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Strategies of Indian Firms in Coping with Forex Risk Management: An Inquiry through Case-Research Method

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Abstract

More and more Indian firms are becoming global in their operations – through exports and imports, by setting up manufacturing plants abroad and through joint-ventures and tie-ups. In this process most of them are dealing with multiple currencies. This has increased the overall exposure of Indian firms to foreign exchange-rate fluctuations. How have they been coping with the risk associated with the exchange-rate fluctuations? In order to explore this, the authors have engaged the case-research method. The authors studied 64 cases for this purpose. Of these 27, firms have been handling forex exposure and/or have had at least one near-crisis situation in the past. The remaining 37 cases are Indian firms from sectors like Textiles, IT, Gems and Jewelry, Pharma, Engineering, FMCG and Energy. The study focused on the context of these firms, their business model, the sources of forex exposure and the policies and practices of managing forex exposure risk. The authors have tried to identify the basic factors underlying the forex exposure and to identify patterns, if any, in the coping-strategy. They conclude that the insights would help formulate a generic strategy.

Keywords: *Case-Research Method, Forex Risk Management, Coping-Strategy*

1. Preamble

Any firm transacting business across borders has to deal in foreign currencies and this brings the firm face to face with forex exposure. Towards the last quarter of the 20th century the complexities of forex exposure have increased for a variety of reasons. First, all developed countries and many other countries have opted for floating exchange-rate-regimes leading to dynamic and continuous currency movements. Secondly, most economies opened up during the 1980s and the 1990s leading to increased competition in the market place. Thirdly, technological changes were very rapid in the same period in the form of internet and communication revolutions making the entire globe closely connected and rapidly accessible (Toffler, 1990). The Indian context is characterised by the opening of the economy in the post-1991 period, the abandonment of the administered foreign exchange regime to partially floating regime in the 1990s and the transition of the economy from an investment-driven stage to innovation-driven stage of economic development (Porter, 1980). In this process more Indian firms have become global, more firms have got their shares listed in the New York stock Exchange[1], more firms started finding places in Fortune 500[2] and Forbes 2000[3] lists. Multi-national companies are the pioneers in developing techniques of coping with currency fluctuations. How are the Indian compa-

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nies coping with the forex exposure in the increasingly competitive market scenario? This is the focus of this research study.

2. Survey of Literature

There are many studies on country specific MNCs about the way they managed their foreign exchange risks. UK Based MNCs are covered in a series of studies with Belk taking a significant part in each of them (Belk, 1990; Belk, 2002; Belk and Glaum, 1990). US based MNCs are studied by different authors (Choi, 1995; Duangploy et al, 1997; Jorion, 1990). Marshal compared the practices of the MNCs based in the US, UK and the Far East (Marsahl, 2000). Hakkarainen and others have studied the firms in Finland (Hakkarainen, 1997). Practices among Australian firms are studied by Batten et al (Batten et al, 1993). Al-Janabi studied the experience of firms in the Moroccan market (Al-Janabi, 2006; Al-Janabi, 2006a). Jordanian firms' practices are studied by Al-Momani (Al-Momani et al, 2008). Assad has surveyed the familiarity and practices of Tanzanian firms (Assad, 2011). Yo-Jung recorded the practices followed by Taiwanese firms (Yo-Jung, 2009). There is fair amount of similarity in the practices of MNCs based in the developed world, especially those in USA and UK. The practices followed by firms in the Far East are quite different. Invariably all of them attach maximum importance to transaction exposures and maximum similarities in treatment are found in this segment. The manner of treating economic exposures is the area of maximum difference. The firms in the developing countries are found to follow the footsteps of the firms in the developed countries.

Choi and Prasad (Choi and Prasad, 1993) studied 409 US based firms between 1978 and 1989 and observed that the values of firms were significantly sensitive to the exchange-rate fluctuations. They observed nearly 60 % of these firms stood to gain with dollar depreciation. They also concluded that exchange-rate sensitivity of such firms were more during the weak-dollar period than during strong-dollar period. A major challenge before a firm is the decision regarding hedging: when and how much to hedge. Towards this Shapiro and Rutenberg provide a workable approach (Shapiro and Rutenberg, 1976). The traditional approach is based on finding the accounting balance; for this, currency forecasts are essential. Most researchers recommend tracking key economic indicators - like balance of payment deficit, reserves of gold and hard currencies, level of borrowings, inflation rate etc - to arrive at meaningful currency forecasts. In another study (Soenen and Prasad, 1993) the authors concluded that hedging was not a solution to all the situations of forex exposure. This was more so when a firm faced economic exposure on long-term basis. The authors contend that such situations can be managed better through specific operational strategies. They have listed the possible strategic options as (1) Matching of inflows and outflows in each currency; (2) Flexible strategies with respect to sourcing, manufacturing and finance; and (3) selection of portfolio of business with offsetting forex exposures.

