FINANCIAL DERIVATIVES USE IN TOP CORPORATE ENTITIES IN INDIA – A TREND ANALYSIS

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Abstract *- Risk is one of the essential elements of modern business and economic variable and maintains a positive correlation with profitability and performance. In the proposed work, it has been planned to search the answer to some important questions like attitude of commercial entities to use derivative advantageously as one of the effective alternative for risk management and the scope of these derivatives instruments in this regard. The study shows that there is a significant increase in the propensity to use financial derivatives in regard to top performing companies of India.*

Key Words: Derivative, Risk Management, Indian Companies, Index

REVIEW OF LITERATURE:

Researchers during the past two decades have endeavoured to explore the purpose of risk management.

Fok et al. (1997)[1] have reported that although the primary purpose of hedging is to reduce earnings volatility, it may also increase firm value. Their study shows that hedging reduces the probability of financial distress, the agency costs of debt, and the costs of equity. In addition, they suggested that corporate ownership structure might affect the desirability of hedging. They also found that large firms had a stronger tendency to hedge, firms with a larger percentage of value derived from growth opportunities were more likely to hedge, and convertible debt served as a substitute for corporate hedging.

Joseph (2000)[2] has studied the relationship between the use of hedging techniques and the characteristics of UK multinational enterprises. The study indicates that firms are not very receptive to the newer and more complex types of derivatives.

Oosterhof (2001) has suggested that corporate risk management and hedging are important activities within financial as well as non-financial corporations.
The study concluded that the major determinant of derivatives' use is firm size. The mixed results indicate that corporate risk managers, willingly or unwillingly, do not behave in an optimal way. Fatemi and Luft (2002) established that risk management strategies should be pursued to enhance shareholder value. The empirical evidence cited was supportive of the notion that the strongest motive for risk management behavior was the avoidance of financial distress.

Belk (2002) studied the organization of foreign exchange risk management among the multinational corporations in the UK, the US and Germany. He concluded that companies were generally risk-averse and the goals of currency risk management were not clearly formulated.

Bodnar et al. (2003)[3] examined the influence of institutional differences on corporate risk management practices in the US and the Netherlands. Their study shows that institutional differences appear to have an important impact on risk management practices and derivatives use across US firms and Dutch firms.

Pramborg (2005)[4] compared the hedging practices of Swedish and Korean non-financial firms. The findings suggested that the objective of hedging differed among firms in the two countries. Korean firms mostly focused on reducing fluctuations in cash flows, while Swedish firms more commonly emphasized reducing fluctuations of accounting numbers. Saito and Schiozer (2005) presented evidence on derivatives usage by Brazilian non-financial firms, using a sample of 74 companies.

[1] Fok, C., Carolyn, C., and Ming, C. (1997). Determinants of Corporate Hedging and Derivatives: A Revisit, Journal of Economics and Business, 49, 569-585.

[2] Joseph Mariathasan, (2000),"The use of derivatives by insurance companies", Balance Sheet, Vol. 8 Iss 1 pp. 29 – 32.Permanent link to this document: http://dx.doi.org/10.1108/09657960010338454

[3] Bodnar, Gordon M. and de Jong, Abe and Macrae, Victor, The Impact of Institutional Differences on Derivatives Usage: A Comparative Study of US and Dutch Firms. European Financial Management, Vol. 9, pp. 271-297, September 2003. Available at SSRN: http://ssrn.com/abstract=423630

[4] Pramborg (2005); Foreign exchange risk management by Swedish and Korean nonfinancial firms: A comparative survey; Pacific-Basin Finance Journal, Volume 13, Issue 3, Pages 343-366

RESEARCH GAP:

The review observes a serious gap in the area of risk management practices by use of derivative practices of Indian firms, hence calls for further research in the area. Liberalization and globalization of the Indian economy resulting in industrial growth, liberalization of trade regulations and emergence of new risk management techniques in corporate finance have provided new opportunities for managing risks. An empirical research is expected to provide insight into the practices and behaviour of the corporate enterprises in India. The study related to the risk management practices assumes greater significance now than ever before, because of various global phenomenon during the preceding one decade when not only India but the whole world has undergone substantial and first changing volatilities in every sphere including economic, social, regional, security and political issues.

