Revisiting Myths Associated With Derivatives : An Empirical Study

** Namrata Sandhu*
*** Sahil Singh Sandhu*

INTRODUCTION

Since the advent of organized trading in financial derivatives, myths associated with them have been rampant. Reports of organizational failures and massive losses suffered by institutional and individual investors on account of an unwise investment in them have perpetuated some unfounded and baseless myths about them (Williams, 2009), which though untrue, are extremely popular. Past studies on myths associated with derivatives have shown that they are wrongfully believed to be very high risk (Bernstein, 1996; Trehan et al., 2004) and complex instruments (Hague, 1996), posing a threat to financial systems the world over (Partnoy, 2003). It is further believed that their use encourages fraudulent practices (Davies, 2010), which can have unexpected and devastating consequences (Hague, 1996). They have also been accused of enhancing speculation in financial markets (Siems, 1997). In fact, it has been opined that the job of a derivatives trader is *"to take bets on people taking bets"* (Davies, 2009). Not only this, but also the financial experts believe that financial derivatives are *"time bombs both for the parties that deal in them and the economic system. They are financial weapons of mass destruction, carrying dangers that are potentially lethal."* (Buffet, 2003). The derivatives market is further believed to be *"the biggest, most potentially lucrative and destructive market in the world, which at some time in the future, could bring the world's financial system to its knees. "* (Hodge, 1990).

Investors in the past have also questioned the soundness of the legal structure (Sumi, 2011) and the regulatory framework surrounding derivatives (Williams, 2009). They have erroneously attributed all the problems associated with derivatives to lack of regulations, which guard against their misuse.[1]

Although there exists no consensus about them, the misconceptions regarding derivatives that we come across in the past studies are grave and have aroused concern among researchers (Siems, 1994; Trehan et al., 2004), who for a long time believed that many forthcoming financial derivatives were in the making on account of them (Hodge, 1990; Buffet, 2003). But now that all these fears about derivatives have proved unjustified (Siems, 1997), and Indian investors have become familiar with them, it is time to check whether misconceptions about them are still prevalent among investors.

OBJECTIVES OF THE STUDY

Literature on financial derivatives is replete with myths associated with them. The current study attempts to examine whether they are still prevalent amongst investors in India, even though over a decade has passed since organized trading in financial derivatives was first introduced in India.

METHODOLOGY

❁ Questionnaire Development and Data Collection : Since the aim of the current study is to assess the perceptions of the investors regarding the popular myths associated with derivatives trading; a survey was considered with the suitable data collection technique. It is a technique in which data is collected from the respondents with the help of a questionnaire (Zikmund, 1994). The questionnaire that was constructed contained 17 popular myths associated with derivatives. These myths were selected after a careful review of the existing literature. Responses regarding these myths were anchored on a 5-point Likert scale , with 1 indicating a *'strong disagreement'* and 5 indicating a *'strong agreement'* with the statement. Annexure 1 enlists these 17 myths. Apart from these statements, the questionnaire also contained questions on the profile of the respondents. After a questionnaire was developed, a pilot study was

* *Ph.D. Student,* Guru Nanak Dev University, Amritsar, Punjab. E-mail : sandhunamrata@gmail.com
** *CFA Level II Candidate and Software Engineer,* Cisco Systems India Private Limited, Bangalore.
E-mail : sahil.singh.sandhu@gmail.com

conducted on respondents conveniently selected from the relevant population. This was done with an aim to ensure that the statements used in the questionnaire were generally understandable and appropriate. Following the pilot study, Cronbach's Alpha was calculated for the questionnaires administered. Its value worked out to .726, which is over the recommended level of .70 (Bernardi, 1994; Klassen, 2003). This established the reliability of the questionnaire.

Table1: Reliability Of The Questionnaire (Pilot Test)

Cronbach's Alpha	Number of Items
.726	17

For the purpose of data collection, 200 questionnaires were conveniently administered in the state of Punjab in India during the months of December 2010 and January 2011. In order to ensure rational responses, only investors (people who had invested some money in the financial markets) were approached for getting the questionnaire filled. At the end of the survey, however, only 177 usable questionnaires were obtained.

