Hedging Foreign Exchange Risk – Isn't it also a Risk?

Hedging is a risk management technique, primarily done to protect the foreign exchange exposures against the volatility of exchange rates, by using derivatives like Currency Options, Currency Futures, Forward Contracts, Currency Swaps, Money Markets etc. by taking off-setting positions against the underlying asset. The treasury manager should completely understand the firm's exposure and risk policy before applying hedging techniques. Minimum hedge ratio may be calculated to minimise risk in case of future contracts. This ratio allows the hedger to determine the number of contracts that must be employed in order to minimise risk of the combined cash-futures position. In hedging, to strike a balance between uncertainty and risk opportunity loss is a challenge. Hedging itself is a risk, and disastrous if it is applied incorrectly and with the intent of doing speculation.

The concept of Risk –

Risk is the possibility of actual outcome being different from the expected outcome. It includes both downside and upside potential. Downside potential is the possibility of actual results being adverse compared to the expected results and upside potential is the possibility of actual results being better than the expected results.

Foreign Exchange Exposure & Risk –

It is the change in the domestic currency value of assets and liabilities to the changes in the exchange rates. This may be positive or negative.

Positive exposure gives rise to Gain and negative exposure gives rise to loss.

How it is Measured –

Foreign exchange risk is measured by the variance of the domestic currency value of asset, liability or an operating income, which can be related to unexpected changes in the exchange rates.

- CA. Gurvinder S. Gandhi

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Hedging Foreign Exchange Risk –

Hedging refers to process, whereby one can protect the price of financial instrument at a date in the future by taking an opposite position in the present by using derivatives like Currency Options, Currency Futures, Forward Contracts, Currency Swaps, Money Markets, etc.

It refers to technique of protecting the financial exposures in the underlying asset or liability due to volatility in the exchange rates by taking offsetting positions through derivatives to offset the losses in the cash market by a corresponding gain in the derivatives market.

Hedging involves

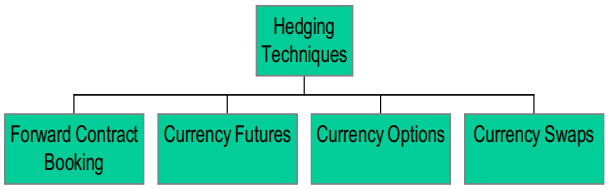
- Foreign exchange exposure identification
- Value of exposure
- Creation of offsetting positions through derivatives.
- Measurement of Hedge ratio.

- Degree of Risk acceptable to management
- Expectations regarding future movement of exchange rates.

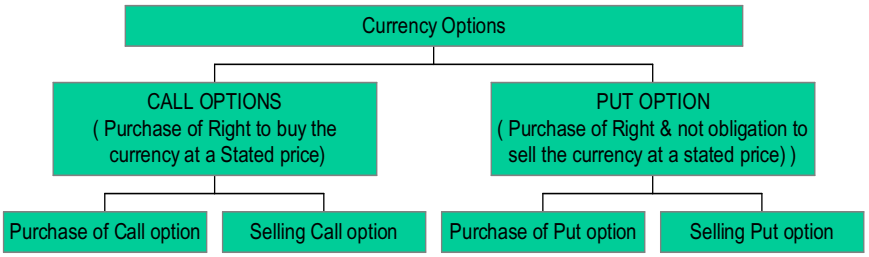
Derivatives are hypothetical assets; they derive their value from the underlying assets.

One very fundamental question – why do we need derivatives?

For risk management, there should be negative correlation between the assets in a portfolio. Risks can still be managed, even if there is a positive correlation between the asset in the portfolio and that is through creation of hypothetical assets against those assets i.e. (underlying asset).



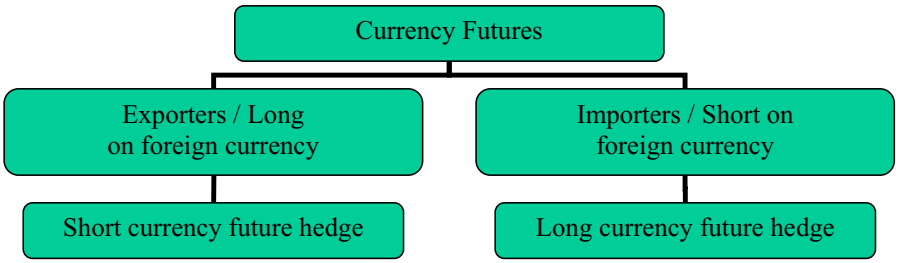
Currency Options – are instruments, which give the buyer of the option the right but not the obligation to execute a specified transaction in the underlying currency pair. This gives the buyer the flexibility to execute settlement or not.