The literature is replete with large number of case-studies of individual firm's experiences in managing forex exposures.

3. Research Question and Methodology

Given the varied experience of firms in different regions and currencies, it appears that qualitative aspects have great significance in the crafting of firm-strategies in addressing forex exposure. For this precise reason case-research method is chosen. The case-research method would enable to explore the contextual factors of the business of the firm, the firm's business model, the external environment of competition and how the firm responds to the situation. With this background the research objective of this paper is defined as: *To explore and gain insights about the contextual factors affecting the forex risk management and to identify the existence of any pattern in the risk management strategies.*

In order carry out the study, cases of forex exposure management are compiled from secondary sources. To make the study focused it was felt appropriate to study a set of firms that have faced critical situations of forex management in the past and capture the business context, business model, responses of the firm and the outcome. It was felt the findings from this set of cases would enable a focused diagnosis of contemporary Indian firms, their business context, business model, and possible strategies they could employ. The analysis of these cases would possibly enable creation of a framework or benchmark of analysis. The former set of cases could consist of MNCs and other foreign firms with note-worthy experiences in the past. The Indian firms were to be picked up from sectors that were more involved in international business. The expectation is that the study could identify critical parameters and issues of relevance in the forex risk management; it could come up with frameworks of analysis; it could come up with certain patterns of firm behavior in different situations; and it could help evolve guidelines for firms in framing their strategies. In all 64 cases were compiled for analysis.

4. Analysis and Discussion

The 64 cases were grouped into two segments: firms that have had critical forex situations in the past and others. The former group had 27 cases of which 25 were foreign companies and 2 were Indian firms. The latter segment consisted of 37 contemporary Indian firms from sectors like Textiles, Gems and Jewelry, IT and ITES, Pharma, Engineering, FMCG and Energy.

A careful analysis of the first set of cases revealed the critical factors of their business context**.** Salient observations are:

a. A firm faced forex exposure from commercial transactions (exports or imports), financial transactions (debts-repayments, interest-payments etc) and investment transactions (equity, FDI, dividends, repatriation etc). There were also firms that were impacted by forex-rate fluctuations even when they did not have any of these transactions.
b. Some firms manufactured in one country and exported to another; some manufactured in one country and exported to many others. There are some who made products in multiple countries and exported to multiple countries. (one-to-one; one-to-many and many-to-many). Similar possibilities existed for imports also.
c. Some firms were net exporters. Some were net-importers. Some had substantial imports and exports; the balance varied from year to year. Some did not have any imports or exports.
d. Forex exposure was essentially the result of forex-rate fluctuations. These could be identified as the movements of the domestic currency vis-à-vis another currency of relevance to the situation. Such movements had only two directions: either appreciation or depreciation.
e. Currency movements could be of short-term or long-term nature with significantly different implications.
f. Strategies employed by the firms were also of different categories. There is the prospect of natural hedges and internal hedging strategies; there is also the prospect of external hedging strategies. Further almost all the hedging strategies had short-term horizon. In the long-term the strategies available were restructuring of the firm, changing the business model of the firm etc.

The above observations can be summarized into a generic set of critical parameters/variables as below:

4.1 Initial condition

This has to do with the intrinsic nature of the firm whether it is a net exporter (X), or a net importer (M), or with significant exports and imports (X-M), or with zero exports and imports (Z).

4.2 External Stimulus

This refers to the movement of the domestic currency: it could be appreciation or depreciation. The currency movement can be of short-term or long-term duration. Normally it is expected that short-term currency movement will be observed first; the long-term perspective would be felt later.

4.3 Firm-Response

This has to do with the coping strategy of the firm. The firm could be finding natural hedges; it could be engaging internal or external hedging techniques. The firm would be responding with a short-term strategy or a long-term strategy.