❁**Respondent Profile :** Table 2 shows the profile of 177 investors who were approached for the purpose of data collection. As can be seen from the Table 2, 71.19 percent of the respondents were male and 28.81 percent of the respondents were female. As far as the age of the respondents was concerned, 5.08 percent respondents were younger than 20 years, 48.59 percent respondents were between 20 and 35 years, 26.55 percent of the respondents were in the age group of 35 to 50 years, 18.08 percent of the respondents were in the age group of 50 to 60 years, and 1.69 percent of the respondents were older than 60 years. Further, 34.46 percent of the respondents were single and 65.57 percent of the respondents were married. Lastly, 50.28 percent of the respondents had invested less than ₹ 50,000, 43.50 percent of the respondents had invested between ₹ 50,000 and ₹ 2,00,000, 5.08 percent of the respondents had invested between ₹ 2,00,000 and ₹ 5,00,000 and only 1.13 percent of the respondents had invested over ₹ 5,00,000 in the financial markets.

Table 2: Profile Of The Respondents

Variable	Categories of variable	Frequency	Percentage
Gender	Male	126	71.19
	Female	51	28.81
Age	Less than 20 years	09	5.08
	20 - 35 years	86	48.59
	35 - 50 years	47	26.55
	50 - 60 years	32	18.08
	Older than 60 years	03	1.69
Marital Status	Single	61	34.46
	Married	116	65.57
Amount of money invested in financial markets	Less than ₹ 50,000	89	50.28
	Between ₹ 50,000 and ₹ 2,00,000	77	43.50
	Between ₹ 2,00,000 and ₹ 5,00,000	09	5.08
	Greater than ₹ 500, 000	2	1.13

❁**Data Analysis Technique :** The data reduction technique of factor analysis was used to analyze the perceptions of the respondents regarding the myths associated with derivatives. The extraction method used was Principal Component Analysis, which was followed by Varimax with Kaiser Normalization (Malhotra, 2007).

DATA ANALYSIS AND DISCUSSION

Before subjecting the data to analysis, its reliability was verified by using Cronbach's coefficient Alpha. Its value was found to be .717. This clearly indicates the reliability of the constructs (refer to Table 3) (Bernardi, 1994; Klassen, 2003).After establishing the reliability of the data, it was reduced by applying factor analysis. The results of factor

analysis are represented in the Table 4.

Table 3: Reliability Of The Questionnaire	
Cronbach's Alpha	**Number of Items**
.717	17

Table 4: Myths Associated with Derivatives: Factor Analysis				
Factor Number and Name	**Eigen Value of Factor**	**Scale Items**		
		Item Number	**Item Name**	**Loading**
Factor I				
Myths associated with risks	5.516	S15	Very high risks are associated with investment in derivatives.	.755
		S13	New and unknown risks are associated with derivatives.	.726
		S16	Investment in existing capital market is safer than investment in derivatives.	.615
		S4	Derivatives are lethal financial weapons.	.551
		S17	Derivatives are the latest risk management fads.	.540
		S11	Derivatives magnify risks.	.528
Factor II				
Myths associated with regulatory mechanism	1.338	S9	Regulatory environment surrounding derivatives trading in India is unsound.	.672
		S14	Prerequisites for effective trading in derivatives are missing in India.	.660
		S12	The Indian market is not ready for derivatives trading.	.654
		S10	Tighter regulations should be introduced in the derivatives market.	.600
Factor III				
Myths associated with suitability	1.083	S6	Derivatives are not appropriate for small investors.	.711
		S5	Derivatives siphon money out of the organization followed by no inflow.	.663
		S7	Only the investors seeking risk should invest in derivatives.	.618
Factor IV				
Myths associated with complexity	1.060			
		S2	Indian investors will have difficulty in understanding the way derivatives work.	.828
		S1	Derivatives are complex instruments.	.800
Factor V				
Myths associated with purpose	1.019	S3	Derivatives are a fancy name for gambling.	.747
		S8	Derivatives are solely speculative tools.	.728

A five-factor solution emerged after the factor analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy was .873 (refer to Annexure 2 (a)) and had a total variance of nearly 59 percent (refer to Annexure 2 (b)). These statistics establish the appropriateness of the technique (Malhotra, 2007). The five factors which emerged along with the variables loaded on them are shown in the Table 4.

FACTOR I: MYTHS ASSOCIATED WITH RISKS

❁ **The Myth :** This is the most important factor which has emerged out of the analysis. It has six variables loaded on it, which show the apprehensions of the respondents regarding the risks associated with derivatives. As is evident from the Table 4, the respondents believe that derivatives are very risky financial instruments, which magnify risks. They further believe that it is safer to invest in the existing capital market than in derivatives.