They are different from other derivatives in that they provide downside protection against risk and also an upside benefit from favourable movements in the underlying exchange rates.

Forward Contracts – are a commitment to settle at a fixed forward price. This provides only upside benefit from a favourable movement in the underlying exchange rates, but not downside protection.

Currency Futures – are one of the derivatives, where exporters and importers can hedge their



positions by selling and buying future contracts. It provides a means to hedge the trader's position who wishes to lock in exchange rates on futures currency transactions. By purchasing (long hedge) or selling (short hedge) currency futures, a firm can fix the incoming and outgoing cash flows in one currency with respect to others.

Hedging, is it Necessary?

To hedge or not to hedge is thus a very difficult question. For applying any hedging strategy Treasury managers must have correct answers to these fundamental questions.

- How well he understands and knows the firms risk exposure.
- If identified, would hedging these risks make cash flows positive?
- Correct application and timing of hedging strategies must be in line with exchange rate movement.
- If yes, is it possible to hedge these risks adequately?

There is of course no 'set of rules' that can provide perfect hedging strategies, and thereby guarantees that there would be no wild fluctuations in company's cash flows. However,

by using un-speculative strategies, with the calculation of optimal hedge ratios, one can hedge its risk.

Additionally, with the increased volume of international trade and financing, increase in volatility of exchange rates and increased exposure of foreign exchange gain and losses, hedging foreign exchange risk has gained importance.

Hedging, How could it be Destructive?

Speculation and Hedging –

When speculation is mixed with hedging, it is destructive. There is a thin line of difference between hedging and speculative activity. Speculation means dealing in a commodity or financial asset with a view to obtaining profit on the prospective changes in the market value of the item under consideration. It involves contemplation of future expectations and taking positions to gain, unlike hedging in which offsetting positions are taken, but not with the objective of earning a profit. Speculation involves forecasting the evolution of supply and demand, i.e. if exchange rate rises, when speculators are long and fall when they are short, then they gain. They lose when forecasts turn out to be wrong.

Hedgers offset their risks by taking offsetting positions; it is speculators who bear the risk transferred by the hedgers. It is for this risk borne by them that they get a reward in the form of speculative profits.

Therefore the nature of speculative activity is such that to earn speculative rewards, they must bear risk.

Hedging and speculation are not similar answers to a problem. They cannot be used interchangeably for getting desired results or to meet similar objectives. Hedging is a risk management or reducing technique, where the objective is not to earn profits, unlike speculation. Hedging when mixed with speculation can be disastrous for the hedger.

Uncertainty and Risk of Opportunity Loss –

How to strike a balance between uncertainty and the risk of opportunity loss?

The problem of settling an effective hedge ratio has two dimensions.

- Uncertainty: If a firm does not hedge the transaction, it cannot know with certainty at what rate of exchange it can lock its exposures. It could be a better rate or a worse rate.
- Opportunity: If firms enter into hedge transactions like forward contracts, currency options etc, they would of course be certain at a rate at which they are locking their exposures. But now they have taken an infinite risk of 'opportunity' loss.

Hedgers offset their risks by taking offsetting positions; it is speculators who bear the risk transferred by the hedgers. It is for this risk borne by them that they get a reward in the form of speculative profits. Therefore the nature of speculative activity is such that to earn speculative rewards, they must bear risk

Perfect Hedge Ratio – So construction of an exact opposite position to the existing risk exposure results, in a perfect hedge, which is a challenge.

There is yet another dimension to hedging. Hedging has a cost. If the expected risk does not materialise, hedging will prove an ineffective way of doing business. All these complexities associated with hedging through derivatives pose a great challenge to arrive at a right Hedge ratio.

Various real life instances of how hedging has proved to be destructive are enumerated alongside.