The literature survey confirms that the existing studies in the area of risk management practices have not covered important aspects like "Risks(Concerns) and side effects of the use of risk management tools such as financial derivatives in India and an exploratory and comparative analysis of the approach and attitude of risk management through derivatives between public (Govt.) and private Indian Inc. Another important aspect proposed to be covered is the cost benefit analysis of the use of derivatives."

STATEMENT OF PROBLEM

The main research problems for the study are:

1. What is the degree and extent of use of derivatives by Indian companies for risk management purposes?

RESEARCH OBJECTIVES

The main objective of the study is to explore facts in the following regards:

1. Which derivatives are used, and which type of exposure they are used for?;
2. Degree and extent of use of financial derivatives;
3. Factors of concern in derivatives usage

RESEARCH HYPOTHESIS:

The following Hypothesis are framed after careful study of the related literature:

H_{01}: There is a significant increase in use of financial derivatives for risk management purpose by Indian corporates.

SIGNIFICANCE OF THE STUDY:

The available literature consists of examples of corporate practices of firms from western countries in relation to risk management using various engineered instruments (Derivatives). There is not much study of the overall approach and strategy of risk management that is being implemented by the managers of the firms in India through derivatives. On this back drop, it has been planned to give a sincere effort to unearth and divulge new facts on various and diversified aspects of use of derivatives as stated in the research objectives.

RESEARCH METHODOLOGY:

Though the topic has become popular now-a-days, still there are many areas which have remained uncovered in the Indian context and requires further investigations e.g.Indian corporate hedging pattern through risk management, concerns and side effects of risk management through derivatives, risk management through exotic derivatives, difference in perception risk and their square up by suitable hedging through appropriate derivative instruments of public(Govt) and private sector companies. Therefore, to explore new vistas in the field of use of derivatives, a descriptive and exploratory study is undertaken on 100 small and large companies including companies taken from SENSEX-30 or NIFTY-50 indices for consideration.

- **SOURCES AND METHODS OFDATACOLLECTION**

Primarily, secondary data is used for the research work. Secondary data are collected from annual reports, articles of financial research journals, reference books on derivatives, business magazines, daily business/ financial newspapers, internet etc.

- **STATISTICAL TOOL:**

The study has been conducted over a period of 5 years, i.e from the year 2011 to 2015. Data has been collected from various sources will be analysed with the help of statistical software like SPSS, EXCEL SPREAD SHEETS etc .and statistical tools. Tables, charts, and graphs have been used to present the required data. Statistical tools like percentage, average, standard deviation, t-test, chi-square test, ANOVA are used for analysis of data.

DATA ANALYSIS:

It has been tried to decipher the trend of derivative use in Indian context starting with the analysing the previous literature analysis and followed by classification of companies into various industries and

thereafter analysing classified industry data to get an insight into the pattern of derivative in different major sectors of the economy.

Table-1

Empirical Evidence of Use of Derivatives

Study	Country	Year	Sample Size	No. of Responses	Response Rate	% of Users
Block and Gallagher	USA	1986	500	193	38.6 %	20
Dolde	USA	1993	500	244	48.8	85
Bodner et al	USA	1994	2000	530	26.5	35
Bodner et al	USA	1995	2000	350	17.5	41
Bodner et al	USA	1998	1928	339	20.7	50
Phillips	USA	1995	3480	657	18.9	63.2
Grant and Marshall	UK	1995	500	146	29.2	90.2
Alkebach andHageli n	Sweden	1996	213	163	76.5	51.5
Jalilvand et al	Canada	1996	548	154	28.1	75
Berkman et al	New Zealand	1997	124	79	63.7	53.1
Bodnar and Gebhardt	Germany	1997	368	126	34.2	77.8
Khim and Liang	Singapore	1997	1000	260	26.0	35.4
Fatemi and Glaum	Germany	1998	153	71	46.4	88
Ceuster et al	Belgium	1997	334	73	21.9	65
Lee et al	UK, US, Asia-Pacific	1998	600	179	39.5	29.83
Benson and Oliver	Australia	2000	429	100	23.3	76
Mallin et al.	UK	2001	800	495	63.59	62.1
El-Masry	UK	2003	401	173	43.14	67
Anand and Kaushik	India	2008	640	55	8.6	83.6
Paligorova and Staskow	Canada	2014	1522	N.A	N.A	33
Present Study	India	2015	433	N.A	N.A	68.53