Based on the above key parameters the sets of cases have been regrouped into four broad clusters. This is shown in Annexure-1. Careful scrutiny of the cases and the patterns within the clusters lead us to a set of inferences. The set of 27 cases is analyzed first.

4.3.1 The Net-Exporters (X)

There are 7 net exporters in this set. 6 of them experienced domestic currency appreciation while one firm (Pemex Corp, Mexico) experienced depreciation of Mexican Peso.

Pemex corp was into oil exploration within Mexico and the output was exported against US$. Depreciation of domestic currency was beneficial to the firm.

Toyota and Toshiba, the Japanese automakers were making cars in Japan and exporting to the rest of the world. Domestic currency (Yen) appreciation impacted the firms adversely. They restructured themselves to get production from other countries where the costs were less. Embraer, the aircrafts manufacturer from Brazil was hit adversely by domestic currency appreciation. The firm tried to hedge the impact without any significant success. GHCL (Textile div) and Ashima were Indian firms hit by appreciation of Rupee. These managed to overcome the situation by cleverly sourcing cotton from countries where it was cheaper and selling the output in countries where they were costly. Harmony Corp of South Africa was in mining and refining of gold. When gold prices went up internationally, the firm's fortunes should have been up. But the firm's contribution to South Africa's GDP was significant and hence the South African currency appreciated with the spurt in the price of gold. This enhanced the domestic cost of the firm eating into the real profitability of the firm. There was no way to hedge the rise in the domestic costs and hence the firm had to suffer.

4.3.2 The Net-Importers (M)

There are no net-importers in this set.

4.3.3 Firms with Significant Exports and Imports (X-M)

There are 18 firms of this category in this set. Of these 5 are MNCs with operations in multiple currency areas. Each of them employed the strategy of finding out the net exposure in each currency and then taking a decision regarding hedging the net exposure (Avon International, Pepsico, McDonald, Vodafone, and SKF)

9 firms formed another sub-set. Daimler Chrysler and BMW found their competition increasing with the appreciation of Euro. Porsche also had a similar situation which it tried to overcome through short-term hedging with no tangible results. Markel, a US firm had the philosophy of selling its products to European customers at constant European prices. It found its fortunes dipping when US$ appreciated. The firm had no natural hedge to cover. Laker Airways a British firm had its expenses in US$ (salaries, loan payments etc) while its income was in US$ and GBP. When dollar appreciated the firm suffered. General Motors, USA had substantial exposure to Canadian dollar and Argentina's Peso. When US$ appreciated the firm hedged its exposure to Canadian dollar; tried to create natural hedge for Argentina's Peso by promoting exports of materials, parts and components from Argentina to various plants of GM across the globe. Corus Steel and GM, UK were impacted by the appreciation of the GBP. Both of them tried to hedge exposure through short-term strategies. General Motors, USA observed that its main competition was from Japanese automakers. Each of the Japanese automobiles had a significant component of Yen in its costs. Whenever yen depreciated, the Japanese carmakers shared the benefit with their customers by reducing the prices. This adversely impacted General Motors. Fluctuations in Yen were very frequent. In order to counter this impact on a long term basis General Motors decided to increase its exposure to Yen.

When Lufthansa entered into a contract with General Electric to buy engines on a regular basis, the contract specified the manner in which the risk of exchange-rate movement will be shared between the two firms. The contract specified the exchange–rate at which the contract was signed; it specified the range of the exchange-rate wherein the loss would be absorbed by Lufthansa; another range wherein Lufthansa would share the losses partially and another range wherein it would not share the losses. The contract between Mitsubishi and Chrysler also had similar covenants.

The set also discusses the case of South Korean Chaebols which collapsed during the South Asian crisis. The Chaebols had leveraged themselves very high (with debt-to-equity ratios as high as 10) in various currencies and with short-term maturity; they invested these funds in long-term projects. Since such a phenomenon was happening across the country among all Chaebols and all South Korean banks, the South Korean currency, Won, lost its value significantly. The Chaebols found it difficult to service because (a) the invested funds were slow in giving returns and (b) the devaluation had made servicing much more difficult. As a result many of the Chaebols did not survive. The case of Perfect Pieces is somewhat similar, albeit at a much smaller scale. This Australian company making roof-tiles had its costs in Yen, New Zealand dollars, US dollars besides Australian dollars. Its revenues were in Australian dollars and US dollars. There was significant mismatch between the quanta of inflow and outflow in terms of currencies and in terms of time-frames of the cash-flows. This had made the financial situation of the firm very complex and risky.

