

## **An Analysis of the performance of popular stocks in Cash market and Futures Market**

**\*Dr. Parminder Bajaj**

**\*\*Ms. Sugandha Sharma**

**\*\*\*Ms. Pooja Kalra**

\*Associate Professor, Jagan Institute of Mgt Studies, New Delhi

\*\*Assistant Professor, Jagan Institute of Mgt Studies, New Delhi

\*\*\*Assistant Professor, Rukmini Devi Instt. Of Advanced Studies, New Delhi

### **Abstract**

The introduction of derivatives segment from the early 2000s onwards has led both to interactions between the spot and futures markets, and to an interest by regulators in controlling any possible harmful influences of this new trading segment. The Individual Stock Futures (ISF) segment is of phenomenal success on Indian bourses and NSE is consistently ranked number one in world ISF segment, even in the absence of strong stock lending mechanism. It is expected that the futures prices can reflect additional information, over and above that already reflected in the spot price, given the leverage benefits and so can serve as a leading indicator for the spot price. The majority of prior studies on Price Discovery and Arbitrage examine the temporal relationship between a futures and its underlying cash market. The basis for these studies is that in perfectly efficient futures and cash markets, informed investors are indifferent between trading in either market, and new information is reflected in both simultaneously. Accordingly, the contemporaneous returns of the two markets would be perfectly correlated, whereas non-contemporaneous returns would be uncorrelated. The majority of empirical evidence, however, has documented some mis-pricing between the futures and cash markets, with the consensus view that futures generally lead cash markets.

In this paper, we will find the impact of movement in cash market and future market on the performance of the stocks of some well renowned companies. Within the arbitrage bounds, the change in basis can affect prices in both markets and a significant feedback relationship between futures and cash markets is noted. Besides, price discovery is not evident in the futures markets due to almost the same speed of information flows in both markets. While outside the arbitrage bounds, the influence of the change in basis on both futures and cash indexes is statistically insignificant and the change in the futures price leads the cash price, thereby indicating notably the function of price discovery in the futures market.

**Key words**-Leverage, Price Discovery, Arbitrage, future and cash indexes and Indian Stock Futures

### **I. Introduction**

Understanding the influence of one market on the other and role of each market segment in price discovery is the central question in market microstructure design and of utmost importance to regulators and academia. Price discovery is an important function of the exchange and it hints at where do informed traders trade. More precisely, following Schreiber and Schwartz (1986), Price discovery is the process by which markets attempt to find their fair prices. If the markets are efficient and frictionless, then price discovery should be instantaneous and contemporaneous. In practice, between spot and derivatives segments or across different trading venues of the same stock, price discovery takes place in one

market and the other markets follow it. The market leader is the one, which provides necessary trading platform or environment to transform the information into prices. All else equal, the price discovery function depends broadly on three factors, viz. trading costs, liquidity and leverage benefits. In essence, the traders assess the direct trade-off of the benefits of leverage in the futures market with the benefits of lower costs of trading and higher liquidity of the spot market. The result of this trade-off is an empirical question that we address here.

Derivative trading started in India in 2000. Since then the average daily derivative trading volume in NSE increased from 20 Million rupees in June 2000 to around 480 billion rupees in August 2007. The trading volume of derivative segment has increased manifold over the years. Though both futures and options were introduced around the same time the size of futures market is at least four times that of the options market. Within the futures market, the Individual Stock Futures (hereafter, ISF) segment is of phenomenal success on Indian bourses and NSE is consistently ranked number one in world ISF segment, even in the absence of strong stock lending mechanism. As of July 2007 NSE ranked number one in the world based on the total number of 18.8 million individual stock futures contracts traded. The next best exchange EUREX has 3.2 million ISF contracts traded<sup>3</sup>.

Though derivatives trading started on Indian bourses in 2000, very few studies looked at the dynamics between spot and derivatives segments. The few existing studies concentrated on providing the direction as to which markets leads or lag the other market. The major limitation of these studies is that they won't look at the differences in liquidity, leverage and transaction costs in spot and derivative segments and do not look at the overall nature and extent of price discovery provided by each market segment. Spot and derivative markets are strongly linked to each other by complex arbitrage relationships, which ensure long run price tendency towards an equilibrium constraint. The price series cannot diverge and instead follow paths that cannot drift too far apart. Hence, we expect that the time paths of such variables are responsive to the previous period's pricing error, in that the variables adjust to correct for deviations from the long run equilibrium path. Using error correction model and Hasbrouck information shares approach this paper attempts to compute the 'extent' of price discovery in spot and futures market.

The paper contributes to the growing literature of linkages between spot and derivatives and to the author's knowledge, is the first paper to examine the relative information shares of spot and futures markets at the individual stock level. The rest of the paper is organized as follows: Section II discusses the literature on price impact in spot and futures market. Third section presents the data used in the study and fourth section lays down the methodology used in the paper. Last section reports the results and concludes the paper.

### **Literature Survey**

The effect of introduction of derivatives on the volatility of the spot markets and in turn, its role in stabilising or destabilizing within the cash markets has remained an active topic of analytic and empirical interest. Questions pertaining to the impact of derivative trading on cash market volatility have been empirically addressed in two ways: by comparing cash market volatilities during the pre-and post-futures/ options trading eras and second, by evaluating the impact of options and futures trading (generally proxied by trading volume) on the behaviour of cash markets. The literature is, however, inconclusive on whether introduction of derivative products lead to an increase or decrease in the spot market volatility.

One school of thought argues that the introduction of futures trading increases the spot market volatility and thereby, destabilises the market (Cox 1976; Figlewski 1981; Stein, 1987). Others argue that the introduction of futures actually reduces the spot market volatility and thereby, stabilises the market (Powers, 1970; Schwarz and Laatsch, 1991 *etc.*). The rationale and findings of these two alternative schools are discussed in detail in this section.

The advocates of the first school perceive derivatives market as a market for speculators. Traders with very little or no cash or shares can participate in the derivatives market, which is characterised by high risk. Thus, it is argued that the participation of speculative traders in systems, which allow high degrees of leverage, lowers the quality of information in the market. These uninformed traders could play a destabilising role in cash markets (Chatrath, Ramchander and Song, 1995). However, according to another viewpoint, speculation could also be viewed as a process, which evens out price fluctuations.

The debate about speculators and the impact of futures on spot price volatility suggests that increased volatility is undesirable. This is, however, misleading as it fails to recognise the link between the information and the volatility (Antoniou and Holmes, 1995). Prices depend on the information currently available in the market. Futures trading can alter the available information for two reasons: first, futures trading attract additional traders in the market; second, as transaction costs in the futures market are lower than those in the spot market, new information may be transmitted to the futures market more quickly. Thus, future markets provide an additional route by which information can be transmitted to the spot markets and therefore, increased spot market volatility may simply be a consequence of the more frequent arrival and more rapid processing of information.

