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MARKET EFFICIENCY AND SIGNALING: AN EVENT STUDY ANALYSIS FOR NSE WITH REFERENCE TO LIC HOUSING FINANCE LIMITED

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Abstract- A capital market is said to be efficient with respect to corporate event announcement (stock split, buyback, right issue, bonus announcement, merger & acquisition, dividend etc.) contained information and its disseminations. The major objectives of this study are to assess the pricing behavior of the events in LIC HOUSING FINANCE LIMITED, to evaluate the risk of the stocks in in particular index, to identify the effect of those events in the whole market.

The major findings of the study are Indian overseas bank has identified the high return security during the period of December 2010, The security of LIC housing finance limited has earned high market return among the selected securities during February 2011.

The major suggestion the study are the risk averse investors would not be consider the stock of LIC housing finance limited because of risk associated with the stock in November 2010. The poor performed stock (negative return) during November 2010 founded the script of yes bank is recommended to sell immediately.

Present study is an attempt to test the efficiency of Indian stock market with respect to corporate announcement by LIC housing finance limited. The study carried as event study under the semi strong form of market efficiency using rate of return, beta, excess return, and average excess return, pivot point, and t-statistics as tool to test market efficiency. Finally the study is concluded about the effects of corporate event announcement regarding to the capital market.

Keywords: Event study, Market efficiency, Pivote point Analysis, Pricing behaviour, Semi-strong form

1. INTRODUCTION

The Economy of India is the tenth largest in the world by nominal GDP and the fourth largest by purchasing power parity (PPP). The country's per capita GDP (PPP) is \$3,339 (IMF, 129th) in 2010. Following strong economic reforms from the post-independence socialist economy, the country's economic growth progressed at a rapid pace, as free market principles were initiated in 1991 for international competition and foreign investment. Despite fast economic growth India continues to face massive income inequalities, high unemployment and malnutrition.

1.1 Stock market

The Indian Equity market is divided in to two parts Primary market - where the share is first issued in the form of IPO (Initial Public Offering) and after issuing the share it is listed on exchange and share is traded on exchange where shares can be bought and sold this is secondary market. In India mainly there are two exchanges -NSE (National Stock Exchange) BSE- Bombay Stock Exchange. The BSE is the oldest exchange in India(started in 1875).NSE started operation on 1994.Before 2000 shares was held in Physical form But the main difficulty with Physical shares is method of transaction which is open outcry system and process is

not transparent to investor also Physical shares were prone to duplication and fraud. So in 2000 NSE introduced the electronic screen based trading system further the introduction of Dematerialization(Conversion of physical share in to electronic form) and depository(where the electronic form of share is kept) revolutionized the Indian Stock market. Currently there are mainly two Depository (DP) -NSDL and CDSL and these DP are like bank of share. Individual/Firm can deal through Broker (who is registered and having membership in Exchanges and Depository) for buying and selling securities. Today NSE outpaced BSE in volume of trade. Then what is the purpose of stock market? Stock market serves the company by providing company the finance for long term needs and for investor an opportunity to park their savings in corporate world and in turn give their hand in Nation's development so stock exchange have a very vital role in country's economic development.

1.2 The behavior of the stock market

Investors may 'temporarily' move financial prices away from their long term aggregate price 'trends'. (Positive or up trends are referred to as bull markets; negative or down trends are referred to as bear markets.) Over-reactions may occur—so that excessive optimism

(euphoria) may drive prices unduly high or excessive pessimism may drive prices unduly low. Economists continue to debate whether financial markets are 'generally' efficient.

1.3 LIC Housing Finance Limited

LIC Housing Finance Ltd., the largest Housing Finance Company in India was established on 19th June 1989 under the Companies Act, 1956. The company is promoted by LIC of India. The company is recognized by National Housing Bank and listed on the National Stock Exchange (NSE) & Bombay Stock Exchange Limited (BSE) and its shares can be traded only in Demat format.

The company provides long term finance to individuals for purchase, construction, repair and renovation of new, existing flats, houses. Company also provides finance for business, personal needs against existing property. It also gives loans to professionals for purchase, construction of Clinics, Nursing Homes, Diagnostic Centres, and Office Space and also for purchase of equipments.

Over its existence of around 50 years, Life Insurance Corporation of India, which commanded a monopoly of soliciting and selling life insurance in India, created huge surpluses, and contributed around 7 % of India's GDP in 2006.