❁ **The Reality:** Derivatives are cheap and efficient risk management devices, which enable organizations to

considerably reduce specific risks (Bishop, 1996). They must, for that reason, be made a part of every firm's risk management strategy. Past research has shown that the risks involved with investment in derivatives are much less than those associated with investment in traditional financial instruments. There are three reasons for it: one can do without buying the underlying asset, can get involved with them for a much smaller initial outlay and the payoff time frame is much smaller (Sayush, 2011). However, before one embarks on any type of an investment in them, a careful understanding of their structure and function is mandatory. In the past, *"staggering losses in derivatives have been reported because of lack of familiarity regarding their right usage"* (Davies, 2010). These losses have in turn propagated some unfounded and unsubstantiated fears about them, which have discouraged investment in them. The reality, contrary to these fears is that *"financial derivatives have created new ways to understand, measure, and manage risks"* (Siems, 1997), which can help organizations to pursue value enhancing investment prospects.

FACTOR II: MYTHS ASSOCIATED WITH THE REGULATORY ENVIRONMENT

❁ **The Myth :** The second factor that has emerged out of the data establishes the myths associated with the regulatory environment. It has four variables loaded on it, which shows the lack of faith that the respondents have in the regulatory mechanism surrounding derivatives in India.

❁ **The Reality:** Massive losses suffered due to unwise investments in derivatives have caused people to question the soundness of the regulatory framework of derivatives. Furthermore, the widespread rumors and myths about them have led to the avocation of tighter regulations and controls. The reality, however, is that the regulations surrounding derivatives are moving in the right direction (Sumi, 2011), and it is not on account of them that investors have suffered losses. Losses are a result of their misuse and an incomplete understanding of the way they function and transfer risks. Research has also shown that the regulatory framework of derivatives trading in India is consistent with international standards and addresses all common apprehensions like investor protection, financial integrity, market integrity, market efficiency, etc. (Saksena, 2003). All prerequisites for derivatives trading are thus in place in India (The Hindu, 2000), and the Indian markets are ready to embrace them.

FACTOR III: MYTHS ASSOCIATED WITH SUITABILITY

❁ **The Myth :** The third factor that emerged out of the analysis shows the misconceptions of the respondents regarding the suitability of financial derivatives. They believe that investment in derivatives is unsuitable for small risk-averse investors. Further, they also believe that only the organizations which can bear massive outflows of money followed by no inflows should invest in derivatives.

❁ **The Reality:** Investment in derivatives is appropriate for all investors, irrespective of whether they are small or big. Therefore, the argument that they are only suitable for large organizations is a myth, which probably has its origin in the fact that only big investors generally invest in derivatives. The truth is that any investor who intricately understands the involved risk-return trade off and uses them prudently can benefit from investment in derivatives.

Further, the belief that derivatives are appropriate for only risk-savvy investors is also a misconception because derivatives are financial tools, which help investors to hedge risks rather than magnify them. Any exposure to or enhancement of risk on account of them is due to their deliberate or inadvertent misuse. Lastly, this factor also establishes that the respondents consider an investment in derivatives suitable only for those organizations which can tolerate huge outflows of money not followed by proportionate inflows. The reality, however, is that cash management in organizations can be considerably improved if planning regarding the specific risks which need to be hedged and those which need to left unhedged is accurately undertaken (The Hindu, 2000). This can go a long way in reducing uncertainty regarding not only the timing of cash inflows, but also the amount. Far from the popular opinion that derivatives siphon money out of organizations followed by no inflows, they are actually a *"tool of mass wealth creation out of nothing"* (Wiriaatmadja, 2010).

FACTOR IV: MYTHS ASSOCIATED WITH COMPLEXITY

❁ **The Myth :** The fourth factor which emerged from the analysis establishes the popular myths associated with complexity of derivatives. The respondents believe that they are complex financial instruments, and the Indian

investors will have difficulty in understanding their function.

❁ **The Reality:** The reality, however, is that though the word *derivative* evokes in our mind an image of complexity and mystery; these financial products are actually extremely simple and straightforward (Bishop, 1996). They have been around for centuries; the 12th century to be precise (Davies, 2010) and if understood properly, their function is simple and extremely beneficial for investors looking to block specific risks.