On the other hand, arguments suggesting that the future and option markets have become important mediums of price discovery in cash markets are equally strong. Several authors have argued that trading in these products improve the overall market depth, enhance market efficiency, increase market liquidity, reduce informational asymmetries and compress cash market volatility (Kumar, Sarin and Shastri, 1995; Antoniou, Holmes and Priestley, 1998).

It has been argued that the introduction of derivatives would cause some of the informed and speculative trading to shift from the underlying cash market to derivative market given that these investors view derivatives as superior investment instruments. This superiority stems from their inherent leverage and lower transaction costs. The migration of informed traders would reduce the information asymmetry problem faced by market makers resulting in an improvement in liquidity in the underlying cash market. In addition, it could also be argued that the migration of speculators would cause a decrease in the volatility of the underlying cash market by reducing the amount of noise trading. This hypothesis would also suggest that the advent of derivatives trading would be accompanied by a decrease in trading volume in the underlying security.

In a recent study, Bologna and Cavallo (2002) investigated the stock market volatility in the post derivative period for the Italian stock exchange using Generalised Autoregressive Conditional Heteroscedasticity (GARCH) class of models. To eliminate the effect of factors other than stock index futures (*i.e.*, the macroeconomic factors) determining the changes in volatility in the post derivative period, the GARCH model was estimated after adjusting the stock return equation for market factors, proxied by the returns on an index (namely Dax index) on which derivative products are not introduced. This study shows that unlike the findings by Antoniou and Holmes (1995) for the London Stock Exchange (LSE), the

introduction of index future, *per se*, has actually reduced the stock price volatility. Bologna and Covalla also found that in the post Index-future period the importance of ‘present news’ has gone up in comparison to the ‘old news’ in determining the stock price volatility.

A few studies have been undertaken to evaluate the effect of introduction of derivative products on volatility of Indian spot markets. These studies have mainly concentrated on the NSE, and the evidence is inconclusive in this regard. While Thenmozhi (2002) showed that the inception of futures trading has reduced the volatility of spot index returns due to increased information flow. According to Shenbagaraman (2003), the introduction of derivative products did not have any significant impact on market volatility in India. Raju and Karande (2003) also reported a decline in volatility of S&P CNX Nifty after the introduction of index futures.

In the present study, following Bologna and Cavallo (2002) a GARCH model has been used to empirically evaluate the effects on volatility of the Indian spot market and to see that what extent the change (if any) could be attributed to the introduction of index futures. We use BSE-200 and Nifty Junior as surrogate indices to capture and study the market wide factors contributing to the changes in spot market volatility. This gives a better idea as to: whether the introduction of index futures in itself caused a decline in the volatility of spot market or the overall market wide volatility has decreased, and thus, causing a decrease in volatility of indices on which derivative products have been introduced. Finally, the studies in the Indian context have evaluated the trends in NSE and not on the Stock Exchange, Mumbai (BSE) for the reason that the turnover in NSE captures an overwhelmingly large part of the derivatives market. However, since the key issue addressed here is the volatility of the cash market as affected or unaffected by the derivative market, the importance of evaluating the trends in BSE as well was felt and the empirical analysis was carried out likewise.

#### **Objectives of the study-**

- To study the functioning of the Cash and Future Market
- To study the concept of price discovery
- To study the impact of movements in cash and future market on the price of stock.

#### **Research Methodology-**

**Our paper includes analysis of the following stocks (Cash market and Futures Market) and ETF during financial year 2013-14:**

- 1. ACC CEMENT Ltd.**
- 2. BHEL**
- 3. ICICI BANK**
- 4. CIPLA Ltd.**
- 5. WIPRO**
- 6. EXCHANGE TRADED FUNDS**

#### **ACC CEMENT Ltd.**

ACC Ltd. (formerly the Associated Cement Companies Ltd.) is one of the largest producers of cement in India. In 1936, ten cement companies belonging to Tatas, Khataus , Killick Nixon and F.E. Dinshaw groups merged to form a single entity the

Associated Cement Companies Ltd. Its registered office is called Cement House. The management control of company was taken over by Swiss cement major Holcim in 2004. On 1<sup>st</sup> September 2006, the name of the Associated Cement Companies was changed to ACC Ltd. It is the only company to get super brand status in India.

ACC limited has a countrywide network of factories and marketing offices. It has been a pioneer and trend setter in cement and concrete technology. It is among the first companies in India to include commitment to environmental protection as a corporate objective and has won accolades for environment friendly measures taken at its plants and mines. It has also been felicitated for its act of good corporate citizenship.

<b>Market Cap (Rs Cr)</b>	<b>26,845.84</b>
<b>P/E</b>	25.40
<b>Book Value (Rs)</b>	392.81
<b>Dividend%</b>	300.00%
<b>Market Lot</b>	1
<b>Industry P/E</b>	15.89
<b>EPS</b>	56.23
<b>Dividend Yield%</b>	2.10
<b>Face Value</b>	10.00

Cash Market

Months	Date	High Price	Low Price	Close Price	Volume	No. Of stocks	Returns per share	Net returns
April	01-04-2013	1175.00	1150.55	1160.90	203695.00	172		
April	30-04-2013	1252.00	1205.00	1233.30	348829.00	172	72.40	12452.80
May	31-05-2013	1243.95	1208.00	1218.75	241880.00	172	57.85	9950.20
June	28-06-2013	1230.00	1205.00	1222.65	214308.00	172	61.75	10621.00
July	31-07-2013	1189.90	1140.05	1173.55	299123.00	172	12.65	2175.80
August	30-08-2013	975.50	933.00	964.10	784916.00	172	-196.80	-33849.60
September	30-09-2013	1117.75	1085.70	1111.95	195561.00	172	-48.95	-8419.40
October	31-10-2013	1146.95	1127.10	1134.85	568174.00	172	-26.05	-4480.60
November	29-11-2013	1099.95	1067.00	1096.60	449425.00	172	-64.30	-11059.60
December	31-12-2013	1111.85	1095.30	1108.75	152489.00	172	-52.15	-8969.80
January	31-01-2014	1016.70	982.00	1010.85	313053.00	172	-150.05	-25808.60
February	28-02-2014	1110.00	1085.00	1104.90	316402.00	172	-56.00	-9632.00
March	31-03-2014	1407.00	1361.00	1399.55	320327.00	172	238.65	41047.80

