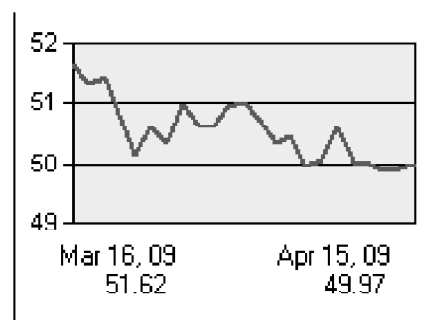
**1 Week ( -0.12% )**



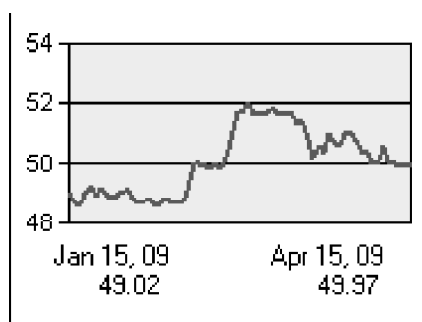
**2 Weeks ( -0.72% )**



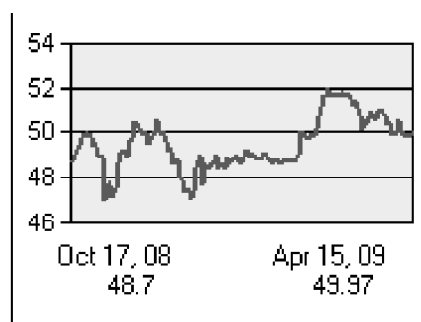
**1 Month ( -2.6% )**



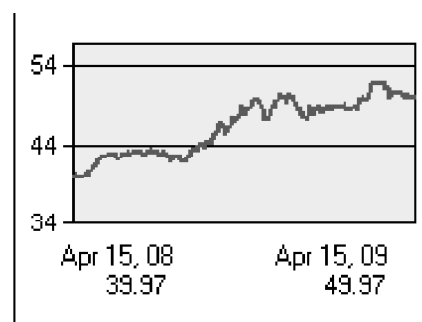
**3 Months ( 2.44% )**



**6 Months ( 2.47% )**



**1 Year ( 25.02% )**



- b) The company exposed itself to risk in not covering its transaction risks in the working capital cycle.
- c) The company, like many reputed companies was not following the mark-to-market system in accounting its forex exposure. Not hedging the principal repayments immediately but waiting for a period of three months when the INR depreciated further led to an additional cost of funding for the Company.
- 4) The company had not covered its interest rate risk. Considering the high volatility the currency markets and interest markets have been going through since January, 2008 and the series of financial crisis that has been gripping the International Majors since then, this decision could prove wrong if rates moved in opposite direction.

## 8. DISCUSSION

- 1) The losses suffered by the Company in its Foreign Exchange exposures has been in increased proportions due to the Global Meltdown but the Global Meltdown alone has not been the reason for its Loss in Foreign Exchange Portfolio.
- 2) The Loss has also been due to the natural risk involved in the Currency movements. There is no history that currency movement patterns were predicted well and volatility in currencies are inherent risks in Foreign Exchange Trading. But again, the volatility of currencies in the last one year and above of the period under study, has been abnormally high percentages than the normal times due to the effect of the Economic Meltdown.

**The Company took the following measures** as a positive step towards managing its Foreign Exchange Risk based on its past failures

1. It hired a Foreign Exchange Consultant on Retainership basis. The first Risk Management Policy drafted for the Company with the help of the consultant is furnished as **Annexure 1**.
2. It covered its ECB Loan with an option contract.
3. It initiated the process to cover its export transactions with ECGC. This takes care of the credit and country risk.
4. It expanded its Treasury Department with strength of 3 to start with. Had planned to increase it to a full-fledged team.