4.3.4 Zero Exim Firms

Kodak, USA, in 1985, did not have any foreign currency exposure. With the appreciation of US$, the firm faced increased competition from Japanese firms. Similar situation was faced by a South European firm (making toys) in 2000 with the appreciation of Euro. This firm realized the long-term impact and shifted its operations to South Asia.

Similar analysis has been done for the contemporary Indian firms and they have been grouped into four clusters of X, M, X-M and Z. These firms are chosen from sectors like IT, Gems and Jewelry, Pharma, Textiles, Engineering, FMCG and Energy. Each sector has its own characteristics and these are superimposed with the critical parameters in this analysis. The results are summarized below:

4.3.4.1 The Net-Exporters (X)

All the firms in the IT sector, all the firms in the Gems and Jewelry sector and one firm from the energy sector (Reliance Inds Ltd.) belong to this cluster. The firms in the IT sector operate in multi-currency areas, but invoicing is done predominantly in US$ or Euro. They generally do not have foreign currency loans and significant part of their operating costs is in Indian Rupees. Each of the foreign operations transfers their net earnings at regular intervals to the corporate office in India. The firms in the Gems and Jewelry sector import the input materials (Roughs) and export the output fully. They also have no foreign currency loans and all wages and operating expenses are paid in Indian rupees. RIL, though operating in India sells its output of petro-products to distribution companies against US$ and hence is a deemed export company. With the predominant history of depreciation of the Indian Rupee all these firms were in comfortable zones. The only exception was during 2004 to 2007 when INR appreciated; the firms had to face the brunt of the situation and since then they have been resorting to hedging selectively.

4.3.4.2 The Net-Importers (M)

Bombay Dyeing and Century Enka from the textile sector, BPCL and IOCL from the energy sector are the firms found in this cluster. The latter two are dominant public sector undertakings with names in the Fortune 500 list. All the four firms have to import petro-based products which are scarce in India. The former two firms have been engaging hedging techniques actively for several years. The latter two have started using hedging techniques in recent years.

4.3.4.3 Firms with Significant Exports and Imports (X-M)

All the firms of the Pharma, Engineering and FMCG sectors, and two firms from the Textile sector are found in this cluster. Majority of the firms (20 out of the 37) are in this cluster. Most of the firms in this cluster operate in multiple currencies. Almost all of them are found to follow the process of finding the net exposure in each currency area and then taking a conscious decision regarding hedging. The hedging decision, in each currency, consists of whether to hedge the net exposure or not and if yes hedge to what extent.

4.3.4.4 Zero Exim Firms (Z)

Four PSUs – NTPC, NHPC, GAIL and PGCL – find place in this cluster. These firms do not have direct interaction with overseas market. They do have large FC loans which are impacted by exchange fluctuations[4]. Every time the domestic currency (INR) depreciates, these firms end up paying more INR toward interest and principal payments. They have not been resorting to hedging or any other forex risk mitigation strategies. So far they have not been taking cognizance of forex exposure loss since they are able to pass on the losses to their customers without any dilution[5].

From the foregoing discussion it is possible to identify the characteristics of the firms in each cluster and come up with definite coping-strategies for that cluster. This is detailed in the table below:

An analysis of the number of firms in each cluster is made to explore possible patterns and meanings. The set of contemporary Indian firms (37 in no.) has firms from six different industry-sectors. Table 2 shows cluster-wise distribution of these firms. 9 firms are net-exporters (X), 4 are net-importers (M), 20 are with significant exports and imports (X-M) and 4 are in the Zero-Exim category. Major chunk of the firms falls in the X-M category (20 nos. or 54 %). Similar tendency is seen in the set of firms with prior forex exposure also, where 18 out of 27 firms (67%) are in the X-M category. When we combine the two sets the strength of firms in the X-M category is seen to be 38 out of 64 (59.38 %). There seem to be a tendency for larger number of firms to converge into this category.