Futures Market

Months	Date	High Price	Low Price	Close Price	Volume	No. Of stocks	Returns on share <sup>1</sup>	Net returns
April	01-04-2013	1180.00	1158.25	1168.05	1302.00	171		
April	30-04-2013	1255.00	1211.25	1240.85	1804.00	171	72.80	12448.80
May	31-05-2013	1249.00	1215.20	1225.70	1516.00	171	57.65	9858.15
June	28-06-2013	1295.50	1203.75	1232.00	1645.00	171	63.95	10935.45
July	31-07-2013	1195.00	1147.00	1180.35	2788.00	171	12.30	2103.30
August	30-08-2013	978.70	938.00	967.90	2381.00	171	-200.15	-34225.65
September	30-09-2013	1130.00	1095.25	1125.60	2027.00	171	-42.45	-7258.95
October	31-10-2013	1147.70	1128.00	1136.00	3556.00	171	-32.05	-5480.55
November	29-11-2013	1109.85	1078.35	1107.40	1577.00	171	-60.65	-10371.15
December	31-12-2013	1180.00	1106.20	1116.95	1431.00	171	-51.10	-8738.10
January	31-01-2014	1014.80	989.45	1012.10	1797.00	171	-155.95	-26667.45
February	28-02-2014	1092.60	1072.15	1087.50	2185.00	171	-80.55	-13774.05
March	31-03-2014	1406.00	1368.00	1398.60	2564.00	171	230.55	39424.05

## Analysis

Final dividend of 190% was declared on 06/02/2014 which led to an increase in the share price in the month of March. Share price of ACC cement fell continuously between 2013-2014. The reasons behind this are as follows:

- ACC Ltd had to pay 1% of their annual net sales to their Swiss technology partner and parent company Holcim Ltd. It was estimated that higher royalty would reduce the profits of ACC by 3%-4% in the year 2013. Improving prospects and performance have led to stock prices surging in the past one year, returning over 25% to the investors. Therefore, rise in stock prices in 2013 as compared to the prices in 2012, hinges more on improvement in cement markets even as the uncertainty posed by the royalty hike ended with a better than expected outcome.
- Shares of competitors of ACC Ltd. like Ambuja Cement outperformed ACC given that its geographic distribution was better poised to reap better realizations. ACC's market share has been dropping over the years. Currently it stands at 12.2% pan-India. ACC is market leader only in Karnataka & Punjab.

According to report published in Financial Express, the construction activity had slowed down during December 2013, which led to Indian cement market decline.

## BHEL

Bharat Heavy Electricals Ltd. (BHEL) owned by Government of India is a power plant equipment manufacturer. It operates as engineering and manufacturing company based in New Delhi. BHEL was established in 1964, ushering in the indigenous Heavy Electrical Equipment industry in India. The company has been earning profits continuously since 1971-72 and paying dividends since 1976-77. It is one of the five Maharatna Companies declared by Govt. of India and celebrating 50 years (1964-2014) of engineering excellence and Public Sector Undertakings (PSUs) of India clubbed under the esteemed "Maharatna" status, which it received in February 2013.

BHEL has a share of 57% in India's total installed generating capacity contributing 69% (approx.) to the total power generated from utility sets (excluding non-conventional capacity) as of March 31, 2013. The company has been exporting its power and industry segment products and services for over 40 years. BHEL's global references are spread across 76 countries. The cumulative overseas installed capacity of BHEL manufactured power plants exceeds 9,000 MW across 21 countries including Malaysia, Oman, Iraq, the UAE, Bhutan, Egypt and New Zealand. Its physical exports range from turnkey projects to after sales services.

<b>Market Cap (Rs Cr)</b>	<b>56,013.33</b>
<b>P/E</b>	11.54
<b>Book Value (Rs)</b>	124.38
<b>Dividend%</b>	270.00%
<b>Market Lot</b>	1
<b>Industry P/E</b>	6.59
<b>EPS</b>	19.83
<b>Dividend Yield%</b>	2.36%
<b>Face Value</b>	2.00



Cash Market

Months	Date	High Price	Low Price	Close Price	Volume	No. Of stocks	Returns on 1 share	Net returns
April	01-04-2013	184.40	178.80	182.50	3082804.00	1,096		
April	30-04-2013	194.30	187.60	192.75	2610363.00	1,096	10.25	11234.00
May	31-05-2013	205.45	199.20	200.55	3255227.00	1,096	18.05	19782.80
June	28-06-2013	175.00	164.50	174.25	4969765.00	1,096	-8.25	-9042.00
July	31-07-2013	159.30	148.25	158.30	3482360.00	1,096	-24.20	-26523.20
August	30-08-2013	120.75	115.65	119.00	7432063.00	1,096	-63.50	-69596.00
September	30-09-2013	140.85	135.40	137.40	6280244.00	1,096	-45.10	-49429.60
October	31-10-2013	141.90	137.80	141.10	5953156.00	1,096	-41.40	-45374.40
November	29-11-2013	158.65	151.90	156.35	8348695.00	1,096	-26.15	-28660.40
December	31-12-2013	180.95	175.85	176.90	4505274.00	1,096	-5.60	-6137.60
January	31-01-2014	173.50	168.35	172.75	3809752.00	1,096	-9.75	-10686.00
February	28-02-2014	168.90	161.20	167.75	4944033.00	1,096	-14.75	-16166.00
March	31-03-2014	201.80	194.65	196.05	3176462.00	1,096	13.55	14850.80

Futures market

Months	Date	High Price	Low Price	Close Price	Volume	No. Of stocks	Returns on share <sup>1</sup>	Net returns
April	01-04-2013	183.60	178.50	182.10	6567.00	1,098		
April	30-04-2013	193.45	187.45	192.40	4563.00	1,098	10.30	11309.40
May	31-05-2013	204.75	198.35	199.60	4461.00	1,098	17.50	19215.00
June	28-06-2013	174.00	165.15	173.45	4488.00	1,098	-8.65	-9497.70
July	31-07-2013	160.20	149.40	159.40	3743.00	1,098	-22.70	-24924.60
August	30-08-2013	118.50	113.00	115.45	5873.00	1,098	-65.50	-71919.00
September	30-09-2013	139.40	134.50	137.20	6934.00	1,098	-44.90	-49300.20
October	31-10-2013	141.45	137.80	141.05	9193.00	1,098	-41.05	-45072.90
November	29-11-2013	157.85	149.45	155.05	12123.00	1,098	-27.05	-29700.90
December	31-12-2013	173.20	169.30	169.90	7120.00	1,098	-12.20	-13395.60
January	31-01-2014	163.50	157.50	161.55	3461.00	1,098	-20.55	-22563.90
February	28-02-2014	162.30	156.50	161.55	4939.00	1,098	-20.55	-22563.90
March	31-03-2014	194.70	189.80	191.15	4253.00	1,098	9.05	9936.90

**Analysis**

The reasons for decline in the price of BHEL are as follows:

- Bharat Heavy Electricals' (BHEL) provisional 4QFY13 profit beat consensus estimate by 10% due to sudden pick-up in pace of execution. However, analysts say it's too early to turn positive on the counter.