Table-2

Global Usage of Derivatives

Country	% of Users
United Kingdom	92.70
Germany	88.00
Australia	76.00
Canada	75.00
Belgium	65.80
India	61.20
New Zealand	53.00
United States of America	50.00

Table-3

Industry Classification of Sampled Firms on the basis of year 2014-15

Sector	No. of Firms	% of Sample	No. of Users	% of Users
Automobiles & Auto Components	31	7.16*	22	70.97#
Conglomerate	13	3.00	10	76.92
Consumer Durables	17	3.93	13	76.47
Energy, Power & Equipment	44	10.16	27	61.36
Fast Moving Consumer Goods	46	10.62	33	71.74
Fertilizers & Agricultural Chemicals	15	3.46	10	66.67
Health, Pharmaceuticals & Biotechnology	25	5.77	14	56.00
Industrials & Engineering	69	15.94	41	59.42
Information Technology	26	6.00	20	76.92
Infra, Real Estate& Construction Materials	53	12.24	23	43.40
Leisure and Entertainment	11	2.54	6	54.55
Metals & Mining	23	5.31	13	56.52
Telecom Services	9	2.08	5	55.56
Textiles, Apparels & Jewelleries	33	7.62	23	69.70
Transport Services	18	4.16	5	27.78
Sample	**433**	**100**	**265**	**61.20**

The above table shows the classified industry analysis with regard to degree and pattern of derivative use and it is very evident from the table that information technology, conglomerate and consumer durables are the sectors which are the industry leaders in terms of proportion of derivative users in the sampled companies belonging to that sector. Similarly, transport sector is the least user of derivative instruments for risk management purpose.

Table-4

Proportion of Use of Derivatives—by Size

Sales Group*	Number (% of Total)	Users (% of Number)	Non-users (% of Number)
More than ₹500 billion	22 (5.08 %)	19 (86.36 %)	3 (13.64 %)
₹400 - ₹500 billion	4 (0.92 %)	3 (75.00 %)	1 (25.00 %)
₹300 - ₹400 billion	12 (2.77 %)	9 (58.33 %)	3 (41.67 %)
₹200 - ₹300 billion	14 (3.23 %)	10 (71.43 %)	4 (28.57 %)
₹100 - ₹200 billion	41 (9.47 %)	28 (68.29 %)	13 (31.71 %)
₹50 - ₹100 billion	76 (17.55 %)	51 (67.11 %)	25 ((32.89 %)
₹40- ₹50 billion	32 (7.39 %)	23 (71.88 %)	9 (28.12 %)
₹30- ₹40 billion	52 (12.01 %)	30 (57.69 %)	22 (42.31 %)
₹20- ₹30 billion	98 (22.63 %)	55 (56.12 %)	43 (43.88 %)
₹10- ₹20 billion	74 (17.09 %)	36 (48.65 %)	38 (51.35 %)
Less than ₹10 billion	8 (1.85 %)	1 (12.5 %)	7 (87.50 %)

***Grouping has been made on the basis of sales of the year 2014-15**

The findings on the basis of classifying the companies into different classes of size in terms of the sales revenue of the period 2015-16, it is very clear that the large sized companies are more aggressive in terms of hedging through derivatives in comparison to their smaller counterpart. The data analysis in table-4shows that large sized companies in the sale group of ₹500 billion are highest percentage (86.36%) of derivative users whereas it is lowest in small sized companies.

