

Comparative Analysis on Equity Index Futures

P. Suriyadheepa¹ and Dr. P.G.Thirumagal²

¹(Research Scholar, School of Management studies, VISTAS, Chennai, India)

²(Associate Professor, School of Management studies, VISTAS, Chennai, India)

Abstract: Derivatives instrumentsturn out to betrendy and materialization of the marketplace for derivative instruments like forwards, futures, swaps and options could be considered as to the compliance of variation in asset prices. The keyobject of this study was to find the difference in gain of short or long position for Equity Index Futures of NIFTY 50, NIFTY MIDCAP, NIFTY INFRA, NIFTY IT and NIFTY BANK. It was found that there was significant difference between in Short/Long position gain or loss in Nifty, Midcap, Nifty IT, Nifty Infra and Nifty bank quarter wise during 2014-2018. There was significant difference in gain/loss for Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank between the years of 2014 – 2018

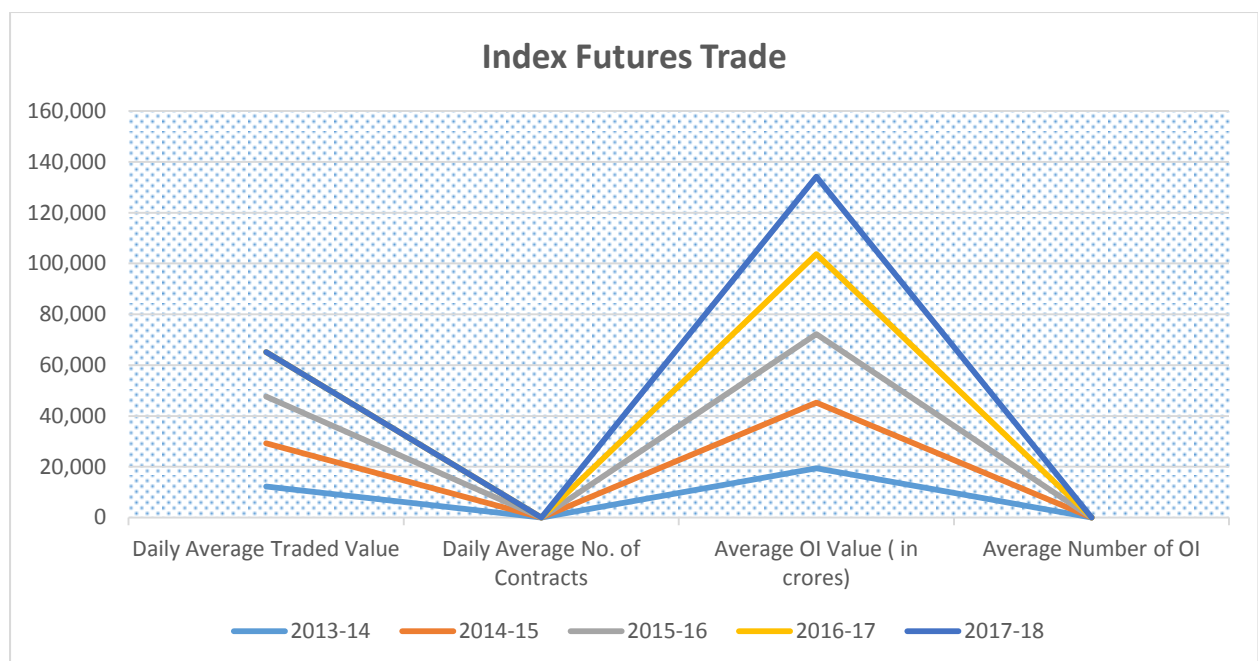
Keywords: Derivatives, Equity Index, Futures, NIFTY, Short position, Long position

Introduction:

Derivatives are tools in connection with trade which carry out as a basic right on an underlying asset. A right is bought either to purchase or sale the underlying asset after or during a specified time. The price at which the transaction is to be agreed out is also spelt out in the beginning itself. During the exercise of derivative products, it is feasible to transfer partly or wholly price fluctuation risks by fixing in asset pre-determinedprices. Whenmechanisms of risk managing, these commonly do not control over the core value of underlying asset. on the other hand, fixing in underlying asset pre-determined value, its products diminish the influence of variation in core underlying asset value taking place the high prosperity and cash stream circumstances of risk-reluctant investors. The main objectives was to find out the difference in Short/Long position gain or loss in Nifty, Midcap, Nifty IT, Nifty Infra and Nifty bank quarter wise during 2014-2018 and to find out difference in gain/loss between the groups of Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank and between the year of 2014 to 2018.

NSE Index Futures Trend:

Category	2013-14	2014-15	2015-16	2016-17	2017-18
Daily Average Traded Value	12,292	16,911	18,450	17,484	19,933
Daily Average No. of Contracts	4,19,404	5,32,157	5,68,983	2,68,287	2,34,450
Average OI Value (in crores)	19,426	25,834	26,913	31,512	30,558
Average Number of OI	5,92,339	8,85,348	8,49,152	4,82,021	4,82,265
Number of trading days	251	243	247	248	246



Review of Literature

Banikanta Mishra, Sarat Malik & Laltu Pore (2012) this study acquired contemporaneous daily spot, futures, and option prices on Nifty and ten stocks accidentally hand-picked and discovered that, whereas the spot-market is sky rocketing its supremacy over options and futures, the futures market's supremacy over option-marketplace has significantly dropped subsequent the increase in STT (Security Transaction Tax). The transacted price of the equivalent options, conversely, has greater than before over time. It suggests a decline or removal of STT on buying.

Babu Jose and Dr.D.Lazar(2011)analyzed this study to investigate the effectiveness of information inIndian futures contracts markets by following ways (a) vibrant relation between Indian spot market, (b) the capacity of spot and futuresmarket features to forecast the Volatility of futures market, that would be the limitedfundamentalcorrelation between a variety of determinants of the futures market and (c) the hedging method of futures market. Also, it is definiteabout informational effectiveness of futures market in India based on observedexploration and the hypothetical support from the literaturereview. The high level existence of speculators leads to high market Volatility rate in India. long term investment may not be critical and appropriate judgment at the rightperiod supports the Buyer/Seller to earn gain from the existing trademethod in Indian futures market.

RuchikaGahlot, Saroj K. Datta, Sheeba KAP (2010) This study is to learnthe influence of stock market instability in Nifty futures trading. The mockup data combined closing prices of S&P CNX Nifty in addition to closing prices of five derivative stocks and five non derivative stocks from April 1, 2002 to March 31, 2005. Also this study practices GARCH model to predict nature of instability over time and Fluctuation of clustering phenomenon of data. The study recommends that there will be no considerable variation in the instability of S &P CNX Nifty, on the other hand the volatility structure has altered to a fewlevel.

Vipul (2008) scrutinized the correlation between open interest of stock futures, volume mispricing and their underlying shares price volatility in Indian futures markets. The sample data was carefully chosen on the source of average volume based rank of the stock futures from 1st January 2002 to 30th November 2004. Every day price Variation for the futures and underlying shares was figuredby applying Parkinson's formula and it indicated that the volatility of daily returns can be evaluatedwith high accuracy by means of the tremendous value estimator.

Methodology

The method adopted for research is a decisive, expressive type strategy which makes study the impact of Futures in equity index derivative market and how much the Nifty, Midcap, Infra, IT &Banksectorhave been occupied. This study involves reflection of the presentation of Nifty, Midcap, Infra, IT &BankShort/Long position Gain/Loss during the year 2014-18. The study also aims to find significant Difference in Short/Long position Gain/Loss between Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank during year of 2014 – 2018. One way ANOVA method used to find significant difference between in Short/Long position gain

or loss in Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank quarter wise during 2014-2018. Two way ANOVA method used to find significant interaction between difference in gain/loss between Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank and during the years 2014 – 2018.

1. Short position gain: When spot Price of Futures is less than Selling Price of Futures
2. Shortposition loss: When spot Price of Futures is greater than Selling Price of Futures
3. Long position gain: When spot Price of Futures is greater than Selling Price of Futures
4. Long position loss: When spot Price of Futures is less than Selling Price of Futures

In the derivative division, approximately 99.5 percentage of the total trading volume is accounted by NSE; as a result, FUTIDX-NIFTY Index is used to calculate Short/Long position Gain/Loss between Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank during year of 2014 – 2018. This study utilizes the day by daysettlement prices of the Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank Index Were collected from the NSE website (www.nseindia.com). Thisarticlerefect on the inclusions from prominent indices from the FUTIDX-NIFTY. The valuation is preparedthrough the historical data for the period 2014-2018.

Results & Discussions

The measure that calculates theNifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bankgroups for the given set of values is the mean square & significance between groups for those data values. It proves how much the Short/Long position Gain/Loss on the Nifty Index (fund) is compared group wise & year wise. The subsequent table shows mean square &significance of Short/Long position Gain/Loss on the Nifty Index every year quarter wise starting from 2014-18.

One way ANOVA:

Difference in Short/Long position Gain/Loss through One Way ANOVA analysis, between Nifty, Midcap, Nifty IT, Nifty Infra and Nifty bank quarter wise during 2014-2018.

Ho1: There is no significant difference in Short/Long position gain or loss for NIFTY 50 for first quarter during 2014-2018

Ho2: There is no significant difference in Short/Long position gain or loss for NIFTY 50 for second quarter during 2014-2018

Ho3: There is no significant difference in Short/Long position gain or loss for NIFTY 50 for third quarter during 2014-2018

Ho4: There is no significant difference in Short/Long position gain or loss for NIFTY 50 for fourth quarter during 2014-2018

Ho5: There is no significant difference in Short/Long position gain or loss for NIFTY MIDCAP for first quarter during 2014-2018

Ho6: There is no significant difference in Short/Long position gain or loss for NIFTY MIDCAP for second quarter during 2014-2018

Ho7: There is no significant difference in Short/Long position gain or loss for NIFTY MIDCAP for third quarter during 2014-2018

Ho8: There is no significant difference in Short/Long position gain or loss for NIFTY MIDCAP for fourth quarter during 2014-2018

Ho9: There is no significant difference in Short/Long position gain or loss for NIFTY BANK for first quarter during 2014-2018

Ho10: There is no significant difference in Short/Long position gain or loss for NIFTY BANK for second quarter during 2014-2018

Ho11: There is no significant difference in Short/Long position gain or loss for NIFTY BANK for third quarter during 2014-2018

Ho12: There is no significant difference in Short/Long position gain or loss for NIFTY BANK for fourth quarter during 2014-2018

Ho13: There is no significant difference in Short/Long position gain or loss for NIFTY INFRA for first quarter during 2014-2018

Ho14: There is no significant difference in Short/Long position gain or loss for NIFTY INFRA for second quarter during 2014-2018

Ho15: There is no significant difference in Short/Long position gain or loss for NIFTY INFRA for third quarter during 2014-2018

Ho16: There is no significant difference in Short/Long position gain or loss for NIFTY INFRA for fourth quarter during 2014-2018

Ho17: There is no significant difference in Short/Long position gain or loss for NIFTY IT for first quarter during 2014-2018

Ho18: There is no significant difference in Short/Long position gain or loss for NIFTY IT for second quarter during 2014-2018

Ho19: There is no significant difference in Short/Long position gain or loss for NIFTY IT for third quarter during 2014-2018

Ho20: There is no significant difference in Short/Long position gain or loss for NIFTY IT for fourth quarter during 2014-2018

Difference in Short/Long position gain or loss by Group Wise and Quarter wise During 2014-18	F	Significance
Nifty first quarter (2)	2.591	0.101
Nifty Second quarter (2)	.358	0.833
Nifty Third quarter(2)	1.108	0.401
Nifty Fourth quarter(2)	0.462	0.763
Nifty Midcap First quarter(2)	1.574	0.255
Nifty Midcap Second quarter(2)	.235	0.912
Nifty Midcap Third quarter(2)	3.325	0.056
Nifty Midcap fourth quarter(2)	1.168	0.381
Nifty Bank First quarter(2)	0.923	0.488
Nifty Bank Second quarter(2)	0.312	0.863
Nifty Bank Third quarter(1)	3.858	0.038
Nifty Bank Fourth quarter(2)	0.450	0.770
Nifty Infra First quarter(2)	3.026	0.071
Nifty Infra second quarter(2)	0.789	0.558
Nifty Infra Third quarter(2)	1.320	0.161
Nifty Infra Fourth quarter(2)	0.579	0.684
Nifty IT First quarter(2)	0.870	0.514
Nifty IT second quarter(1)	4.102	0.032

Nifty IT Third quarter(1)	13.147	.0001
Nifty IT Fourth quarter(2)	0.126	0.970

Since p value is less than 0.05 for NIFTY IT third quarter, reject Ho19. So, there was significant difference in Short/Long position gain or loss for NIFTY IT for third quarter during 2014-2018. P values for remaining quarters for NIFTY 50, NIFTY MIDCAP, NIFTY INFRA, NIFTY IT and NIFTY BANK was more than 0.05. So accept Ho1. Ho2, Ho3, Ho4, Ho5, Ho6, Ho7, Ho8, Ho9, Ho10, Ho11, Ho12, Ho13, Ho14, Ho15, Ho16, Ho17, Ho18, Ho19 and Ho20.

Two way ANOVA:

Difference in Short/Long position Gain/Loss through TWO Way ANOVA analysis, between Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank during year of 2014 – 2018.

Ho21 – There is no significant difference in gain/loss between the groups of Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank.

Ho22 – There is no significant difference in gain/loss for Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank between the years of 2014 – 2018.

Ho23 – There is no significant interaction between difference in gain/loss between Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank and between years of 2014 – 2018.

Variables	F	Significance
Between years	4.667	0.001
Between Groups	0.812	0.518
Interaction between Groups & years	0.935	0.529

Since p value is less than 0.05 for between the years, reject H022. So, there is significant difference in gain/loss for Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank between the years of 2014 – 2018

Since p value is more than 0.05 for between the groups, accept H021. So, there is no significant difference in gain/loss between the groups of Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank

Since p value is more than 0.05 for interaction between the groups and years, accept H023. So, there is no significant interaction between difference in gain/loss between Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank and during the years 2014 – 2018.and

Pairwise Comparison – Short or Long position – Gain or Loss

Pair wise comparison - Short position Gain or Loss		
Year	Comparison with below Year quarter wise	Significance (P value)
NIFTY	BANKNIFTY	1.000
	NIFTYIT	0.999
	NIFTYINFRA	0.761
	NIFTYMIDCAP	0.939
BANKNIFTY	NIFTY	1.000
	NIFTYIT	1.000
	NIFTYINFRA	0.647
	NIFTYMIDCAP	0.874
NIFTYIT	NIFTY	0.999
	BANKNIFTY	1.000
	NIFTYINFRA	0.611
	NIFTYMIDCAP	0.849
NIFTYINFRA	NIFTY	0.761
	BANKNIFTY	0.647
	NIFTYIT	0.611
	NIFTYMIDCAP	0.994
NIFTYMIDCAP	NIFTY	0.939
	BANKNIFTY	0.874
	NIFTYIT	0.849
	NIFTYINFRA	0.994

It was found that there was no significant difference in Short or long position Gain or Loss between the groups of NIFTY 50, NIFTY MIDCAP, NIFTY INFRA, NIFTY IT and NIFTY BANK

Year wise Comparison – Short or Long position – Gain or Loss

Year wise comparison - Short position Gain or Loss		
Year	Comparison with below Year quarter wise	Significance (P value)
2014	2015(1)	0.024
	2016(2)	0.075
	2017(2)	0.230
	2018(1)	0.036
2015	2014(1)	0.024
	2016(2)	0.624
	2017(1)	0.001
	2018(2)	0.868
2016	2014(2)	0.075
	2015(2)	0.624
	2017(1)	0.003
	2018(2)	0.746
2017	2014(2)	0.230
	2015(1)	0.001
	2016(1)	0.003
	2018(1)	0.001
2018	2014(1)	0.036
	2015(2)	0.868
	2016(2)	0.746
	2017(1)	0.001

It was found that there was significant difference in Short or long position Gain or Loss between the years 2014 with 2015, 2016 and 2018, 2015 with 2017, 2016 with 2017 and 2017 with 2018 for NIFTY 50, NIFTY MIDCAP, NIFTY INFRA, NIFTY IT and NIFTY BANK.

Conclusion.

It was concluded from the analysis that there was significant difference between in Short/Long position gain or loss for NIFTY IT third quarter. There was significant difference in gain/loss for Nifty 50, Nifty Midcap, Nifty IT, Nifty Infra and Nifty bank between the years of 2014 – 2018. The study could further be extended for more years and more index could be included.

References

- (1) *Banikanta Mishra, Sarat Malik & Laltu Pore (2012), "Impact of Increased Derivatives-Trading in India on the Price-Discovery Process", Economic & political Weekly Journal Vol. 52, Issue No. 11.*
- (2) *Babu Jose and Dr. D. Lazar (2011), "Informational Efficiency of Futures Market in India".*
- (3) *Ruchika Gahlot, Saroj K. Datta, Sheeba KAP (2010), "Impact of Derivative Trading On Stock Market Volatility in India: A Study of S&P CNX Nifty", Asian Academy of Management Journal of Accounting And Finance, Vol. 4, No. 2, 43–65.*
- (4) *Vipul (2008), "Mispricing, volume, volatility and open interest: evidence from Indian futures market", Journal of Emerging Market Finance, 7:3,263-292.*
- (5) *Susan Thomas and Ajay Shah (2003), "Equity derivatives in India: The state of the art".*
- (6) *www.managementparadise.com/.../22558-derivatives-market.*
- (7) *https://www.nseindia.com/*
- (8) *http://www.theoptionsguide.com*