- Bharat Heavy Electricals Ltd (BHEL), India’s largest power equipment manufacturer, reported a 51 per cent drop in net profit for 2013-14, the second consecutive decline in the company’s annual profit. The company reported a provisional net profit of Rs 3,228 crore, against Rs 6,614 crore in 2012-13.
- BHEL has been grappling with about Rs 40,000 crore of payments due from customers. The company has, however, said the rising trend of debtors has been arrested, without giving details.

The slowdown in announcements of new power projects dragged fresh order inflow down 11 per cent to Rs 28,007 crore from Rs 31,528 crore in 2012-13.

### ICICI Bank

ICICI Bank was established by the Industrial Credit and Investment Corporation of India (ICICI), an Indian financial institution, as a wholly owned subsidiary in 1955. The parent company was formed in 1955 as a joint-venture of the World Bank, India's public-sector banks and public-sector insurance companies to provide project financing to Indian industry. The bank was initially known as the Industrial Credit and Investment Corporation of India Bank, before it changed its name to the abbreviated ICICI Bank. The parent company was later merged with the bank. ICICI Bank launched internet banking operations in 1998. ICICI's shareholding in ICICI Bank was reduced to 46 percent, through a public offering of shares in India in 1998, followed by an equity offering in the form of American Depositary Receipts on the NYSE in 2000. ICICI Bank acquired the Bank of Madura Limited in an all-stock deal in 2001 and sold additional stakes to institutional investors during 2001-02.

ICICI Bank is an Indian multinational banking and financial services company headquartered in Mumbai. It is the second largest bank in India by assets and by market capitalization, as of 2014. It offers a wide range of banking products and financial services to corporate and retail customers through a variety of delivery channels and through its specialized subsidiaries in the areas of investment banking, life, non-life insurance, venture capital and asset management. The Bank has a network of 3,539 branches and 11,162 ATMs in India, and has a presence in 19 countries.

<b>Market Cap (Rs Cr)</b>	<b>1,70,768.44</b>
<b>P/E</b>	16.75
<b>Book Value (Rs)</b>	632.96
<b>Dividend%</b>	230.00%
<b>Market Lot</b>	1
<b>Industry P/E</b>	17.91
<b>EPS</b>	88.12
<b>Dividend Yield%</b>	1.56%
<b>Face Value</b>	10.00

Cash Market

Months	Date	High Price	Low Price	Close Price	Volume	No. Of stocks	Returns on 1 share	Net returns
April	01-04-2013	1060.00	1038.50	1051.55	2076153.00	190		
April	30-04-2013	1172.00	1142.10	1163.65	2970462.00	190	112.10	21299.00
May	31-05-2013	1188.80	1148.00	1154.45	3307527.00	190	102.90	19551.00
June	28-06-2013	1076.15	1044.00	1070.75	4841181.00	190	19.20	3648.00
July	31-07-2013	925.00	892.10	909.05	7774893.00	190	-142.50	-27075.00
August	30-08-2013	827.40	796.50	803.75	14797397.00	190	-247.80	-47082.00
September	30-09-2013	916.50	879.20	883.65	3436423.00	190	-167.90	-31901.00
October	31-10-2013	1130.00	1087.65	1120.95	5649351.00	190	69.40	13186.00
November	29-11-2013	1072.95	1044.00	1068.65	2343899.00	190	17.10	3249.00
December	31-12-2013	1108.80	1094.05	1098.75	792115.00	190	47.20	8968.00
January	31-01-2014	993.40	971.45	987.70	2633542.00	190	-63.85	-12131.50
February	28-02-2014	1048.85	1031.00	1043.85	2822086.00	190	-7.70	-1463.00
March	31-03-2014	554.10	538.50	543.20	266235.00	190	-508.35	-96586.50

Futures Market

Months	Date	High Price	Low Price	Close Price	Volume	No. Of stocks	Returns on share <sup>1</sup>	Net returns
April	01-04-2013	1064.96	1045.00	1057.70	11017.00	189		
April	30-04-2013	1156.90	1128.15	1148.50	17043.00	189	90.80	17161.20
May	31-05-2013	1194.00	1155.40	1161.70	13877.00	189	104.00	19656.00
June	28-06-2013	1079.75	1050.00	1075.35	18334.00	189	17.65	3335.85
July	31-07-2013	929.95	900.65	919.05	43740.00	189	-138.65	-26204.85
August	30-08-2013	834.50	800.05	811.65	49917.00	189	-246.05	-46503.45
September	30-09-2013	924.55	889.10	893.50	19468.00	189	-164.20	-31033.80
October	31-10-2013	1123.00	1087.20	1116.25	26505.00	189	58.55	11065.95
November	29-11-2013	1084.00	1055.55	1079.50	14608.00	189	21.80	4120.20
December	31-12-2013	1117.20	1103.70	1109.05	7718.00	189	51.35	9705.15
January	31-01-2014	999.30	979.20	994.85	17794.00	189	-62.85	-11878.65
February	28-02-2014	1057.55	1037.40	1050.60	14256.00	189	-7.10	-1341.90
March	31-03-2014	1279.00	1250.75	1254.80	15519.00	189	197.10	37251.90

**Analysis**

ICICI Bank, which was the top held stock during January 2013- March 2013, dropped to the second place at the end of the quarter July 2013-September 2013. The stock price fell by more than 17% during the quarter, and at the same time the total number of shares held in portfolios of equity funds dropped from 7.69 crores to 6.87 crores at the end of this quarter. The reason for this decline is increase in provisioning for non-performing assets or NPAs. It had been a mixed bag for banks in the second quarter (July-September) with public sector banks lagging their private sector counterparts. This was due to increase in provisioning for non-

performing assets or NPAs ICICI Bank's net profit rose 20.24% to Rs 2,352.05 crore on the back of 7.54% rise in income to Rs 12,979.75 crore. ICICI Bank's net NPAs were Rs 2,707 crore on 30 September 2013, compared to Rs 2,472 crore on 30 June 2013. Stocks of banks, both private and public, however, faced a lot of pressure.

## ICICI Bank



	Jul-Sep 2013	July-Sep 2012	Change
Net Profit (Rs Cr)	2352.05	1956.11	20.24%
Net NPAs (%)	0.85	0.78	-
NIMs (%)	3.31	3.00	-

## CIPLA Ltd.

Cipla Limited is a pharmaceutical company based in Mumbai, India. Cipla makes drugs to treat cardiovascular disease, arthritis, diabetes, weight control, depression and many other health conditions. It was founded by Dr. Khwaja Abdul Hamied as 'The Chemical, Industrial & Pharmaceutical Laboratories' in 1935 in Mumbai.

