

Growth & Future of Derivatives in India: A Study

Shiv Singh Sarangdevot , and Yuvraj Singh Rathore

Abstract— Financial market's endeavour has always been to maximize returns and minimize risk. Derivatives are among the forefront of the innovations in the financial markets and aim to increase returns and reduce risk. They provide an outlet for investors to protect themselves from the vagaries of the financial markets. In this paper portfolio of various clients of IL&FS INVESTSMART LIMITED has been analysed, which clearly depicted that even till today there are only few investors who are not willing to invest in derivative market as it carries an element of risk and uncertainty with it. Also in this paper a study of investment pattern of general public among derivatives has been done. The major objective of the study is to analyse the performance of Derivatives Trading in India since 2001 with special reference to Futures & Option.

Keywords— Financial Market, Derivatives, Portfolio

I. INTRODUCTION

THE emergence of the market for derivative products, most notably forwards, futures and options, can be traced back to the willingness of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuations in asset prices. Through the use of derivative products, it is possible to partially or fully transfer price risks by locking-in asset prices. A derivative is financial instrument whose value is 'derived' from another underlying security or a basket of securities. Traders can assume highly leveraged positions at low transaction costs using these extremely flexible instruments. Derivative products like index futures, stock futures, index options and stock options have become important instruments of price discovery, portfolio diversification and risk hedging in stock markets all over the world in recent times. [7]

A. Types of Derivatives

A derivative is a product whose value is derived from the value of one or more underlying variables or assets in a contractual manner. The underlying asset can be equity, forex, commodity or any other asset.

Shiv Singh Sarangdevot is a Professor and Vice Chancellor of Janardan Rai Nagar Rajasthan Vidyapeeth (Deemed) University (+91 99280 79640, prof.sarangdevot@gmail.com).

Yuvraj Singh Rathore is an Assistant Professor in Rai Nagar Rajasthan Vidyapeeth (Deemed) University (yuvrathore@gmail.com).

[2] A forward contract is an agreement to buy or sell an asset on a specified date for a specified price. The forward contracts are normally traded outside the exchanges. Forward contracts are often confused with futures contracts. The confusion is primarily because both serve essentially the same economic functions of allocating risk in the presence of future price uncertainty. However futures are a significant improvement over the forward contracts as they eliminate counterparty risk and offer more liquidity. [6]

A futures contract is a standardized contract, traded on a futures exchange, to buy or sell a certain underlying instrument at a certain date in the future, at a pre-set price. The future date is called the delivery date or final settlement date. The pre-set price is called the futures price. A futures contract gives the holder the right and the obligation to buy or sell, which differs from an options contract. [1] A derivative transaction that gives the option holder the right but not the obligation to buy or sell the underlying asset at a price, called the strike price, during a period or on a specific date in exchange for payment of a premium is known as 'option'. Underlying asset refers to any asset that is traded. The price at which the underlying is traded is called the 'strike price'. There are two types of options i.e., CALL OPTION AND PUT OPTION. Swaps are transactions which obligates the two parties to the contract to exchange a series of cash flows at specified intervals known as payment or settlement dates. They can be regarded as portfolios of forward's contracts. A contract whereby two parties agree to exchange (swap) payments, based on some notional principle amount is called as a 'SWAP'. In case of swap, only the payment flows are exchanged and not the principle amount. The other kind of derivatives, which are not, much popular are Baskets options, leaps, warrant and swaption [2]

II. INDIAN DERIVATIVES MARKET

Starting from a controlled economy, India has moved towards a world where prices fluctuate every day. The introduction of risk management instruments in India gained momentum in the last few years due to liberalisation process and Reserve Bank of India's (RBI) efforts in creating currency forward market. In July 1999, derivatives trading commenced in India. [6]

Presently futures' trading is permitted in all the commodities. Trading is taking place in about 78 commodities through 25 Exchanges/Associations as given in the table below:

TABLE I CHRONOLOGY OF INSTRUMENTS [5]

1991		Liberalisation process initiated
14 December 1995		NSE asked SEBI for permission to trade index futures.
18 November 1996		SEBI setup L.C.Gupta Committee to draft a policy framework for index futures.
11 May 1998		L.C.Gupta Committee submitted report.
7 July 1999		RBI gave permission for OTC forward rate agreements (FRAs) and interest rate swaps.
24 May 2000		SIMEX chose Nifty for trading futures and options on an Indian index.
25 May 2000		SEBI gave permission to NSE and BSE to do index futures trading.
9 June 2000		Trading of BSE Sensex futures commenced at BSE.
12 June 2000		Trading of Nifty futures commenced at NSE.
25 September 2000		Nifty futures trading commenced at SGX.
2 June 2001		Individual Stock Options & Derivatives

TABLE II
LIST OF TRADING EXCHANGES AND RELATED COMMODITY

No.	Exchange	Commodity
1.	India Pepper & Spice Trade Association, Kochi (IPSTA)	Pepper (both domestic and international contracts)
2.	Vijai Beopar Chambers Ltd., Muzaffarnagar	Gur, Mustard seed
3.	Rajdhani Oils & Oilseeds Exchange Ltd., Delhi	Gur, Mustard seed its oil & oilcake
4.	Bhatinda Om & Oil Exchange Ltd., Bhatinda	Gur
5.	The Chamber of Commerce, Hapur	Gur, Potatoes and Mustard seed
6.	The Meerut Agro Commodities Exchange Ltd., Meerut	Gur
7.	The Bombay Commodity Exchange Ltd., Mumbai	Oilseed Complex, Castor oil international contracts
8.	Rajkot Seeds, Oil & Bullion Merchants Association, Rajkot	Castor seed, Groundnut, its oil & cake, cottonseed, its oil & cake, cotton (kapas) and RBD palmolein.
9.	The Ahmedabad Commodity Exchange, Ahmedabad	Castorseed, cottonseed, its oil and oilcake
10.	The East India Jute & Hessian Exchange Ltd., Calcutta	Hessian & Sacking
11.	The East India Cotton Association Ltd., Mumbai	Cotton
12.	The Spices & Oilseeds Exchange Ltd., Sangli.	Turmeric
13.	National Board of Trade, Indore	Soya seed, Soya oil and Soya meals, Rapeseed/Mustardseed its oil and oilcake and RBD Palmolien
14.	The First Commodities Exchange of India Ltd., Kochi	Copra/coconut, its oil & oilcake
15.	Central India Commercial Exchange Ltd., Gwalior	Gur and Mustard seed
16.	E-sugar India Ltd., Mumbai	Sugar
17.	National Multi-Commodity Exchange of India Ltd., Ahmedabad	Several Commodities

18.	Coffee Futures Exchange India Ltd., Bangalore	Coffee
19.	Surendranagar Cotton Oil & Oilseeds, Surendranagar	Cotton, Cottonseed, Kapas
20.	E-Commodities Ltd., New Delhi	Sugar (trading yet to commence)
21.	National Commodity & Derivatives, Exchange Ltd., Mumbai	Several Commodities
22.	Multi Commodity Exchange Ltd., Mumbai	Several Commodities
23.	Bikaner commodity Exchange Ltd., Bikaner	Mustard seeds its oil & oilcake, Gram. Guar seed. Guar Gum
24.	Haryana Commodities Ltd., Hissar	Mustard seed complex
25.	Bullion Association Ltd., Jaipur	Mustard seed Complex

III. GROWTH & DEVELOPMENT OF DERIVATIVES IN INDIA

The growth and development of derivatives in India is shown with the help of status report of the developments in the derivative market. [2]

1. The Board at its meeting on November 29, 2002 had desired that a quarterly report be submitted to the Board on the developments in the derivative market. Accordingly, this memorandum presents a status report for the quarter April-June 2009-10 on the developments in the derivative market.