On a scrutiny of the nature and size of the firms in the X-M category, it can be seen that (a) larger firms tend to be in this category; (b) firms operating in multiple-currency-areas tend to be in this category; (c) older/established/mature firms tend to be in this category. This leads to a postulation that a firm in its early stages of growth, it may be observed to be in X, M or Z clusters. When the firm becomes large and operates in multiple economies and currency areas it tends to move into the X-M cluster. This is the case with most of the MNCs. It would be reasonable to presume that when a firm becomes large and grows out of a single economy it would be in the X-M cluster where Strategy-Type-3 is most relevant and applicable.

The study of the cases – both international firms and contemporary Indian firms – indicates that most of them do engage hedging as a strategy to manage forex exposure in the short-term. Almost all the hedging instruments available in India are of short-term nature and hedging has its costs also. Besides, not all situations of forex exposure are resolved through hedging. So firms are judicious and discrete about hedging. This is supported by Soenen and Madura (Soenen and Madura, 1991) by stating that hedging is not the final answer for all situations of forex exposure and that firms may have to look beyond hedging in many situations.

5. Conclusion

From the foregoing analysis of the 64 cases the following conclusions emerge:

In the management of forex risk management of a firm there are three critical parameters/variables.

Table 1. The four clusters and the strategies of forex exposure management

Strategy-Type #	Initial Condition (Type of Firm)	External Stimulus (Trend of Local Currency)	Impact on Firm	Suggested Firm Strategy
Type-1	X: Net Exporter	A: Appreciation	Exports fetch less Foreign currency. Less Profitable operations	Explore restructuring of the firm to outsource production
		D: Depreciation	Exports fetch more Foreign currency. Favorable situation	No action required.
Type-2	M: Net Importer	A: Appreciation	Imports will be cheaper. Favorable to the firm.	No action required.
		D: Depreciation	Imports will require more Local Currency. Hence costly.	The firm will have to explore import substitution.
Type-3	XM: Substantial imports and exports	A: Appreciation D: Depreciation	Mixed results	a. Find natural hedges in each currency area b. Residual exposure in each currency area to be hedged
Type-4	Z: No imports, No exports	A: Appreciation	Operations of the firm will lose its competitiveness vis-à-vis imports.	Strategy will be to outsource or re-locate operations.
		D: Depreciation	Operations will be cheaper. Scope for arbitrage exists	No action required.

Table 2. No. of firms under various categories (Contemporary Indian Firms)

Sector	Nature of the firm				Sector Total
	X	M	X-M	Z	
IT	4 (10.8%)	0	0	0	4 (10.8%)
Gems and Jewelry	4 (10.8%)	0	0	0	4 (10.8%)
Pharma	0	0	7 (18.9%)	0	7 (18.9%)
Engg	0	0	9 (24.3%)	0	9 (24.3%)
FMCG	0	0	2 (5.4%)	0	2 (5.4%)
Textile	0	2 (5.4%)	2 (5.4%)	0	4 (10.8%)
Energy	1 (2.7%)	2 (5.4%)	0	4 (10.8%)	7 (18.9%)
Total	9 (24.3%)	4 (10.8%)	20 (54.0%)	4 (10.8%)	37 (100%)

Table 3. No. of firms under various categories

Type	No. of Firms		Total
	Cluster-1: firms with prior forex exposure	Cluster-2: Contemporary Indian Firms	
1	07 (10.94%)	09 (14.06%)	16 (25.00%)
2	0	04 (6.25%)	04 (6.25%)
3	18 (28.13%)	20 (31.25%)	38 (59.38%)
4	02 (3.13%)	04 (6.25%)	06 (9.38%)
Total	27 (42.20%)	37 (57.81%)	64 (100%)

5.1 The Initial Conditions of the Firm

Whether the firm is a net-exporter (X), or a net-importer (M), or has significant exports and imports (XM) or has Zero Exports and Imports (Z).

5.2 The External Stimulus

The short-term movements of the domestic currency. It could be appreciation or depreciation.

5.3 The Firm Response

This will depend on the earlier two parameters, the resources at the command of the firm and the accumulated learning of the firm.

Based on the four possibilities in the initial conditions and the two possibilities of currency movement, eight (8) scenarios are possible. It is possible to describe the impact of each of these scenarios and suggest an appropriate strategy for each of the scenarios. (See Table 1).