On 31 March 2013, its market capitalisation was INR 305 billion (US\$ 5.6 billion), making it India's 41st largest publicly traded company by market value. Cipla has 34 manufacturing units in 8 locations across India and has presence in 170 countries. Exports accounted for 52% of its revenue for FY 2012-13. It cooperates with other enterprises in areas such as consulting, commissioning, engineering, project appraisal, quality control, know-how transfer, support, and plant supply.

<b>Market Cap (Rs Cr)</b>	<b>31,558.82</b>
<b>P/E</b>	22.88
<b>Book Value (Rs)</b>	110.47
<b>Dividend%</b>	100%
<b>Market Lot</b>	1
<b>Industry P/E</b>	24.39
<b>EPS</b>	17.18
<b>Dividend Yield%</b>	0.51%
<b>Face Value</b>	2.00

Cash Market

Months	Date	High Price	Low Price	Close Price	Volume	No. Of stocks	Returns on 1 share	Net returns
April	01-04-2013	390.00	379.65	384.00	1254854.00	521		
April	30-04-2013	412.60	404.20	405.30	964246.00	521	21.30	11097.30
May	31-05-2013	384.00	368.00	370.55	2647020.00	521	-13.45	-7007.45
June	28-06-2013	393.50	385.50	391.95	1568530.00	521	7.95	4141.95
July	31-07-2013	407.50	397.55	400.30	2371558.00	521	16.30	8492.30
August	30-08-2013	419.70	393.00	416.95	2873899.00	521	32.95	17166.95
September	30-09-2013	438.50	430.90	432.50	686309.00	521	48.50	25268.50
October	31-10-2013	438.50	430.90	432.50	686309.00	521	48.50	25268.50
November	29-11-2013	392.75	382.00	391.25	1713523.00	521	7.25	3777.25
December	31-12-2013	404.35	399.40	400.80	550785.00	521	16.80	8752.80
January	31-01-2014	419.00	408.55	410.60	529559.00	521	26.60	13858.60
February	28-02-2014	385.00	374.50	384.30	2480770.00	521	0.30	156.30
March	31-03-2014	389.75	381.80	382.80	950977.00	521	-1.20	-625.20

Futures Market

Months	Date	High Price	Low Price	Close Price	Volume	No. Of stocks	Returns on share <sup>1</sup>	Net returns
April	01-04-2013	392.2	381.50	387.35	2757.00	516		
April	30-04-2013	414.55	406.45	407.45	1438.00	516	20.10	10371.60
May	31-05-2013	385.65	370.45	373.05	3070.00	516	-14.30	-7378.80
June	28-06-2013	394.20	386.80	393.25	1806.00	516	5.90	3044.40
July	31-07-2013	408.35	399.55	402.95	2088.00	516	15.60	8049.60
August	30-08-2013	420.90	396.15	418.60	5227.00	516	31.25	16125.00
September	30-09-2013	443.90	435.20	437.90	1410.00	516	50.55	26083.80
October	31-10-2013	420.60	412.10	413.00	3698.00	516	25.65	13235.40
November	29-11-2013	396.60	385.15	394.60	5909.00	516	7.25	3741.00
December	31-12-2013	407.75	403.00	404.45	1550.00	516	17.10	8823.60
January	31-01-2014	421.75	412.00	413.70	2527.00	516	26.35	13596.60
February	28-02-2014	385.95	376.50	385.30	7919.00	516	-2.05	-1057.80
March	31-03-2014	391.60	384.80	388.40	4640.00	516	1.05	541.80

**Analysis**

The reason for fluctuation on Cipla share prices from 405.30 on 30<sup>th</sup> April, 2013 to 370 on 31<sup>st</sup> May, 2013 as according to an article in Economic Times on May 17, 2013, shares of pharmaceuticals companies were down on profit booking after the Department of Pharmaceuticals passed order on price control of drugs which would result in cheaper medicines for patients. The new prices were made effective from 1 July 2013.

The new pharmaceutical policy raised uncertainties regarding pricing of drugs in India. As per the new recommendations, the National List of Essential Medicines (NLEM) will include 348 drugs and their price will be determined by taking the average selling price of all brands of that drug having market share equal to or greater than 1 %. There were only 74 drugs that came under price control and



many of them were not being used. The new pricing policy resulted in about 30 % – 35 % of the total pharmaceutical market coming under price control. Before the new policy, about 40 of Cipla's basket of over 1000 products were under price control and this increased to about 120 products under the proposed new regime. The new policy will impact most of the Indian pharmaceutical companies including some large Indian companies like Ranbaxy, Cipla, Lupin and Cadila who are expected to have an earnings impact of 5 % – 10 %. Any adverse move towards increasing the scope of price control could have a negative impact on earnings thereby affecting the share prices of these companies.

## WIPRO

The company was incorporated on 29 December 1945, in Mumbai by Mohamed Premji as 'Western India Products Limited', later abbreviated to 'Wipro'. It was initially set up as a manufacturer of vegetable and refined oils in Amalner, district Jalgaon, Maharashtra, under the trade names of Kisan, Sunflower and Camel. The company logo still contains a sunflower to reflect products of the original business. Wipro Limited (formerly Western India Products Limited) is a multinational IT consulting and System Integration Services Company headquartered in Bangalore, Karnataka, India. To focus on core IT Business, it demerged its non-IT businesses into a separate company named Wipro Enterprises Limited with effect from 31 March 2013. The demerged company offers consumer care, lighting, healthcare and infrastructure engineering and contributed to approx. 10% of the revenues of Wipro Limited in previous financial year.

As of March 2014, the company has 146,000 employees servicing over 900 large enterprise corporations with a presence in 61 countries. On 31 March 2014, its market capitalisation was approximately ₹ 1.27 trillion (\$20.8 billion), making it one of India's largest publicly traded company. Azim Premji is a major shareholder in Wipro with over 50% of shareholding.