(A) Forward Contracts taken by an Importer –

During 2004 and early 2005, various short-term forward contracts were taken in USD by a leading automobile importer, to hedge its imports. At the time of maturity, USD depreciated substantially to the extent of Rs 3 per USD, below the rate at which forward contracts were taken. It resulted in opportunity loss of approximately Rs. 15 crore for the firm, in spite of the fact that the firm had hedged its exposure.

In the above case firm may have taken currency call options or currency long futures as a hedging instrument to hedge its imports. Currency call options provide downside protection against risk and upside benefit from favourable movements.

Alternatively, forward contracts may have been cancelled, when exchange rate has started moving in opposite direction for minimising the loss.

So selection and timing of right hedging strategy is of utmost importance and it should be in line with the exchange rate movement.

(B) Currency Call options taken by an Importer –

During 2005, a Fortune 500 consumer electronics MNC, had taken call options to buy USD and sell INR, to hedge its imports. The options were taken at a higher strike rate to save call premium, since it has a negative relationship between call premium and strike rate, as strike rate increases call premium decreases. The other objective of the hedger was to earn profits, since it expected USD to depreciate against rupee.

But USD appreciated against rupee, instead of depreciating, unlike the hedger's expectation. Firm lost heavily in terms of opportunity loss of Rs. 2 per USD, since it remained exposed to risk by selecting a very higher Call option strike rate. Hedger instead of doing hedging by selecting

a Call option strike rate equivalent to forward contract rate for the same maturity period, speculated, by selecting a very high Call option strike rate.

Under-mentioned pay off Table may be used for hedging a currency call option for import transactions.

Eg – On 1st May 2005, a firm bought a 3-month currency call option contract to buy USD Call, sell INR @ 43.70 at a premium of 20 paisa.

Contract Size = USD $2 million.

Expiry period - 31st July 2005.

3-month Forward Contract rate - 43.70

Spot rate on Ist May 2005 - 43.50

OPTION v/s FORWARD COMPARISON		
(In INR)		
MARKET RATE USD	FORWARD USD@43.70	OPTION USD@43.70 +.20P
42.70	-2,000,000	1,600,000
43.00	-1,400,000	1,000,000
43.10	-1,200,000	800,000
43.20	-1,000,000	600,000
43.30	-800,000	400,000
43.40	-600,000	200,000
43.50	-400,000	0
43.60	-200,000	-200,000
43.70	0	-400,000
43.80	200,000	-200,000
44.00	600,000	200,000
44.20	1,000,000	600,000
44.50	1,600,000	1,200,000
44.70	2,000,000	1,600,000

(C)Purchased Call Option and Sold Put Option at Different Strike Prices to Hedge Imports

A leading petrochemical importer, purchased currency call option and sold put option to hedge its imports. The firm expected the USD to appreciate.

Eg – On 1st May 2005, a firm bought 3 month currency call option contract to buy USD call, sell INR @ 43.70 at a premium of 20 paise. It sold a 3-month currency put option @ 43.80 at a premium of 10 paise.

Contract Size = 2 million USD.

Expiry period - 31st July 2005.

3-month Forward Contract rate - 43.70

Spot rate on 1st May 2005 - 43.50

There were twin fold objectives of the firm to adopt this strategy, firstly to reduce the premium from 20 paise to 10 paise and secondly it expected the USD to appreciate.

There is of course no 'set of rules' that can provide perfect hedging strategies, and thereby guarantees that there would be no wild fluctuations in company's cash flows. By using un-speculative strategies, one can hedge its risk. With the increased volume of international trade and financing, increase in volatility of exchange rates and increased exposure of foreign exchange gain and losses, hedging foreign exchange risk has gained importance

But actually, the USD depreciated to Rs 43.45 on the maturity date, and the firm lost an additional 35 paise per USD, instead of reducing its premium cost from 20 paise to 10 paise. Ideally, the firm may have kept its PUT strike price less than 43.70. It adopted an aggressive speculative strategy to bring down its premium cost.

Conclusion

So deciding to hedge is one thing, and getting it right is quite another. Hedging should also be done without speculation. Further, in-correct application of hedging strategies along with no trade off between uncertainties associated with exchange rate and opportunity loss, makes a hedging foreign exchange risk itself a risk. ❐