## 9. CONCLUSION

1. Unregulated Derivatives and inadequate accounting rules/ unenforced rules led to a series of financial crisis internationally. Better Risk Management Policies, disclosures and transparent reporting systems have originated as a result of these which, however, are yet to become fully operational and effective.
2. Economy of India and other developing countries also suffered a setback as a result of the above and on this backdrop it was suggested that India set up a State-owned fund that acquires stocks, bonds, property for better returns in the global financial markets. However, this has its own demerits  
The difficulties in assessing the reserve adequacy in a dynamic market and diverting a portion of excess reserves to the proposed Sovereign Wealth Fund for earning higher returns by investing in riskier assets needs to be evaluated with caution and prudence.
- 3) India, is a country that suffers from both current account deficits and fiscal deficit. There are neither significant earnings from commodity exports. Therefore, the idea of floating a SWF needs careful consideration and assessment.
- 4) Despite all the concerns and potential risks, Derivatives market has grown into a sophisticated market. The reason being - economists and Central Banks / Governments are well aware that for a progressive economy, competitive speculation helps in price discovery, market liquidity and efficient capital allocation.

The following additional steps need to be taken by Indian Companies in managing their Foreign Exchange

Risk which could serve as a guide to Risk mitigation and management for the other Indian corporates too.

- 1) They should not only have a Risk Management Policy in place which would outline and prescribe all steps and systems like Maximum Open Positions, Maturity Matches, Stop Loss situation, Monitoring Systems, but also ensure its implementation. This should be periodically reviewed and suitable changes made to meet the dynamic challenges this portfolio demands. A full-fledged Treasury Team should be set-up with necessary expertise to handle this risk.
- 2) The Working Capital Foreign Exchange Exposure also needs to be adequately covered against any drastic losses.
- 3) The translation risks should be adequately addressed and if necessary a Foreign Exchange Reserve be created to take care of unexpected losses despite the measures taken to cover the risk.

## Abbreviations

ECGC	Export Credit Guarantee Corporation of India
FII	Foreign Institutional Investors
ECB	External Commercial Borrowing
FEMA	Foreign Exchange Management Act
FEDAI	Foreign Exchange Dealers Association of India

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**Research Review**

Anuradha Sivakumar and Runa Sarkar, Industrial and Management Engineering Department Indian Institute of Technology, Kanpur on Corporate Hedging for Foreign Exchange Risk in India

**Bank**

Standard Chartered Bank

**ANNEXURE I**

**Foreign Currency exposure and Risk Management Policy for SGE Limited – a manufacturing Unit**

**Background:** The Company being in the business of Manufacture of Insulators has an exposure to foreign exchange as a result of both its import and export transactions.

In order to mitigate the risks associated in the Foreign Exchange transactions of the Company’s Business and to leverage the transactions in Foreign Exchange for optimum profit generation, The Company has decided to formulate a Foreign Exchange Risk Management Policy.

The currencies to which the Company is exposed are

**a) Under Working Capital Head**

Sl. No.	Type of transaction	Foreign Currency
1	Imports	GBP
2	Imports	USD
3	Exports	Euro
4	Exports	USD

**b) Under Capital Head**

Sl. No.	Type of Transaction	Foreign Currency	Period / Amount
1.	FCNRB Loan Repayment	US Dollar	Monthly installments of 14600 each
2	ECB Repayment	US Dollar	Monthly ballooning installments starting from March 2013 for USD 625000

The Company has the following Foreign Exchange transaction Exposures for April 2011-March 2012

Sl. No.	Particulars	Foreign Currency Amount	Rate (Notional)	Indian Rupee amount
1.	Imports	USD275947	51	1,40,73,297
2.	Imports	GBP24,150	81	19,56,150
3.	Buyers Credit	USD230500	51	1,17,55,500
4.	FCNRB (14600USD)	USD 175200	51	89,35,200
5.	ECB Loan (Principal covered)	USD15,000,000	51	765000000

In addition it has a projection of Foreign Exchange transactions for the current year as follows:

- 1) Annual US D Imports equivalent to Rs 3.5 Cr
- 2) Pound Imports equivalent to Rs 4.5 Cr.
- 3) Exports- Projected – Equivalent to Rs 10 Cr.

**Risks:** Company faces transaction exposure risk in its operations. The predominant risk exposure for the company is from sustained appreciation of GBP/INR and from USD/INR fall for netted USD payables.

**II. Objective of Foreign Exchange Risk Management policy**

1. To segregate projected and actual cash flows and to manage the net FX risks. Complete risk mitigation of non-trade payables like FCNR (B) loans within defined total cost approach.
2. After risk mitigation, look for possible rewards to lower costs in non-trade payables and netted trade exposures.
3. For Trade payables/receivables- netted exposure for a 6 month time frame will be the basis for risk mitigation.