<b>Market Cap (Rs Cr)</b>	<b>1,24,053.56</b>
<b>P/E</b>	16.94
<b>Book Value (Rs)</b>	98.26
<b>Dividend%</b>	350.00%
<b>Market Lot</b>	1
<b>Industry P/E</b>	28.89
<b>EPS</b>	29.69
<b>Dividend Yield%</b>	1.39%
<b>Face Value</b>	2.00

**Cash Market**

Months	Date	High Price	Low Price	Close Price	Volume	No. Of stocks	Returns on 1 share	Net returns
April	01-04-2013	441.75	428.10	431.00	875529.00	464		
April	30-04-2013	350.00	339.25	348.35	1534689.00	464	-82.65	-38349.60
May	31-05-2013	339.85	314.85	327.65	2724191.00	464	-103.35	-47954.40
June	28-06-2013	352.00	341.00	349.00	1905374.00	464	-82.00	-38048.00
July	31-07-2013	441.00	420.00	438.00	3612568.00	464	7.00	3248.00
August	30-08-2013	495.00	468.55	483.60	10846547.00	464	52.60	24406.40
September	30-09-2013	484.90	470.10	473.05	1521460.00	464	42.05	19511.20
October	31-10-2013	485.85	475.00	477.70	3774672.00	464	46.70	21668.80
November	29-11-2013	476.75	469.90	470.80	1750008.00	464	39.80	18467.20
December	31-12-2013	561.50	549.25	559.20	704304.00	464	128.20	59484.80
January	31-01-2014	579.65	569.80	575.05	1046685.00	464	144.05	66839.20
February	28-02-2014	605.00	589.50	597.25	1820677.00	464	166.25	77140.00
March	31-03-2014	554.10	538.50	543.20	266235.00	464	112.20	52060.80

**Futures Market**

Months	Date	High Price	Low Price	Close Price	Volume	No. Of stocks	Returns on share <sup>1</sup>	Net returns
April	01-04-2013	444.20	431.60	434.05	1048.00	461		
April	30-04-2013	349.90	340.10	349.00	3262.00	461	-85.05	-39208.05
May	31-05-2013	338.95	342.90	336.00	4617.00	461	-98.05	-45201.05
June	28-06-2013	351.80	342.20	349.60	1586.00	461	-84.45	-38931.45
July	31-07-2013	442.90	422.05	421.20	6289.00	461	-12.85	-5923.85
August	30-08-2013	498.85	473.00	487.25	14580.00	461	53.20	24525.20
September	30-09-2013	489.15	476.00	479.10	4578.00	461	45.05	20768.05
October	31-10-2013	485.90	475.30	477.70	8758.00	461	43.65	20122.65
November	29-11-2013	480.65	475.00	475.50	3068.00	461	41.45	19108.45
December	31-12-2013	562.75	550.15	559.70	3378.00	461	125.65	57924.65
January	31-01-2014	583.50	573.35	582.80	3119.00	461	148.75	68573.75
February	28-02-2014	608.80	594.20	600.90	4075.00	461	166.85	76917.85
March	31-03-2014	556.75	542.00	547.30	5566.00	461	113.25	52208.25

**Analysis**

- According to NDTV Profit, the stock price of IT services company Wipro fell as much as 11.25% after the company announced weaker-than-expected revenue, including a possible decline in revenue for the first quarter i.e. June quarter of the

financial year 2013-2014. “Wipro’s weak results imply growth in Indian IT will be polarised in FY14,” Goldman Sachs said.

- As compared to its peers, such as TCS and Infosys, Wipro had the worst sales growth in the financial year ended March 2013. For Infosys, FY 13 revenues grew 19.6% and market leader TCS had an impressive 29 % growth while Wipro had 16% increase.

- Wipro Ltd share prices fell by 12.2 per cent to close at Rs 393.8 per share on the first day of the split of Wipro Ltd into Wipro's IT business and Wipro Enterprises (the non-IT business) became effective. The fall in the share price that led to a decline in its market cap by Rs 13,476 crore to Rs 96,987 crore on Tuesday is a result of the stocks of Wipro Ltd getting devoid of the non-IT business of the group including the FMCG business.

- **Exchange Traded Funds**

- An exchange-traded fund (ETF) is an investment fund traded on stock exchanges, much like stocks or equity. An ETF holds assets such as commodities, stocks, or bonds, and trades close to its net asset value over the course of the trading day. Most ETFs track an index, such as a stock index or bond index. ETFs may be attractive as investments because of their low costs, tax efficiency, and stock-like features. ETFs are the most popular type of exchange-traded product. Below 5 ETFs are taken and returns on them are calculated over a period of one year for an investor who invests 10,00,000 in it.

- NIFTY BEES

Country of Investment	India
Taxation Treatment	Equity

Benchmark Index	CNX Nifty Index
-----------------	-----------------

Exchange Listed	National Stock Exchange
-----------------	-------------------------

Fund Inception Date	December 28, 2001
---------------------	-------------------

Listing Date	January 08, 2002
--------------	------------------

NSE Symbol	NIFTYBEES
------------	-----------

BSE Code	590103
----------	--------

Pricing (Per Unit)	1/10th of Index
--------------------	-----------------

Minimum Lot (Exchange)	One unit/share
------------------------	----------------

Minimum Lot (Directly with Fund as per Creation Unit)	10, 000 units and in multiples thereof
---	--

- BANKBEES

Country of Investment	India
-----------------------	-------

Taxation Treatment	Equity
Benchmark Index	CNX PSU Bank Index
Exchange Listed	National Stock Exchange
Fund Inception Date	October 25, 2007
Listing Date	November 1, 2007
NSE Symbol	PSUBNKBEES
BSE Code	590108
Pricing (Per Unit)	1/10th of Index
Minimum Lot (Exchange)	One unit/share
Minimum Lot (Directly with Fund as per Creation Unit)	10,000 Units and in multiples thereof

#### KOTAKGOLD

Fund Type	Open-Ended
Investment Plan	Dividend
Launch date	Jul 04, 2007
Benchmark	Price of Gold
Asset Size	Rs 696.16 cr (Avg. AUM for qtr Apr-Jun '14)
Minimum Investment	Rs.10000

#### RELGOLD

Fund Type	Open-Ended
Investment Plan	Dividend
Launch date	Nov 01, 2007
Benchmark	Price of Gold

Asset Size Rs 1,987.07 cr (Avg. AUM for qtr Apr-Jun '14)

Minimum Investment Rs.0

NIFTYBEES

LIQUID BEES

Country of India  
Investment

Taxation Treatment Debt

Benchmark Index CRISIL Liquid Fund Index

Exchange Listed National Stock Exchange

Fund Inception Date July 8, 2003

Listing Date July 16, 2003

NSE Symbol LIQUIDBEES

BSE Code 590096

Pricing (Per Unit) Face Value - Rs 1000/- per unit

Minimum Lot One unit/share  
(Exchange)

Minimum Lot 2,500 Units and in multiples of 1 thereof  
(Directly with Fund  
as per Creation Unit)