FACTOR V: MYTHS ASSOCIATED WITH PURPOSE

❁ **The Myth :** The last factor which has emerged out of the analysis highlights the myths amongst the respondents regarding the purpose of derivatives. In their opinion, derivatives are just a fancy name for gambling.

❁ **The Reality :** Financial derivatives are risk reduction devices, although, organizations and investors today are misusing them to deliberately seek specific risks by assuming particular positions in expectation of anticipated market movements. They were originally not designed for speculation or betting on the direction of market movements.

CONCLUSION

To conclude, it can be said that misconceptions about derivatives are rampant among Indian investors who consider them high-risk and complex financial instruments not suitable for Indian markets. They further believe that only risk savvy and big investors can benefit from investment in them. They also perceive them as tools designed for making profits by speculating on market movements. Last, but not the least, they consider the legal and regulatory framework of derivatives as deficient and in need of substantial tightening.

IMPLICATIONS

The current study has revealed that gross misconceptions are prevalent among Indian investors regarding derivatives. These could have significantly contributed towards holding back derivatives trading in India.

Past data on derivatives trading in India has divulged that although derivatives trading in India has accelerated in the last decade, and particularly in the year 2010, much is still desired (Subramanyam, 2011). This becomes especially conspicuous when the Indian volumes of derivatives trading are compared with the volumes of derivatives trading in developed countries (Leipzig, 2011; 2). Also, a large proportion of investment in derivatives in India is done by foreign investors (Subramanyam, 2011) as against Indian investors who have shown an extreme reluctance in investing in derivatives. Once again, this reluctance could be on account of a flawed comprehension of derivatives instruments.

It is ,therefore, suggested that these myths should be effectively dispelled and investors should be educated regarding the true purpose of derivatives. Not only will this ensure that derivatives are invested in and understood in the spirit in which they were originally designed, but also improve their volume of trading.

NOTES

[1.] As cited in the U.S. General Accounting Office report entitled "Financial Derivatives: Actions Needed to Protect the Financial System" released in 1994. The report was based on a two year study conducted in USA.

2. Conclusion based on data provided by World Federation of Exchanges in a report entitled "New acceleration in exchange traded derivatives trading volumes in 2010." The report was published on March 7, 2011.

REFERENCES

1) Bernardi, R. A. (1994). "Validating Research Results when Cronbach's Alpha is below .70: A Methodological Procedure". *Educational and Psychological Measurement*, Volume 54, Issue 3, pp. 766-775.

2) Bernstein, Peter L. (1996). *'Against the Gods: the Remarkable Story of Risk'*. Chichester: Wiley.

3) Bishop, Matthew (1996). "A Brief History of Derivatives". *The Economist*, Volume 338, Issue 7952, pp. S6-S9. Retrieved December 12, 2010 from the Proquest database.

4) Buffet, Warren (2003). "What Worries Warren: Avoiding a 'Mega-catastrophe'". *Fortune*, March 3, 2003.

5) Davies, Linda (2009). '*Into the Fire'*. Harper Collins, USA.

6) Davies, Roy (2010). "Gambling on Derivatives: Hedging Risk or Courting Disaster?", viewed on January 3, 2011, http://projects.exeter.ac.uk/RDavies/arian/scandals/derivatives.html

7) Hague, Kenneth G. (1996). "Derivatives: Bridge to the Capital Markets". *Canadian Underwriter*, Volume 63, Issue 4, pp. 30-34.

8) Hodge, Julian (1990). *'In A 1990 Memo To Senior Executives Of His Bank'*, viewed on January 3, 2011 http://en.articlesgratuits.com/economic-meltdown-who-is-to-blame-id4493.php

9) Klassen, P.T. (2003). *"New TTI Instrument Reliability Studies"*, viewed on January 3, 2011 http://glsworld.com/assessment-center/certification-validity/pdf/behavioral/disc-piav-validity-study-summary-tti-2003.pdf

10) Leipzig (2011). *"EEX Trading Volume Increased Considerably in 2010"*, viewed on March 10, 2011 http://www.commodities-now.com/news/power-and-energy/4591-eex-trading-volume-increased-considerably-in-2010.html

11) Malhotra, Naresh (2007). *'Factor Analysis. In: Fundamentals of Marketing Research'*. Sage Publications, pp. 586-607.