### III. Strategy & Methodology

- 1) For non-trade payables- Cost of interest rate will be the benchmark for risk mitigation. 2) For trade payables/receivables- Costing rate for particular transaction will be set as the benchmark. If not, fwds will be the benchmark.

#### Process of identifying the benchmark rates

##### Benchmark

<i>Non-Trade</i>	<i>Trade</i>
Rupee interest rate applicable for Company	Netted amount of same type of transaction (Revenue/Capital) based on costing approach

- 2) **For trade transactions-** If it is transaction based, the fwd rates or rates above the fwds for imports and below fwds for exports will be considered (conservative method) for costing/realization purposes. This will give some leeway to manage the FX risks during periods of heightened volatility. Also, at the time of setting benchmark rate, the overall Global situation and domestic economic situations along with event risks will be studied and factored in the benchmark rate. If it is running order, then transactions will be done with appropriate price revision strategy. The average of the fwds during the time frame before reset of next price levels or the fwds whichever is higher will be the benchmark for imports and vice versa for exports.

The Benchmark rate for Trade payables and receivables will be given at the beginning of the Financial Year and reviewed and revised quarterly or identified period as per the market situations.

**For non-trade payables-** The Company will choose the prevailing Rupee Base rate of its banks or Rupee term loan rate for that tenor as the benchmark rate.

**Alternative 1):** For firmed netted Cash flows for 6 months period: 50% will be covered on cost basis and 50% can be left open as a directional Call.

**Alternative 2):** Cover 50% on Cost basis and cover another 50% basis through options, so that risks are mitigated and rewards are taken if market moves favorably.

**Alternative 3)** Cover 100% through Options, so that risks are fully mitigated at certain costs, and rewards are taken, if markets move favorably,

**Alternative 4)** Cover 50% through Options and remaining left open as a directional call.

At no time, the company will hedge beyond their firmed cash flow projections. Estimated cash flows can be covered only through Plain vanilla options with no liability. All Options mentioned above are plain options with premia paid/deferred to maturity. Leverage in Plain options is not allowed.

Company's risk in Foreign Exchange predominantly falls under the following categories:

- 1) Trade
- 2) Non-Trade

##### Trade Risks

1. All risks will be covered only on those pertaining to confirmed cash flows and not projected cash flow.
2. Decision on hedging projected cash flows will be done only by Chairman.
3. Confirmed Cash flow will be netted. Netting pertaining to the same transaction Head i.e. Revenue Purchases to Revenue Sales and Capital Purchases to Capital Sales.
4. In view of the volatile nature of currencies risk cover duration would be for a period of 6 months.
5. For periods beyond 6 months risk cover would be decided by Chairman.

##### Buyers' Credit / LCs

All imports for Revenue purchase will be attempted to be rolled over as Buyers' Credit.

##### Exports

PCFC will be attempted for confirmed Export orders.

##### Non-Trade Risks

Short-Term – FCNRB

1. All risks will be covered only on those pertaining to confirmed cash flows and not projected cash flow.
2. Decision on hedging projected cash flows will be done only by Chairman

##### ECB Loan

1. Principal covered under option
2. Interest rate risk.
3. Interest exchange risk is open and we have adopted a view based approach. Appropriate strategy will be adopted.

#### IV. Hedging Tenor.

Specific transactions are hedged for a period not more than 6 months. For period beyond 6 months, hedging is not done beyond 50% of actual cash flows for netted trade exposure.

For non-trade payables, hedging for the full tenor can be considered as long as the benchmark rate is not exceeded at any time.

**V. Tools for hedging risk**

1) Forwards in OTC Market.2) Futures in National Stock Exchange, 3) Options in OTC Markets.

**VI. Compliance**

All internal and external rules and regulations should be strictly complied with. FX Audit team will scrutinize the deals from compliance angle once in 6 months.

**VII. Control systems**

The Company's FX Risk management team will be headed by the CFO. He may appoint required personnel for implementing the deals. The Department will have front and back office separated. Both the front and back offices are required to give full details of trades to the CFO on a daily/weekly basis. There will be a daily/weekly MIS statement giving full details of hedging deals. MIS will also highlight whether the risk management policy goals are being met with. CFO will update the M.D./Chairman at periodic intervals and a full-fledged FX report will be presented to the Board on Quarterly basis. Within the hierarchy, the CFO and MD will decide the powers to be vested on themselves for transaction approvals.