2. Equity Derivatives Segment [1]

A. Observations on the quarterly data for April-June, 2009-10 [4]

During April-June 2009-10, the turnover at BSE was Rs.1,510 crore, which was insignificant as compared to that of NSE at Rs. 3,315,491 crore. [4]

Refer Table 3

Volume (no. of contracts) increased by 31.21% to 1569.04 lakh while turnover increased by 46.79% to Rs. 3,902.5 thousand crore in April-June 2009-10 over April-June 2008-09.

Futures (Index Future + Stock Future) constituted 60.47% of the total number of contracts traded in the F&O Segment. Stock Future and Index Future accounted for 31.33% and 32.48% respectively.

Options constituted 36.17% of the total volumes. This mainly comprised of trading in Index Option (34.09%).

Turnover at F&O segment was 4.19 times that of its cash segment.

Reliance, ICICI Bank Ltd, Nifty, DLF and Bank Nifty were the most actively traded scrips in the derivatives segment. Together they contributed 25.12% of derivatives turnover in individual stocks.

Client trading constituted 53.86%, Propriety trading constituted 32.55% and FII trading constituted remaining 13.59% of the total turnover.

Refer Table 4

Volume in longer dated derivative contracts (contracts with maturity of more than three months and up to 3 years) was 3.99 lakh and total turnover was Rs. 9870 crore.

Total volume in shorter dated derivative contracts (contracts with maturity up to 3months) was 1,695 lakh and total turnover was Rs. 3,307 thousand crore.

Refer Table 5

Volume in Mini Nifty (contracts with minimum lot size of Rs.1 lakh) was 44 lakh and total turnover was Rs. 37 thousand crore.

Refer Table 6

During April-June 2009-10, S&P CNX Nifty futures recorded highest average daily volatility of 2.85% in April 2009.

Refer Table 7

The volume (in terms of no. of contracts traded) of Nifty Future at SGX as a percentage of the volume of Nifty Future at NSE was 8.55% during April-June 2009-10.

TABLE III
FACT FILE OF APRIL-JUNE 2009-10 WITH RESPECT TO THE SAME QUARTER LAST YEAR

Market Depth	PRODUCT	APRIL-JUNE 2008-09		APRIL-JUNE 2009-10	
		No. of Contracts(Lakh)	Turnover (Rs. '000)	No. of Contracts(Lakh)	Turnover (Rs. '000)
Depth	VOLUME & TURNOVER				
	Index Future	415.7	935.6	514.8	966.1
	Index Option	240.1	571.3	725.6	1,429.9
	Single Stock Future	514.5	1,093.1	305.4	1,394.1
	Stock Option	25.5	58.3	23.3	11.2
	Total	1,195.8	2,658.4	1,569.041	3,902.5
	Market Share (%)				
	Index Future	34.76	35.20	32.80	24.75
	Index Option	20.07	21.49	46.24	36.64
	Single Stock Future	43.02	41.12	19.46	35.72
	Stock Option	2.13	2.19	1.48	0.28
	Turnover in F&O as multiple of turnover in cash segment		3.26		4.19
Market Concentration	Five most active scrips in the F&O Segment active scrips in F&O Segment	-Reliance -Reliance Petro. Ltd. -Tata Steel -Reliance Capital Ltd -Infosys Tech. Ltd		-Nifty -Reliance -Bank Nifty -ICICI Bank Ltd -DLF	
	Contribution of the above five to total derivatives turnover (%)	23.72		25.19	
(avg. of three months)	Client excluding FII trades)	59.77		53.86	
	Proprietary	27.88		32.55	
	FII	12.35		13.59	

[3].

