

Comparative Study Of Stock Exchanges Of The World With Special Reference To Trading Volume Of Financial Derivatives

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Abstract:

Any business activity entails varying degrees of uncertainty with regard to its operations. This is recognized as risk associated in conducting the business.

In the past three decades financial markets have witnessed the emergence of many financial instruments, which facilitate financial risk management. The most popular amongst these products are financial futures and options. India is one of the most successful developing countries in terms of a vibrant market for exchange-traded derivatives. After the credit crisis took its toll in 2009, the global futures and options industry returned to rapid growth in 2010 after leveling off in 2009. Derivatives are becoming increasingly important in world markets as a tool for risk management. A comparative study has been made between various stock exchanges of the world with respect to trading volume of all the four exchange traded financial derivatives. The study has been made between various Derivative Instruments and also between various Stock Exchanges in the world where financial derivatives are traded. The results shows growth of some derivatives very fast than others, Suggestions have been made to support the growth of Financial Derivatives in India and World.

Key words: Risk, Financial Markets, Futures, Options, Stock Exchange

Introduction

Any business activity entails varying degrees of uncertainty with regard to its operations. This is recognized as risk associated in conducting the business. The management of risk assumes greater significance as it has wide economic outcomes and consequences. At one level, companies require risk management products to handle risk related to interest rates, exchange rates and input output prices. At the other level of investors, the residual risk of net income and dividends and therefore the volatility of stock prices require risk management.

In the early 1970s, a floating exchange rate imposed serious economic problems. Business houses and financial institutions in western economies realized that unpredictable movements in exchange rates and interest rates could not be ignored. Failure to manage these risks put several firms out of business despite their technology, skilled labor and market pre eminence. Such economies turned to financial markets to manage price risk. As a result, in the past three decades financial markets have witnessed the emergence of many financial instruments, which facilitate financial risk management. The underlying principle behind these instruments is that a risk averse individual is willing to pay a price to transfer the risk and an individual with higher risk taking ability is willing to bear the as investment management tools and developed various innovative risk management and risk for a price. Over the years market players discovered the potential of these risk management tools investment strategies. The most popular amongst these products are financial futures and options. Futures and options contracts are available for foreign exchange, interest rates, equity and commodities. These products are also called derivatives.

India is one of the most successful developing countries in terms of a volatile and active market for exchange-traded derivatives. This shows the strengths of the modern development in India's securities markets, which are based on nationwide market access, anonymous electronic trading, and a predominant retail market. There is an increasing sense that the equity derivatives market plays a major role in discovery of prices of securities.

In a way, derivatives are like electricity. Properly used, they can provide great benefit. If they are mishandled or misunderstood, the results can be catastrophic. Derivatives are not inherently “bad”. When there is full understanding of these instruments and responsible management of the risks, financial derivatives can be useful tools in pursuing an investment strategy.

Derivative is a security or a financial asset, which derives its value from some specified underlying asset. It is an instrument whose value is derived from the value of one or more underlying asset, which can be commodities, precious metals, currency, bonds, stocks, stock indices etc. It does not have any physical existence but emerge out of a contract between two parties, where payment is based on or derived from some agreed upon bench mark. Since individuals can create a derivative product by means of an agreement, the types of derivative products that can be developed are limited only by the human imagination. The more creative the human being is, the more derivative products can be created.

Literature Review

Global Derivatives Markets

After the credit crisis took place in 2009, the global futures and options industry returned to rapid growth in 2010 after a consistent growth in 2009. Looking at the global trends in derivatives volume by category, the total number of futures and options contracts traded on the 70 exchanges worldwide recorded by the Futures Industry Association went up from 17.7 billion in 2009 to 22.3 billion in 2010, a growth of about 25.9 percent.

The birth and development of Indian derivative market can be sketched as under:

India’s experience with the onset of equity derivatives market has been extremely favorable; within a few years of its inception. NSE stood out as one of the most leading exchanges among all emerging markets, in terms of equity derivatives turnover. In the last few years, volumes in the F&O segment have constantly been more than two times of the cash segment of NSE.

India's experience with the equity derivatives market has been extremely positive. The derivatives turnover on the NSE has surpassed the equity market turnover.

In 2007 Indian exchanges dominated in single stock futures. It is very interesting observation that the share of single stock futures in the NSE derivatives segment is continuously reducing. These instruments were very popular in late 2007 when stock prices were rising. They accounted for 66 per cent of the total value of derivative contracts traded in December 2007. This share has declined to 18 per cent in December 2010, which shows the shift in preference of traders of derivatives in India.

Thus, derivatives are becoming increasingly important in world markets as a tool for risk management. Derivative instruments can be used to minimize risk. Derivatives are used to separate the risks and transfer them to parties willing to bear these risks. The kind of hedging that can be obtained by using derivatives is cheaper and more comfortable than what could be obtained by using cash instruments. It is so because, when we use derivatives for hedging, actual delivery of the underlying asset is not at all essential for settlement purposes. The profit or loss on derivative deal alone is adjusted in the derivative market.

Moreover, derivatives do not create any new risk. They simply control risk and transfer them to those who are willing to bear these risks.

Adequate regulatory measures are also being initiated to try and ensure that adverse effects from excessive leverage in derivatives market do not in any way hinder normal financial market transactions.

Exchange-traded derivative instruments were launched in India nearly two decades ago and the acceptance of these instruments has grown at a growing pace during this period. A recent survey of the global derivative market, published by World Federation of Exchanges, shows that Indian exchanges have now evolved as active and leading players in the global derivatives environment. Our exchanges such as the NSE, MCX and MCX-SX are the front-runners in the volume charts in many of the derivative product categories.

Data Collection and Analysis

NSE stands **first** by number of Stock index options contracts traded in 2018 stands **second** by number of single stock futures contracts traded in 2018, stands **eighth** by number of Stock index futures contracts traded in 2018 world over and stands **second** in number of currency futures and options contracts traded in 2018. These rankings are based on the World Federation of Exchanges (WFE) Market Highlights 2018.

The total number of futures and options traded worldwide in the first half of the year 2018 reached **14.9 billion** contracts, up 19.7% compared to the first half of 2017. Open interest, which measures the number of outstanding contracts, was **850.7 million** contracts at the end of June 2018, roughly unchanged from a year ago. The fastest rate of growth was in the equity index sector, where volume rose 30% over the first half of 2017.

Table 1

Business Growth in FO Segment

Year	Index Futures		Stock Futures		Index Options		Stock Options		Total		Average Daily Turnover * (₹ cr.)
	No. of contracts	Turnover (₹ cr.)	No. of contracts	Turnover (₹ cr.)	No. of contracts	Notional Turnover (₹ cr.)	No. of contracts	Notional Turnover (₹ cr.)	No. of contracts	Turnover* (₹ cr.)	
2017-18	16327228	1280716.59	64157657	4644081.46	408232565	34047039.65	37316339	2825654.88	526033789	42797492.54	541740.41
2016-17	66535070	4335940.78	173860130	11129587.14	1067244916	72797287.69	92106012	6107485.87	1399746129	94370301.61	380525.41
2015-16	140538674	4557113.64	234243967	7828606.00	1623528486	48951930.60	100299174	3488173.75	2098610395	64825834.30	262452.77
2014-15	129303044	4107215.20	237604741	8291766.27	1378642863	39922663.48	91479209	3282552.18	1837041131	55606453.39	228833.14
2013-14	105252983	3083103.23	170414186	4949281.72	928565175	27767341.25	80174431	2409488.61	1284424321	38211408.05	152236.69
2012-13	96100385	2527130.76	147711691	4223872.02	820877149	22781574.14	66778193	2000427.29	1131467418	31533003.96	126638.57
2011-12	146188740	3577998.41	158844617	4074670.73	864017736	22720031.64	36494371	977031.13	1205045464	31349731.74	125902.54
2010-11	165023653	4356754.53	186041459	5495756.70	650638557	18365365.76	32508393	1030344.21	1034212062	29248221.09	115150.48
2009-10	178306889	3934388.67	145591240	5195246.64	341379523	8027964.20	14016270	506065.18	679293922	17663664.57	72392.07
2008-09	210428103	3570111.40	221577980	3479642.12	212088444	3731501.84	13295970	229258.81	657390497	11010482.20	45310.63
2007-08	156598579	3820667.27	20587952	7548563.23	55366038	1362110.88	9460631	359135.55	425013200	13090477.75	52153.30
2006-07	81487424	2539574	104955401	3830967	25157438	791906	5283310	193795	216883573	7356242	29543
2005-06	58537886	1513755	80905493	2791697	1295116	338469	5240776	180253	157619271	4824174	19220
2004-05	21635449	772147	47043066	1484056	3293558	121943	5045112	168836	77017185	2546982	10107
2003-04	17191668	554446	32368842	1305939	1732414	52816	5583071	217207	56886776	2130610	8388
2002-03	2126763	43952	10676843	286533	442241	9246	3523062	100131	16768909	439862	1752
2001-02	1025588	21483	1957856	51515	175900	3765	1037529	25163	4196873	101926	410
2000-01	90580	2365	-	-	-	-	-	-	90580	2365	11

Note:

Notional Turnover = (Strike Price + Premium) * Quantity

Index Futures, Index Options, Stock Options and Stock Futures were introduced in June 2000, June 2001, July 2001 and November 2001 respectively

Source: www.nseindia.com

Table 2

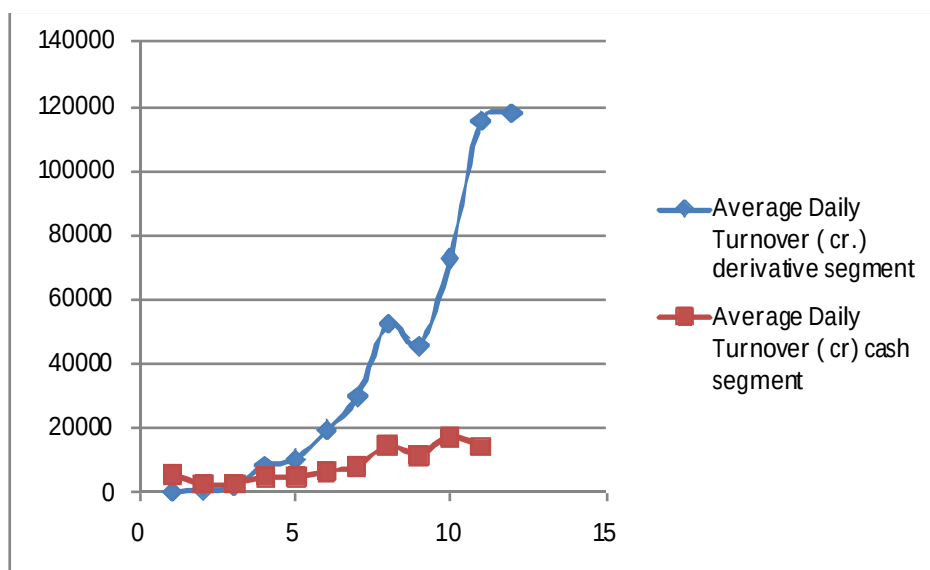
Top 5 exchanges by number of Stock index options contracts traded in 2018

		2018 (in Cr.)	AGR
1	National Stock Exchange of India	22.14	63%
2	Korea Exchange	6.76	22%
3	Eurex	4.19	12%
4	Chicago Board Options Exchange	3.92	25%
5	CME Group	2.07	23%

On the basis of data collected from World Federation of Exchanges (WFE) Market highlights 2018 and www.nseindia.com and other sources of reference, various analyses are made and presented in the form of Graph and Charts as follows:

Graph 1

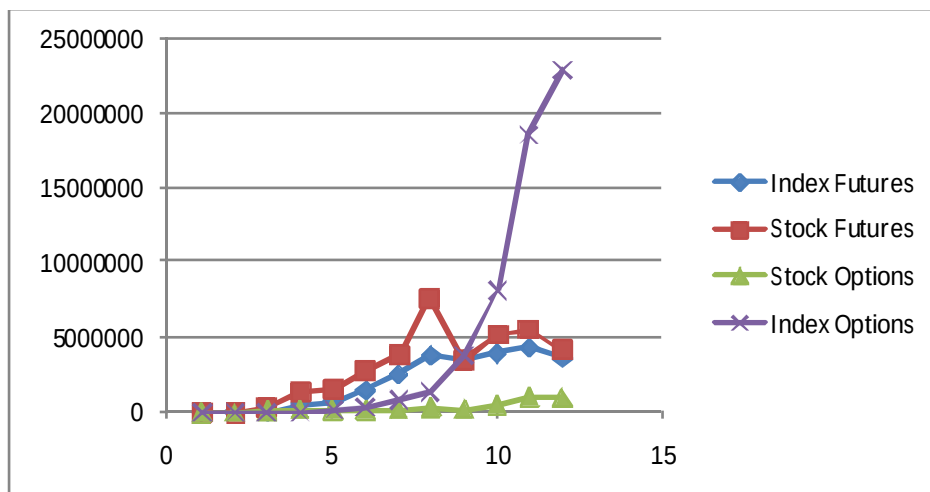
Average daily turnover at cash & derivative segment of NSE (Rs. Cr.)



Source: www.nseindia.com

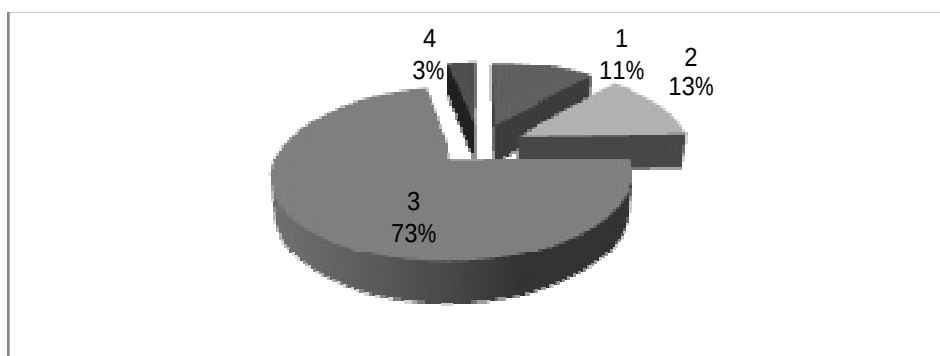
Graph 2

Growth of various derivative instrument in turnover in derivative segment of NSE



Graph 3

Share of various derivative instrument in turnover in derivative segment of NSE in the year 2017-18



- 1- Index Futures
- 2- Stock Futures

3- Index Options

4- Stock Options

Analysis

1. These traders are now moving their interest towards index options that accounted for 64 per cent of the value of traded contracts. Higher outflow, less liquidity and comparatively higher amount of risk in single stock futures could be the reasons for this change in the behavior of investors.
2. **Stock index options and futures** recorded the second highest no. of contracts traded in August 2018 after August 2015.
3. The NSE is the **largest** in this segment in terms of the number of contracts traded. In notional value of trades, it ranks sixth.
4. It was very interesting fact that the BSE registered the highest growth in this segment in 2010; by showing a growth of 918 per cent. Volume on the NSE also showed a growth of 65 per cent. The report also shows the collection of total option premium for that year. NSE collected option premiums worth \$33 billion, up from \$25 billion in 2009. Interestingly, premiums collected were only one per cent of the notional value of the contracts traded on NSE. This supports our view that very negligible amount of funds are blocked by traders in this segment.
5. The index options market also has really taken off since its introduction and cumulatively surpassed even the index and stock futures market.
6. The Nifty is now the **LARGEST** traded index option globally with **22.14 crore** contracts leaving its immediate follower, Korea Exchange, far behind at the level of 6.76 crore.
7. Contracts of almost all of the 222 underlying stocks get traded regularly in the F&O segment of NSE. One of the puzzles in India's experience with equity derivatives has

been the dominance of individual stock derivatives till 2007-08, after which, index options have started showing their dominance so much so that in terms of volumes traded they can be ranked first leaving far behind futures on index as well as individual stock in derivative segment of Nifty. This may be surprising as, logically, index based derivatives are a better alternative instrument in a developing market, where there may exist unequal distribution of information about individual stocks, as compared to the market index which is definitely more transparent.

Thanks to the sharp rise in index options trading on the National Stock Exchange (NSE), India now has two contracts in the top 10 equity index futures and options contracts worldwide. This is based on rankings for 2018 by the Futures Industry Association (FIA).

Factors affecting the growth of Derivative trading in India

Policy developments

Introduction of index options with tenure up to five years

Further to SEBI's circular dated January 11, 2008, regarding the introduction of index options with tenure up to three years, the SEBI decided to permit the stock exchanges to introduce option contracts on the SENSEX and the Nifty with a tenure up to five years. The introduction of such five-year option contracts will be subject to the condition that there are eight semi-annual contracts of the cycle June/December together with three serial monthly contracts, and three quarterly contracts of the cycle March/June/September/December

Options on USD-INR spot rate

The SEBI, has allowed for the introduction of options on USD-INR spot rate on the currency derivatives segment of the stock exchanges. Premium styled European call and put options can be introduced on the USD-INR spot rate. The contract would be settled in cash in Indian rupees, and the final settlement price would be the RBI Reference Rate on the date of expiry of the contracts.

Other reasons supporting growth of options

- The Nifty derivatives contracts are liquid contracts with low trading costs. While the high volatility in 2008 affected liquidity in the developed world, turnover only enhanced for the Nifty products.
- Local market players increased hedging activity, besides preferring index products to trade because of their lower risk. With index options, in fact, many discovered that they could contain their risk at a pre-defined level.
- As compared to futures, investment is less in options.
- Losses in options are limited to the extent of brokerage.
- A large number of strategies can be developed, although complex to understand, to suit the volatility of the market.

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