In the early stages of its existence, a firm may find itself categorized as net exporter(X), net-importer (M) or zero-exim (Z). However as the firm grows bigger and becomes global in its operations, the firm would have significant transactions across continents and currencies. It would then be in the X-M cluster. In that situation the strategy for forex exposure will be the one described under Type-3. On this ground this strategy can be treated as the most generic strategy for all firms.

The essential steps of the most generic strategy (Type-3) shall be:

- Take advantage of the natural hedge available to the firm to the maximum extent.
- Explore the prospect of creating natural hedges, if not available already.
- Identify the net exposure in each currency.
- Take a conscious decision whether to hedge the residual/net exposure in each currency.
- The hedging decision in each currency shall consist of
  a. To hedge or not.
  b. If hedging is desired, to what extent.
  c. Method of hedging.

Hedging techniques as engaged by firms are of short-term nature only. If the forex exposure is of long-term nature and a firm needs to find a long-term solution, it has to resort to strategies like restructuring its business, changing its business model etc.

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7. End Notes

1. In January 2014, 14 Indian companies had their ADRs (American Depository Receipts) listed on US stock exchanges. These are: Dr Reddy's Labs Ltd, HDFC Bank, ICICI Bank Ltd, Infosys Technologies Ltd, Sesa Sterlite Ltd, Tata Motors Ltd, Wipro Ltd and WNS Holdings Ltd at New York Stock Exchange; Rediff.com and Sify Technologies Ltd at NASDAQ; Grasim Industries Ltd, JK Lakshmi Cement Ltd, MTNL and Silverline Technologies Ltd at OTC. Source: http://topforeignstocks.com/foreign-adrs-list/the-full-list-of-indian-adrs/
2. In July 2014 there were 8 Indian companies in the Fortune 500 list. These were IOCL (96thrank), RIL (114), BPCL (242), HPCL (284), Tata Motors (287), SBI (303), ONGC (424) and Tata Steel (484). Source: http://articles.economictimes.indiatimes.com/2014-07-07/news/51133675_1_eight-indian-companies-tata-motors-tata-steel
3. In May 2014, there were 54 Indian companies in the Forbes Global 2000 with Reliance Industries in the lead. Source: http://currentaffairs.gktoday.in/54-indian-companies-forbes-global-2000-05201413118.html

4. In the early part of this paper forex exposure is defined as that occurring from commercial, financial or investment transactions. In the case of the PSUs – NTPC, NHPC, PGCL and GAIL – financial exposure is present since 30% to 50 % of their debts are denominated in foreign currency. Strict application of the definition does not permit these firms to be categorized as Zero-Exim firms. This aspect is temporarily ignored only for the sake of simplicity in explaining the cluster.
5. These firms have not been feeling the pinch of forex exposure because they are able to pass on the losses to their customers. The possible reasons to this situation are (i) electricity pricing in the country is yet to become competitive (ii) the transactions are government to government (G-to-G) where such refinements are, perhaps, not being monitored till now. But the fact remains that there is a cascading effect of such losses on the energy prices and subsequently on the goods and services that utilize the energy. The impact could be minimized by appropriate intervention at the right stage.
6. The 64 cases studied in this paper are compiled from various sources: books, papers, articles, annual reports, websites etc. A listing of these sources, which run into 182 items of reference, is not presented here to avoid clutter.

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Annexure 1. List of Cases studied