TABLE IV
DATA FOR SHORTER DATED AND LONGER DATED DERIVATIVE CONTRACTS

Time Period	Trades in Shorter Dated derivative contracts (up to 3 Months)		Trades in Longer Dated derivative contracts (more than 3 months or more)	
(Quarter)	No of Contracts (in lakh)	Turnover (in Rs '000 cr.)	No of Contracts (in lakh)	Turnover (in Rs '000 cr.)
Apr-Jun 2009-10	1,694.64	3,307.11	3.99	9.87
Apr-Jun 2008-09	1,194.97	2,655.88	4.83	12.5

TABLE V
DATA FOR MINI NIFTY DERIVATIVE CONTRACTS

Time Period (Quarter)	No of contract (lakh)	Turnover (Rs.'000 cr.)
Apr-Jun 2009-10	43.8	36.9
Apr-Jun 2008-09	29.4	27.7

TABLE VI
MINIMUM, MAXIMUM AND AVERAGE DAILY VOLATILITY OF THE F&O SEGMENT AT NSE FOR S&P CNX NIFTY SINCE JAN,2009 [3]

	Average Volatility (%)	Maximum Volatility (%)	Minimum Volatility (%)
Jan-09	2.47	2.98	2.05
Feb-09	1.71	1.99	1.56
March-09	1.80	2.28	1.61
April-09	2.85	3.08	2.38
May-09	2.27	2.61	2.10
June-09	2.28	2.51	2.09

TABLE VII
SGX VOLUME AS A PERCENTAGE OF NSE VOLUME FOR NIFTY FUTURE IN TERMS OF NUMBER OF CONTRACTS FOR THE PERIOD APRIL-JUNE 2009-10 [3]

Month	NSE (Nifty volume)	Volume Future	SGX (Nifty volume)	Volume Future	SGX volume as % of NSE Volume
Apr-Jun 2009-10	47,977,775		4,104,418		8.55
Apr-Jun 2008-09	37,764,776		3,241,034		8.58

A. Salient features of the 1st quarter 2009-10

The volume (no. of contracts) and open interest in the derivatives market has increased even when the underlying market is witnessing a downward trend. This indicates that there are sufficient long position holders who anticipate value proposition in a falling market. Falling or rising markets on the back of low volumes may be a cause of concern from the point of market integrity. However, as observed from the data, under the present scenario the fall in the market has been accompanied by high volumes. In Index Option, there is a sharp increase in turnover and volume during April-June 2009-10 over April-June 2008-09. Possible reasons for increase in options trading activity can be attributed to increase in volatility. Market observers believe that conditions across markets and asset classes have become more volatile and uncertain in the recent past.

In Index Future, both turnover and volume have increased during April-June 2009-10 as compared to April-June 2008-09. There is a decrease in turnover in Single Stock Futures during April-June 2009-10 as compared to April-June 2008-09. Except Index Option, the market share of all other products has decreased (both in terms of volume and turnover) in first quarter of 2009-10 as compared to the first quarter of 2008-09. There is a decrease in turnover (21.04%) and volume (17.39%) in Longer Dated derivative contracts in first quarter of 2009-10 as compared to the first quarter of 2008-09. Longer dated derivatives were launched in March 2008, but the volumes have not picked up consequently. For shorter dated derivative contracts, turnover increased by 24.52% whereas volume increased by 4.81% in first quarter of 2009-10 as compared to the first quarter of 2008-09. During 2009-10, Mini Nifty volumes increased by 49.15% and turnover increased by 33.43% during April-June 2009-10 over April-June 2008-09.