Table-5

Year-end Exposure (Risk-wise)

Year		Total	Currency	Interest Rate	Commodity
2014-15	No. of Users	265	226	90	19
	Year-end Exposure (`in Cr.)	638957.89	469872.8146	154732.6353	14352.43676
	% of Total Exposure	100%	73.54 %	24.22%	2.25%
2013-14	No. of Users	252	217	90	16
	Year-end Exposure (`in Cr.)	540173.74	395010.631	132002.8671	13160.23756
	% of Total Exposure	100%	73.13 %	24.44%	2.44%
2012-13	No. of Users	247	206	85	15
	Year-end Exposure (`in Cr.)	512445.39	375278.721	125169.1524	11997.51831
	% of Total Exposure	100%	73.23 %	24.43%	2.34%
2011-12	No. of Users	244	201	81	13
	Year-end Exposure (`in Cr.)	499832.43	370010.118	119582.7349	10239.57824
	% of Total Exposure	100%	74.03 %	23.92%	2.05%
2010-11	No. of Users	231	195	80	13
	Year-end Exposure (`in Cr.)	467159.58	355253.863	102525.8671	9379.84724
	% of Total Exposure	100%	76.05 %	21.95%	2.01%
Average Growth in Amount of Derivative Use		8.30%	7.44%	10.90%	11.2%

The table-5shows the incremental growth in the rate of use of derivatives over a period of five years from 2010-11 to 2014-15, where it is clearly evident that there is significant average annual growth in the in all variety of financial instruments taken in the study.

Table-6

Industry breakdown of currency, interest rate, and commodity derivatives use-2014-15

Industry		Currency		Interest Rate		Commodity	
	Total Sample	*No. of Users*	*Year End Open Interest (₹)*	*No. of Users*	*Year End Open Interest (₹)*	*No. of Users*	*Year End Open Interest (₹)*
Automobiles	31	20	26354.00	5	2919.90	1	67.90
Conglomerate	13	10	33635.20	4	1751.10	0	0.00
Consumer Durables	17	11	1041.10	3	389.90	1	116.20
Energy	44	23	149946.4	11	108349.7	8	11792.70
FMCG	46	28	27382.30	11	8803.70	3	774.30
Fertilizers	15	10	8872.80	6	1273.40	0	0.00
Health & Pharma	25	11	16139.92	6	2498.13	0	0.00
Industrials	69	36	45380.60	16	5629.80	2	472.20

IT	26	20	10389 5.2	1	934. 09	0	0.00
Infra	53	12	5424.8 0	11	105 66.6 0	2	365.90
Entertain ment	11	5	1294.7 0	3	232 0.90	0	0.00
Metals	23	11	26628. 90	3	210 0.30	2	762.90
Telecom	9	4	5315.0 0	4	547 7.96	0	0.00
Textiles	33	21	15301. 50	4	143 9.10	0	0.00
Transpor t	18	4	3259.7 0	2	277. 60	0	0.00
Total	**433**	**226**	**46987 2.1**	**90**	**154 732. 1**	**19**	**14352 .10**

HYPOTHESIS TESTING

On the basis of collected from the annual reports, it has been empirically tested to identify whether there is substantial and significant positive change in the use of financial derivatives. For that, independent sample t-test has been used to contrast between the first year (2010-11) and last year (2014-15) of the sampling period. The test results given as follows:

H_{a1}: There is significant increase in use of financial derivatives over the sampling period.

Table-7

T-test for Equality of Means

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Derivatives Values	Equal variances	12.267	.000	2.660	864	.003
	Equal variances not assumed			2.660	641.868	.001

Before applying the t-test, it has to be made sure of the fact that whether the sample variances are equal or not. The result of t-test shows that there is a significant incremental difference (at α=5%) between the means of outstanding amount of derivatives for the sample year 2014-15 and 2010-11. The t-test provides substantial evidence about the fact that degree of usage of financial derivatives has increased over the years which is consistent with our research hypotheses (H_{a1}).

CONCLUSION

After liberalisation, Indian economy is now open for the world class competition. It forced the Indian corporate sector not only compete with the foreign competitors but also to adapt and enforce state of the art financial management concepts to be more competitive. In this back drop, financial derivative is an innovative financial instrument used to deal with an array of business risk. Our research is to know; how Indian firms are embracing the derivative use in risk management purposes. The result is quite encouraging. It happens to be the fact that there is a statistically significant increase in the use of derivatives over a period of five years and a substantial proportion of companies are using financial derivatives for risk management purposes. In the coming years, India will be one of the prominent derivative transaction destination of the world.

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