NIFTYBEES

Months	Date	High Price	Low Price	Close Price	Volume	No. Of units	Returns on unit <sup>1</sup>	Net returns
April	01-04-2013	573.40	568.00	571.65	25033.00	350		
April	30-04-2013	593.00	583.51	589.58	80802.00	350	17.93	6275.50
May	31-05-2013	609.88	600.00	601.73	36177.00	350	30.08	10528.00
June	28-06-2013	591.00	575.00	589.68	84985.00	350	18.03	6310.50
July	31-07-2013	583.00	574.99	581.24	28705.00	350	9.59	3356.50
August	30-08-2013	554.20	540.05	550.80	54327.00	350	-20.85	-7297.50
September	30-09-2013	588.01	580.00	582.24	26316.00	350	10.59	3706.50
October	31-10-2013	636.95	625.00	635.92	96134.00	350	64.27	22494.50
November	29-11-2013	624.94	616.07	624.20	30417.00	350	52.55	18392.50
December	31-12-2013	638.97	636.13	637.53	19071.00	350	65.88	23058.00
January	31-01-2014	618.49	616.15	617.24	15819.00	350	45.59	15956.50
February	28-02-2014	635.40	629.99	634.41	39361.00	350	62.76	21966.00
March	31-03-2014	676.00	667.51	670.00	27292.00	350	98.35	34422.50

BANKBEEES

Months	Date	High Price	Low Price	Close Price	Volume	No. Of units	Returns on unit	Net returns
April	01-04-2013	1150.00	1125.07	1148.46	811.00	174		
April	30-04-2013	1247.00	1216.00	1234.97	2398.00	174	86.51	15052.74
May	31-05-2013	1280.00	1244.00	1248.12	1024.00	174	99.66	17340.84
June	28-06-2013	1167.20	1123.30	1162.02	1572.00	174	13.56	2359.44
July	31-07-2013	1069.95	1010.00	1063.42	1098.00	174	-85.04	-14796.96
August	30-08-2013	939.00	905.00	915.32	1858.00	174	-233.14	-40566.36
September	30-09-2013	1010.00	980.00	982.44	3587.00	174	-166.02	-28887.48
October	31-10-2013	1160.50	1125.25	1157.11	4396.00	174	8.65	1505.10
November	29-11-2013	1130.00	1106.26	1128.52	833.00	174	-19.94	-3469.56
December	31-12-2013	1154.99	1143.01	1151.00	243.00	174	-568.00	-98832.00
January	31-01-2014	1065.00	1030.00	1039.56	1548.00	174	737.00	128238.00
February	28-02-2014	1088.00	1080.25	1087.02	3399.00	174	2588.00	450312.00
March	31-03-2014	1285.00	1262.24	1267.81	4689.00	174	3878.00	674772.00



KOTAKGOLD

Months	Date	High Price	Low Price	Close Price	Volume	No. Of units	Returns on unit	Net returns
April	01-04-2013	2810.00	2770.00	2777.50	4108.00	72		
April	30-04-2013	2554.95	2531.05	2547.75	32241.00	72	-229.75	-16542.00
May	31-05-2013	2568.50	2540.00	2557.80	5879.00	72	-219.70	-15818.40
June	28-06-2013	2394.50	2301.90	2364.00	17093.00	72	-413.50	-29772.00
July	31-07-2013	2690.00	2648.60	2661.05	13723.00	72	-116.45	-8384.40
August	30-08-2013	2984.95	2901.00	2907.65	24737.00	72	130.15	9370.80
September	30-09-2013	2889.80	2816.00	2849.10	5753.00	72	71.60	5155.20
October	31-10-2013	2909.80	2856.25	2876.90	2857.00	72	99.40	7156.80
November	29-11-2013	2874.95	2835.00	2856.85	13593.00	72	79.35	5713.20
December	31-12-2013	2735.00	2708.00	2713.05	3185.00	72	-64.45	-4640.40
January	31-01-2014	2774.50	2747.20	2756.40	4917.00	72	-21.10	-1519.20
February	28-02-2014	2869.00	2821.20	2846.35	1932.00	72	68.85	4957.20
March	31-03-2014	2899.00	2660.25	2672.70	5360.00	72	-104.80	-7545.60

RELGOLD

Months	Date	High Price	Low Price	Close Price	Volume	No. Of units	Returns on unit	Net returns
April	01-04-2013	2709.60	2685.00	2705.00	2291.00	74		
April	30-04-2013	2520.50	2485.50	2500.10	4397.00	74	-204.90	-15162.60
May	31-05-2013	2488.25	2470.15	2483.50	8044.00	74	-221.50	-16391.00
June	28-06-2013	2338.50	2281.15	2295.55	13642.00	74	-409.45	-30299.30
July	31-07-2013	2634.25	2591.00	2600.10	10723.00	74	-104.90	-7762.60
August	30-08-2013	2901.50	2840.15	2851.35	103074.00	74	146.35	10829.90
September	30-09-2013	2812.00	2751.00	2802.95	7946.00	74	97.95	7248.30
October	31-10-2013	2834.00	2803.00	2813.15	1930.00	74	108.15	8003.10
November	29-11-2013	2798.00	2761.05	2789.30	1361.00	74	84.30	6238.20
December	31-12-2013	2677.00	2626.95	2637.75	5497.00	74	-67.25	-4976.50
January	31-01-2014	2775.10	2672.00	2679.80	5658.00	74	-25.20	-1864.80
February	28-02-2014	2785.05	2752.65	2774.50	1924.00	74	69.50	5143.00
March	31-03-2014	2638.00	2602.00	2616.15	1620.00	74	-88.85	-6574.90

## LIQUIDBEES

Months	Date	High Price	Low Price	Close Price	Volume	No. Of units	Returns on unit	Net returns
April	01-04-2013	10001.01	999.99	1000.00	257940.00	200		
April	30-04-2013	10001.01	999.99	1000.00	184536.00	200	0.00	0.00
May	31-05-2013	10001.01	999.99	1000.00	171595.00	200	0.00	0.00
June	28-06-2013	10001.01	999.99	1000.00	606638.00	200	0.00	0.00
July	31-07-2013	10001.01	999.99	1000.00	151365.00	200	0.00	0.00
August	30-08-2013	10001.01	999.99	1000.00	247348.00	200	0.00	0.00
September	30-09-2013	10001.01	999.99	1000.00	450949.00	200	0.00	0.00
October	31-10-2013	10001.01	999.99	1000.00	230293.00	200	0.00	0.00
November	29-11-2013	10001.01	999.99	1000.00	157045.00	200	0.00	0.00
December	31-12-2013	10001.01	999.99	1000.00	381968.00	200	0.00	0.00
January	31-01-2014	1000.01	999.99	1000.00	177245.00	200	0.00	0.00
February	28-02-2014	1000.01	999.99	1000.00	230926.00	200	0.00	0.00
March	31-03-2014	1000.01	999.99	999.99	461077.00	200	-0.01	-2.00