A. Cases with prior history of Exposure Management

Sl . No.	Firm	Year	Initial Condition	External stimulus	Fim Response
1	Harmony Corporation	2001		A	When gold prices went up globally, the fortunes of the went up. Since gold was the major output and harmony Corp was part of it, the wealth of S Africa went up resulting appreciation of it currency. This impacted the profitability of harmony negatively. Harmony Could not restructure. Had to suffer
2	Embraer	2003	X	A	Hedged short-term exposure; with little success.
3	Toyota	1990		A	As Yen appreciated these firms got their products made outside Japan. Restructured
4	Toshiba	1988		A	
5	GHCL	2007		A	When Rupee appreciated they imported cotton from where it was cheaper and sold the final products where they were costlier.
6	Ashima	2007		A	
7	Pemex corp			D	Favorable situation. No action
8	Chrysler & Mitsubishi	1983		-	Procurement agreements had clauses that specified the sharing pattern of losses for variations in the exchange rate.
9	GE & Lufthansa	2000		-	
10	Daimler Chrysler	2001		A	Competition increased
11	Porsche	2004		A	Treid short-term hedging; ineffective
12	Markel Group	2001		A	US firm trying to sell goods to Europe at constant European prices. When $ appreciated the firm suffered.
13	Laker Airways	1981		A	Revenue in GBP while expenses in US$. With US$ appreciation the firm suffered.
14	General Motors A	2001		A	With US$ appreciation the firm needed to address Can $ and Argentinian Peso exposures. Former was hedged; the latter was managed through thrust on more exports etc.
15	General Motors B	2001	XM	A	Tried to create Yen exposure to counter Japanese competition. Restructured.
16	BMW	2009		A	Tried to create natural hedges and counter exposures in every currency. The amounts uncovered were hedged.
17	Corus steel, UK	2001		A	The firm hedged most of the exposures.
18	General Motors, UK	1991		A	Engaged hedging to cover short-term exposures.
19	Perfect Pieces Ltd	1998		A	Exposures in different currencies. Earning also. These were not balanced. Firm was trying to balance expsure in each currency.
20	Chaebols of S Korea	1997		D	Currency mis-match, and maturity mismatch. Chaebols collapsed.
21	Avon International	1997		-	Multi-currency operations. Firm tried to net the exposures in each currency through natural hedges. The residuals were hedged.
22	McDonald Corp	2009		-	
23	Pepsico	2010		-	
24	Vodafone Group	2010		-	
25	S K F	2012		-	
26	Kodak	1985	Z	A	With $ appreciation, external competition was intense. The firm could not evolve an effective strategy.
27	South European Firms	2003		A	In view of competition and long-term non viability, firm decided to shift operations to China.

B. Contemporary Indian firms

Analysis of Indian Cases		Type of Firm				Hedging Horizon	
Name of Firm	Year	X	M	XM	Z	Short-term	Long-term
IT Sector							
Infosys Ltd	2012	1	0	0	0	1	
Patni Comp Systems Ltd	2012	1	0	0	0	1	
TCS	2012	1	0	0	0	1	
Tech Mahindra Ltd	2012	1	0	0	0	1	
Gems & Jewelry Sector							
Gitanjali Gems Ltd	2013	1	0	0	0	1	
Shrenuj & Co Ltd	2013	1	0	0	0	1	
Lypsa Gem Ltd	2013	1	0	0	0	1	
Winsome Diamonds & Jewelery Ltd	2013	1	0	0	0	1	
Pharma Sector							
Glenmark	2012	0	0	1	0	1	
Dr Reddy's Labs Ltd	2012	0	0	1	0	1	
Zydus Cadila	2012	0	0	1	0	1	
Ranbaxy Ltd	2012	0	0	1	0	1	
Wockardt Ltd	2012	0	0	1	0	1	
Aurobindo Pharma	2012	0	0	1	0	1	
Sun Pharma	2012	0	0	1	0	1	
Engineering Sector							
Essar Steel Ltd	2012	0	0	1	0	1	
Tata Motors Ltd	2013	0	0	1	0	1	
Tata Steel	2013	0	0	1	0	1	
Bajaj Auto Ltd	2013	0	0	1	0	1	
Crompton Greaves Ltd	2012	0	0	1	0	1	
Sterlite Group	2013	0	0	1	0	1	
Sesa Goa Ltd	2013	0	0	1	0	1	
Hero MotoCorp	2013	0	0	1	0	1	
Hindalco Ltd	2013	0	0	1	0	1	
FMCG Sector							
Britannia Inds Ltd	2012	0	0	1	0	1	
Marico Inds Ltd	2012	0	0	1	0	1	
Textile Sector							
Bombay Dyeing	2013	0	1	0	0	1	
Century Enka Ltd	2012	0	1	0	0	1	
Arvind Ltd	2012	0	0	1	0	1	1
Raymond Ltd	2012	0	0	1	0	1	
Energy sector							
Reliance Inds Ltd	2013	1	0	0	0	1	
Bharat Petro Corp Ltd	2013	0	1	0	0	1	
Indian Oil Corp Ltd	2013	0	1	0	0	1	
NTPC	2013	0	0	0	1	0	
Power Grid Corp Ltd	2013	0	0	0	1	0	
National Hydro Power Ltd	2013	0	0	0	1	0	
Gas Authority of India Ltd	2013	0	0	0	1	0	