12) Partnoy, Frank (2003). *'Infectious Greed: How Deceit and Risk Corrupted the Financial Markets'*, Holt/Times.

13) Saksena, Sashank (2003). *"Legal Aspects of Derivatives Trading in India"*, viewed on March 10, 2011 http://isidev.nic.in/jrnls/j169.html

14) The Hindu (2000). "Myths behind Derivatives", viewed on January 3, 2011 http://www.hinduonnet.com/businessline/iw/2000/06/11/stories/0811h017.htm

15) Trehan, Ruchi, Kaur, Harpreet and Kaur, Amardeep (2004). *"Derivatives Market in India"*, paper presented at National Seminar on Capital Market Reforms in India, Guru Nanak Dev University, Amritsar, India on March 1-2, 2004.

16) Sayush (2011). *"Three Reasons to Start Derivatives Trading"*, viewed on January 3, 2011 http://www.streetdirectory.com/travel_guide/36505/investment/three_reasons_to_start_derivatives_trading.html

17) Siems, T. F. (1997). *"10 Myths about Financial Derivatives"*, viewed on January 3, 2011 http://www.cato.org/pubs/pas/pa-283.html

18) Subramanyam K. (2011). As cited in an interview given to The Hindu, January 5, 2011.

19) Sumi, Chikahasi (2011). *"Regulatory Roadmap"*, AsiaRisk, p. 52-54. Retrieved February 18, 2011 from the Proquest database.

20) Williams, J. L. (2009). *"Economic Meltdown- Who is to Blame?"*, viewed on December 12, 2010 http://en.articlesgratuits.com/economic-meltdown-who-is-to-blame-id4493.php

21) Wiriaatmadja, Elisheva (2010). *"Derivatives are Financial Weapons of Mass Destruction!"*, viewed on December 12, 2010 http://www.myloansconsolidated.com/2010/08/25/derivatives-are-financial-weapons-of-mass-destruction/

22) Zikmund, G. W. (1994). *'Business Research Methods'*. Harcourt Inc.

ANNEXURES

Annexure 1: Statements Used in the Questionnaire	
1.	Derivatives are complex instruments.
2.	Indian investors will have difficulty in understanding the way derivatives work.
3.	Derivatives are a fancy name for gambling.
4.	Derivatives are lethal financial weapons.
5.	Derivatives siphon money out of the organization followed by no inflow.
6.	Derivatives are not appropriate for small companies.
7.	Only the investors seeking risk should invest in derivatives.
8.	Derivatives are solely speculative tools.
9.	Regulatory environment surrounding derivatives trading in India is unsound.
10.	Tighter regulations should be introduced in the derivatives market.
11.	Derivatives magnify risks.
12.	The Indian market is not ready for derivatives trading.
13.	New and unknown risks are associated with derivatives.
14.	Prerequisites for effective trading in derivatives are missing in India.
15.	Very high risks are associated with investment in derivatives.
16.	Investment in existing capital market is safer than investment in derivatives.
17.	Derivatives are the latest risk management fads.

Annexure 2(a): KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.873
Bartlett's Test of Sphericity	Approx. Chi-Square	950.249
	Df	136
	Sig.	.000

Annexure 2(b): Rotated Component Matrix					
Variables	**Components**				
	1	**2**	**3**	**4**	**5**
S1	.126	.164	.155	**.800**	.007
S2	.135	.097	.011	**.828**	.090
S3	.092	.170	-.036	.248	**.747**
S4	**.551**	.065	.399	.231	.104
S5	.425	.083	**.663**	-.001	.074
S6	-.003	.395	**.711**	.019	.015
S7	.247	.070	**.618**	.185	.197
S8	.128	.044	.259	-.115	**.728**
S9	.181	**.672**	.316	.017	.136
S10	.381	**.600**	.320	.030	.127
S11	**.528**	.245	.112	-.014	.253
S12	.158	**.654**	.179	.222	.087
S13	**.726**	.335	-.011	.004	.250
S14	.250	**.660**	-.087	.130	.028
S15	**.755**	.182	.089	.107	.131
S16	**.615**	.234	.186	.127	-.093
S17	**.540**	.069	.281	.187	-.050
Eigen Values	5.516	1.338	1.083	1.060	1.019
Cumulative Variance	32.450	40.322	46.690	52.927	58.919
Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization					