



## AN EMPIRICAL STUDY ON THE PERFORMANCE OF NSE INDEX FUTURES AND THEIR UNDERLYING STOCKS DURING 2013-2016

### KEYWORDS

Index futures, Stock prices, NSE, Underlying stocks, Stock market etc

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### ABSTRACT

In this paper, we studied the performance of index futures and their impact on underlying stocks from the 1.Apr. 2013 to 31.Mar 2016, in National stock exchange (NSE), India. We found that there is, the index future and their underlying stocks are significantly positive. The market returns have a significant relationship with stock returns. We have applied Statistical Tools like Mean to calculate Average returns, Standard deviation it is a measure of the values of the variables around its mean, Correlation measures the nature and extends relationship between stock return and index return for a particular point of time and Beta describes the relationship between the stock return and index return. The graph indicates that there is relationship between index returns and stock returns. The study suggests that index futures are extremely useful for hedgers to minimise risk.

### INTRODUCTION

A financial derivative is a strategy that businesses and companies cross the threshold to reduce risks. It is a contract entered by parties that creates a risk and benefit association to those involved. From the word itself, a financial derivative is a derived value. This value comes forth from an underlying asset or index. Parties then enter into a contract to be fulfilled at a certain date.

### Derivative Market in Indian

In India derivatives began in the year 2000 when both NSE and BSE commenced trading in equity derivatives. In June 2000, Index futures became the first type of financial derivative instruments to be launched in the Indian markets followed by index options in June 2001, options in individual stocks in July 2001 and futures in single stock derivatives in November 2001. Since then, equity derivatives have come a long way. New products; expanding list of eligible investors; rising volumes and best of risk management framework for exchange traded derivatives have been the hallmark of the journey of equity derivatives in Indian Market.

### REVIEW OF LITERATURE

Ashutosh Vashistha & Satish Kumar (2010), encompasses in its scope an analysis of historical roots of derivatives trading, types of derivatives, regulation and policy development, trend and growth, future prospects and challenges of derivatives market in india. Shree Bhagwat, Ritesh and Deepak (2012) in their article title "encompasses the impact of global financial crisis on the financial derivatives market in India. Shalini & Raveendra (2014) encompasses the genesis of derivatives trading by tracing its historical development, types, regulation and policy developments, trend & growth, future prospects and challenges of derivative market in India. Manmohan Mall, B.B.Pradhan & B. Rajan Kumar (2011) "Capital Market Efficiency Test" provides the evidence of weak form inefficiency of Indian Spot market and the futures market is relatively efficient from the spot market. Mukharjee, Kedarnath and Mishra (2000) in their working paper series made an effort to investigate the possible lead lag relationship both in terms of return and volatility, among the NIFTY spot index and index futures market in India and also to explore the possible changes (if any) in such relationship around the release of different types of information. Babu Jose and D Lazar (2012) the long term co-integrated relationship between Indian futures and spot market shows that there is a possibility for disequilibrium among the market during short run period the ability of spot and futures market factors to predict the movement of futures market. Y.P.Singh and Megha Agrwal (2009) the impacts of Indian index futures on the index spot markets to understand the nature and strength of relationship between Nifty spot and index and Nifty futures to determine the direction of flow of information between Nifty spot index and Nifty futures and to establish a causal relation-

ship between return of Nifty spot and return of Nifty futures. Brajesh Kumar and Priyanka Singh (2008) the relationship between trading volume and return and dynamic relationship using OLS and VAR modeling approach. Mixed distribution hypothesis also was tested using GARCH model. Their findings indicated evidence of positive contemporaneous correlation between absolute price changes and trading volume in Indian stock markets. Kedar Nath Mukherjee and R.K. Mishra (2004) Multiple Regression and Granger causality tests confirmed that the open interest based predictors are significant in predicting the spot price index in underlying cash markets in both the periods.

### RESEARCH OBJECTIVE

1. To Examine the impact of Index futures on their underlying stocks

### RESEARCH HYPOTHESES

- H-1 - Positive impact of Index futures on their underlying stocks  
H-2 - There is no impact of Index futures on their underlying stocks

### SCOPE OF THE STUDY

The Study is selected from the period 1.April.2013 to 31.March.2016. Number of stocks are selected i.e., three banking scripts from AXIS, ICICI, & HDFC which are taken for study comparing with Nifty index futures. Three years closing prices of the stock from the date of 1.April.2013 to 31.March.2016 and the Nifty index futures closing values for the same period have been taken as to calculation.

### RESEARCH METHODOLOGY

- Sample size is 3 banking stocks selected i.e. Axis Bank, ICICI Bank and HDFC Bank out of 50 Nifty stocks
- Data collection is secondary data collected from NSEindia.com. Respective stock and index futures closing price is taken to consider for calculation.
- The research is designed by using the statistical tools like Mean, Standard deviation, correlation and Beta to calculate stocks, index returns and risk.

**DATA COLLECTION:** This research basically uses the secondary data collected from the closing prices of the stocks and index futures values from the NSE website.

**Table 1: The Performance of index futures return and risk comparing with selected scripts**

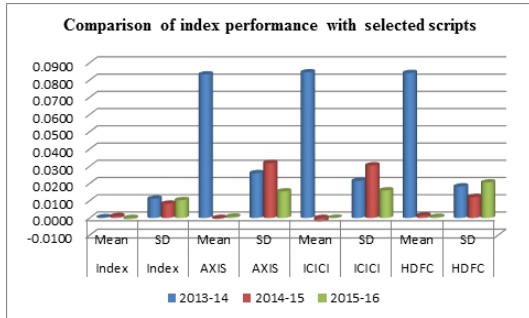
Year	Index	AXIS	AXIS	ICICI	ICICI	HDFC	HDFC
	Mean SD	Mean SD	Mean SD	Mean SD	Mean SD	Mean SD	Mean SD
2013-14	0.0004 0.0111	0.0833 0.0260	0.0845 0.0215	0.0841 0.0183			
2014-15	0.0011 0.0083	-0.0005 0.0318	-0.0021 0.0305	0.0014 0.0122			
2015-16	-0.0007 0.0103	0.0008 0.0154	0.0001 0.0160	0.0006 0.0206			

**INTERPRETATION:**

The above table represents the average return and risk of index and various scripts. In the case of index Mean increased in the year 2014-15 and finally its come down to negative value. The all scripts performance is similar the return has come down in the year 2014-15 and again it increased in the year 2015-16.

In the case of Standard deviation the Index and HDFC follow the same trend it's decreased in the year 2014-15 and again it increased in the year 2015-16. The other stock AXIS and ICICI has increased 2013-14 to 2014-15 and it has come down the year 2015-16.

**Fig.1 - Comparison of Index Performance with Selected Scripts**



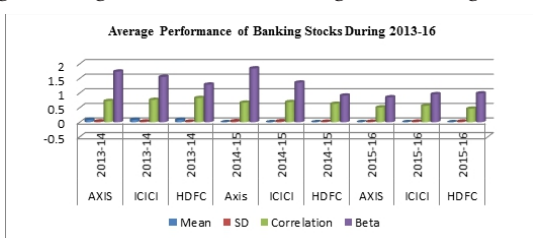
**Table 2: Average Performance of Banking Stocks During 2013-16**

	AXIS 2013-14	ICICI 2013-14	HDFC 2013-14	AXIS 2014-15	ICICI 2014-15	HDFC 2014-15	AXIS 2015-16	ICICI 2015-16	HDFC 2015-16
Mean	0.0833	0.0845	0.0841	-0.0005	-0.0021	0.0014	0.0007	0.0007	0.0006
SD	0.026	0.0215	0.0183	0.0318	0.0305	0.0122	0.0153	0.0159	0.0206
Correlation	0.7243	0.7646	0.8285	0.6681	0.6883	0.6286	0.5059	0.5605	0.4629
Beta	1.7323	1.5488	1.2871	1.8416	1.3564	0.9096	0.8517	0.9573	0.9835

**INTERPRETATION:**

The above table represent the relationship between Index futures and scripts. In the case of correlation all the three scripts shows the positive correlation. In the case of Beta all the three scripts having the high systematic risk its indicating high risk

**Fig.1 – Average Performance of Banking Stocks During 2013-16**



**SUMMARY**

Financial derivatives are a product for managing risk and transfer of risk from one to another person. The derivatives market is useful to find the discovery of prices, volatility of different products and risk management tool in all these aspects leads to growth of derivatives in India and its big contribution to the financial system. Today majority of investors they participating in derivatives market for the various purposes like Hedging, Arbitraging and speculation, this leads to growth of derivatives shown phenomenon development. The derivatives turnover on the NSE has overcome the equity market.

**FINDINGS**

In accordance with the specific objectives of this research work, the main findings are enlisted below

1. To study the banking industry performance with respect to index futures the researcher has taken Axis Bank, ICICI Bank and HDFC Bank as a sample. During the period 2013-14 to 2015-16 its observe that Mean has come down during year 2014-15 for all the three banks and again picked up in year 2015-16. The SD of the scripts has continuously come down in the case of all the three banks and it is also observe that the correlation is Highly positive. However in the case of Beta the three banks taken for the study have shown three trends.

2. To study the Hypothesis, the Alternative hypothesis is positive it shows the impact of index futures on their underlying scripts is positive. This study proves that there is relationship between index and scripts having the significantly positive. The Null hypothesis is negative there is no significance relationship.

**CONCLUSION**

Finally I conclude that Derivatives market shown extreme growth in past three years due to high liquidity, Price discovery, risk management and higher profitability with lower investment. This study also represents the index futures have the positive relationship with their underlying stock

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