B. Business Growth in Derivatives segment (NSE): Index futures

Year	No. of contracts
2009-10	35279898
2008-09	210428103
2007-08	156598579
2006-07	81487424
2005-06	58537886
2004-05	21635449
2003-04	17191668
2002-03	2126763
2001-02	1025588
2000-01	90580

C. Overall Trading

Year	No. of contracts	Turnover (Rs. cr.)
2009-10	104495832	2370614.86
<u>2008-09</u>	657390497	11010482.20
<u>2007-08</u>	425013200	13090477.75
<u>2006-07</u>	216883573	7356242
<u>2005-06</u>	157619271	4824174
<u>2004-05</u>	77017185	2546982
<u>2003-04</u>	56886776	2130610
<u>2002-03</u>	16768909	439862
<u>2001-02</u>	4196873	101926
<u>2000-01</u>	90580	2365

D. Overall trade description under NSE

Year	Index Futures		Stock Futures		Index Options		Stock Options		Interest Rate Futures		Total	
	No. of contracts	Turnover (Rs. cr.)	No. of contracts	Turnover (Rs. cr.)	No. of contracts	Notional Turnover (Rs. cr.)	No. of contracts	Notional Turnover (Rs. cr.)	No. of contracts	Turnover (Rs. cr.)	No. of contracts	Turnover (Rs. cr.)
<u>2009-10</u>	35279898	619179.23	19386820	804537.87	48377511	884302.84	1451603	62594.96	0	0.00	104495832	2370614.86
<u>2008-09</u>	210428103	3570111.40	221577980	3479642.12	212088444	3731501.84	13295970	229226.81	0	0.00	657390497	11010482.20
<u>2007-08</u>	156598579	3820667.27	203587952	7548563.23	55366038	1362110.88	9460631	359136.55	0	0.00	425013200	13090477.75
<u>2006-07</u>	81487424	2539574	104955401	3830967	25157438	791906	5283310	193795	0	0	216883573	7356242
<u>2005-06</u>	58537886	1513755	80905493	2791697	12935116	338469	5240776	180253	0	0	157619271	4824174
<u>2004-05</u>	21635449	772147	47043066	1484056	3293558	121943	5045112	168836	0	0	77017185	2546982
<u>2003-04</u>	17191668	554446	32368842	1305939	1732414	52816	5583071	217207	10781	202	56886776	2130610
<u>2002-03</u>	2126763	43952	10676843	286533	442241	9246	3523062	100131	-	-	16768909	439862

4

IV. CONCLUSION

From the above analysis it can be concluded that

1. Derivative market is growing very fast in the Indian Economy. The turnover of Derivative Market is increasing year by year in the India's largest stock exchange NSE. In the case of

index future there is a phenomenal increase in the no. of contracts. But whereas the turnover is declined considerably. In the case of stock future there was a slow increase observed in the no of contracts whereas a decline was also observed in its turnover. In the case of index option there was a huge increase observed both in the no of contracts and turnover.

2. After analyzing data it is clear that the main factors that are driving the growth of Derivative Market are Market improvement in communication facilities as well as long term saving & investment is also possible through entering into Derivative Contract. So these factors encourage the Derivative Market in India.
3. It encourages entrepreneurship in India. It encourages the investor to take more risk & earn more return. So in this way it helps the Indian Economy by developing entrepreneurship. Derivative Market is more regulated & standardized so in this way it provides a more controlled environment. In nutshell, we can say that the rule of High risk & High return apply in Derivatives. If we are able to take more risk then we can earn more profit under Derivatives.

Commodity derivatives have a crucial role to play in the price risk management process for the commodities in which it deals. And it can be extremely beneficial in agriculture-dominated economy, like India, as the commodity market also involves agricultural produce. Derivatives like forwards, futures, options, swaps etc are extensively used in the country. However, the commodity derivatives have been utilized in a very limited scale. Only forwards and futures trading are permitted in certain commodity items.

REFERENCES

- [1] *Report of the RBI-SEBI standard technical committee on exchange traded Currency Futures*
- [2] *"Regulatory Framework for Financial Derivatives in India" by Dr.L.C.GUPTA*
- [3] www.nse-india.com
- [4] www.bseindia.com
- [5] www.sebi.gov.in
- [6] www.ncdex.com
- [7] www.google.com
- [8] www.derivativesindia.com