**Analysis**

The gold price witnessed the Indian government taking slew of measures to raise the domestic price of gold, like increasing the import duty on gold from 2% to 10% and mandating RBI's 20:80 schemes which state that 20% of the exports have to be re-exported. This wide difference between international and gold prices has led to

the legal smuggling of gold. This in turn has led to a wide difference of about 10% in the market price of gold exchange traded funds (ETFs) and their net asset values (NAVs). The market price of gold ETF is based on the domestic price of gold, while their NAVs are dependent on the landed price of gold. India's gold ETFs are losing their value as the gold ETFs prices declined during the year 2013, on account of falling global gold prices. Gold ETFs turnover fell to Rs. 5.39 lakhs in September 2013. Further, gold demand fell 15% in 2013. From the financial analysis, it is expected that the international gold price will continue to decrease in 2014. Both Bankbees and Niftybees declared dividend on 10<sup>th</sup> March, 2014 of Rs. 11 per unit and Rs. 7 per unit respectively which led to increase in their price in the month of March. The price of Liquid bees does not vary as it endeavours to keep the daily NAV at Rs. 1000. It is designed in such a way that the fund will seek to use reasonable endeavours to maintain the NAV at a fixed value by distributing the income from Liquid Bees as it arises.

### Findings

- The highest return in cash market for 1 year is in case of Wipro followed by ACC Ltd.
- The highest return in futures market for 1 year is in the case of Wipro followed by ACC Ltd.
- The price shares in cash market and price of stocks in futures market for one month do not vary by large amount.
- In case of ETFs, the highest return for 1 year is in case of Bankbees.
- From the returns calculated above, all the three asset classes i.e. cash market, derivative market and ETFs show similar trend i.e. losses in the earlier months and profits in the later months. Thus, it is advantageous to invest in these in these assets for a period of one year or more.
- The maximum returns for 1 year from the asset classes taken above are in case of Futures. The returns are high as the risk quotient is also high. The following graphs show the monthly returns from investment in the three asset classes.

In 2013, equity markets remained tame due to slowing economy. Brokerages had started their customary (they do it ahead of all major events, general elections in this case) 'crystal gazing', predicting possible levels for the Nifty and the Sensex under different scenarios. While there are enthusiasts who had predicted that the Nifty will touch 7,000 as early as March 2014, most expect the rise to be a more conservative 10%. The Nifty closed at 6,166 on December 18.

According to an article in Business Today's January 2014 edition, "the investors are cautious. This can be because even if the government changes, markets do not expect any big change in the country's economic situation anytime soon. Apart from the uncertainty around poll results, another sword over Indian equity markets is reduction (popularly called 'taper') of the liquidity injection programme being carried out by the US Fed. This, according to a section of the market, is likely to spark an FII selloff. In 2013 (till December 12), net FII inflows into Indian equities were close to \$19 billion (net outflow from debt was \$8.2 billion) compared to \$24 billion in 2012 (net inflow into debt was \$6.6 billion)."

### Conclusion

- Investment in equity is risky. To the market nothing matters unless the market reacts to it. The game is played with the mind and the emotions. Thus, the investors must be proactive and take wise decisions.
- The investors must learn the techniques of technical analysis as it provides a useful insight into price trends rather than shooting in the dark.

- Based on the questionnaire, the investors should trade more by using speculation methodology if they have the appetite for risk. This speculative trading should however, be based on technical and fundamental study of the stock and should not be guesswork.
- The investors should be aware about the company whose stocks they have purchased as favourable as well unfavourable news related to the company or the sector are likely to affect the stock prices.

## References

- Antonioni, A and P Holmes (1995): “Futures Trading, Information and Spot Price Volatility: Evidence from FTSE -100 Stock Index Futures Contracts Using GARCH?” *Journal of Banking and Finance*, 19(2), 117-129.
- Antonioni, A.P Holmes and R Priestley (1998): “The Effects of Stock Index Futures Trading on stock index volatility: An Analysis of the Asymmetric Response of Volatility to News?” *The Journal of Futures Markets*, 18 (2), 151-166.
- Bologna, P and L. Cavallo (2002): “Does the Introduction of Stock Index Futures Effectively Reduce Stock Market Volatility? Is the ‘Futures Effect’ Immediate? Evidence from the Italian stock exchange using GARCH”, *Applied Financial Economics*, 12, 183-192.
- Bollerslev T. (1986): “Generalised Autoregressive Conditional Heteroscedasticity” *Journal of Econometrics*, 31, 307-327.
- Chatrath, Arjun, Sanjay Ramchander and Frank Song (1995): “Does Options Trading Lead to Greater Cash Market Volatility?” *Journal of Futures Markets*, 15 (7), 785-803.
- Cox, C C (1976): “Futures Trading and Market Information” *Journal of Political Economy*, 84, 1215-37.
- Engle, R. (1982), “Autoregressive Conditional Heteroskedasticity with Estimates of United Kingdom Inflation”, *Econometrica*, 50, 987-1008.
- Figlewski, Stephen(1981): “Futures Trading and Volatility in the GNMA Market” *Journal of Finance*, 36, 445-84.
- Kumar, Raman, Atulya Sarin and Kuldeep Shastri (1995): “The Impact of the Listing of Index Options on the Underlying Stocks” *Pacific-Basin Finance Journal*, 3, 303-317.
- Pericli, A. and G. Koutmos (1997): “Index Futures and Options and Stock Market Volatility” *Journal of Futures Markets*, 17(8), 957-974.
- Pizzi, M., A. Andrew, J. Economopoulos and H. O’Neill (1998): “An Examination of the Relationship between Stock Index Cash and Futures Markets: A Cointegration Approach” *Journal of Futures Markets*, 18, 297-305.
- Powers M J (1970): “Does Futures Trading Reduce Price Fluctuations in the Cash Markets?” *American Economic Review*, 60, 460-4.
- Raju M T and K Karande (2003): “Price Discovery and Volatility on NSE Futures Market” *SEBI Bulletin*, 1(3), 5-15.
- Schwarz T V and F Laatsch (1991): “Dynamic Efficiency and Price Leadership in Stock Index Cash and Futures Markets”, *Journal of Futures Markets*, 11, 669-83.
- Shenbagaraman P (2003): “Do Futures and Options Trading increase Stock Market Volatility?” *NSE Research Initiative*, Paper no.20.

Stein J C (1987): “Information Externalities and Welfare Reducing Speculation”  
*Journal of Political Economy*, 95, 1123-45.

Thenmozhi M (2002): “Futures Trading, Information and Spot Price Volatility of  
NSE-50 Index Futures Contract” *NSE Research Initiative*, Paper no. 18.