1.4 Products of LIC Housing Finance Limited

- **Home Loans-** It provides a range of services serving various needs of individuals, NRIs and pensioners related to housing.
- **Corporate Loans-** The Company offers financial assistance to corporate for purchasing, constructing, renovating and repair of housing property.
- **Builders/Developers-** It provides loans to builders or developers for construction of housing projects for commercialization.

1.5 Problem Definition

The small and medium investors can be motivated to save and invest in the capital market only if their securities in the market are appropriately priced. The information content of events and its dissemination determine the efficiency of the capital market. That is how quickly and correctly security prices reflect these information show the efficiency of the capital market.

In the developed countries, many research studies have been conducted to test the efficiency of the capital market with respect to information content of events. Whereas in India, very few studies have been conducted to test the efficiency of the capital market with respect to scam, and stock split announcements, even after these studies have been conducted with different industries with different period. Hence present study is an attempt to test the efficiency of the Indian stock market with respect to information content of LIC housing finance limited.

1.6 Scope of the study

This study covers all types of investor in Indian stock market and taken to major information passed in the market due to high and low movement of the price fluctuation related to the market. Also, this research study is made based on efficient market hypotheses (semi-strong form of efficient market hypotheses) to know the impact of events occurred in the market. Such as,

1. Scam
2. Stock split

In future, this study helps the researchers to measure the impact of those events will happened in the stock market and suggest the investor to earn superior risk-adjusted return.

1.7 Objectives of the study

- To assess the pricing behavior of the events in LIC HOUSING FINANCE LIMITED.
- To evaluate the risk of the stocks in in particular index.
- To identify the effect of those events in the whole market.
- To estimate the future price for the script and market.
- To suggest the appropriate alternative for investor.
- To suggest investors to buy, hold and sell stock in the market.

2. LITERATURE REVIEW

Edward M. Miller (1979) in his study argues that any non-random fluctuation in price (other than a steady upward drift approximating the risk adjusted rate of returns) would be exploited by speculators who would buy before an expected fall, eliminating any predictable functions and making all price changes random

Obaidullah (1990) studied 33 securities which performed well. The author has reported that earnings showed an increasing trend much before the announcement week. The study entitled "Random Walks in Stock Market Prices.

Abhijit Dutta (2001) has examined the investors' reaction to information using primary data collected from 600 individual investors and observes that the individual investors are less reactive to bad news as they invest for longer period.

Jijo Lukose and Narayan Rao (2002) examined the security price behaviour around the announcement of stock splits and around ex-split date.

Cohn, Lewellen et.al found risky asset fraction of the portfolio to be positively correlated with income and age and negatively correlated with marital status.

Rigobon and Sack (2004) discovered that increases in war risk caused declines in Treasury yields and equity prices, a widening of lower-grade corporate spreads, a fall in the dollar, and a rise in oil prices. A positive correlation exists between the price of oil and war. They argue that war has a significant impact on the oil price.

Tymoigne (2002) argue that in the financial market, banking convention and financial convention work together to fix the assets' market prices. According to him the financial convention creates a speculative sentiment of whether capitalists are more prone to sell, or to buy assets while the banking convention determines the state of credit as evidenced by the confidence of the banking sector and ability of investors accessing credit leverage for asset acquisition purpose. He concluded that "conventions do not determine asset-price, it is the "law of supply and demand" that does so, conventions "only" influence the behaviors of financial actors" Inflation as an external factor exerts a very significant negative influence on the stock prices.

Molodovsky (1995) believes that dividends are the hard core of stock value. The value of any asset equals the present value of all cash flows of the asset.

Siegel (1995) notes the improvement of a beta based on forward-looking option data, and proceeds to propose the creation of a new derivative, called an exchange option, which would allow for the calculation of what he refers to as "implicit" betas. Unfortunately the exchange options discussed by Siegel (1995) are not yet traded, and therefore his method cannot be applied in practice to compute forward-looking betas.

Ikenberry and Vermaelen (1996) found that announcement returns are directly related to the volatility of the stock and the fraction of shares to be purchased. They also found that the market reaction is negatively related with the correlation co-efficient between stock returns and market returns.

3. RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problem. Research method also consider the logic behind the methods in the context of this research study and explain why capable of being evaluated either by the researchers himself or by others.

3.1 Type of research

Empirical research which is used appropriate when proof is sought, that certain variables affect another variable in some way. Evidence gathered through experiment or empirical studies is today considered to be the most powerful support possible for a given hypothesis.

3.2 Method of data collection

This research is conducted by using secondary data which are obtained from the journals and official websites like www.nseindia.com, www.bseindia.com, www.sebi etc.

3.3 Steps in event study

a) Identify the event date

b) Collect return data around the announcement date

c) Calculate the excess return

The excess return is calculated as:

$$E R_{jt} = R_{jt} - \beta_j \times R_{mt}$$

d) Compute the average excess return

The average excess return is

$$\overline{ERt} = \sum_{j=1}^m \frac{ER_{jt}}{m}$$

e) Find T statistics for testing the significance

$$T = \frac{\bar{a}}{sd/\sqrt{n}}$$

f) Future price estimation

a) Pivot point analysis

Market analysts or experienced traders talking about an equity price nearing a certain support or resistance level, each of which is important because it represents a point at which a major price movement is expected to occur.

4. ANALYSIS AND INTERPRETATIONS

The above table states that beta of selected companies like IFCI, IOB, LIC housing finance, are 1.62, 1.43, 1.64, respectively. It shows these companies are over performed during scam due to announcement of bonus. The excess return of IDBI, IFCI, LIC housing finance, the returns are --188, -56.58, and 17 (negative) respectively. These stocks are poorly moved in the market during the scam. These stock are shows a good sign for purchase. The average excess return of IFCI, Indusind bank, LIC housing finance, these returns are -1.13, -0.84, -0.34 (negative) respectively. This stock are earn less return than expected due to the effect of the event known as scam. These stock are shows a good sign for purchase.

The Excess return of IDBI, IFCI, IOB, LIC housing finance, are -73.20, -40.74, -25.25, -55.65, (negative) respectively. This stock is poorly moved in the market during the stock split. These stock are shows a appropriate sing for purchase. The average excess return of IFCI, Indusind bank, LIC housing finance, are -1.46, -0.81, -0.50 (negative) respectively. This stock are earn less return than expected due to the effect of the event known as stock split. These stock are shows a good sign for purchase. The above table demonstrates the future price of stock as well as index which has been tested. A pivot point indicates the information like and sells below that particular level. If the LIC housing finance is moving above of 624.9, it is suggest buying above pivot point and selling the next resistance level like 2437.5 for mid-term. The above table demonstrates the future price of stock as well as index which has been tested. A pivot point indicates the information like and sells below that particular level. If the CNX NIFTY JUNIOR is moving above of 13386.41 it is suggest buying above pivot point and selling the next resistance level like 12168.45 for mid-term. The above table demonstrates the future price of stock as well as index which has been tested. A pivot point indicates the information like and sells below that particular level. If the S&P CNX NIFTY is moving above of 6338.50 it is suggest buying above pivot point and selling the next resistance level like 7598.72 for mid-term. The above table demonstrates the future price of stock as well as index which has been tested. A pivot point indicates the information like and sells below that particular level. If the LIC housing finance is moving above of 241.6, it is suggest buying above pivot point and selling the next resistance level like 285.376 for mid-term. The above

table demonstrates the future price of stock as well as index which has been tested. A pivot point indicates the information like and sells below that particular level. If the CNX NIFTY JUNIOR is moving above of 11758.15 it is suggest buying above pivot point and selling the next resistance level like 12168.45 for mid-term. The above table demonstrates the future price of stock as well as index which has been tested. A pivot point indicates the information like and sells below that particular level. If the S&P CNX NIFTY is moving above of 5944.46 it is suggest buying above pivot point and selling the next resistance level like 6143.58 for mid-term. From the above table inferred that the period of scam compared with the returns is not having significance relationship with before and after effect. -30 days to +30 days ($t = -.762$) of scam having negative reaction over the market. -40 days to +40 days (correlation = $-.358$) the relationship of before and after event provides negative returns in the market. From the above table depicts that the period of stock split compared with the returns is not having significance relationship with before and after effect. -80 days to +80 days ($t = -.995$) of stock split having negative reaction in the market. -10 days to +10 days (correlation = $-.171$) the relationship of before and after event provides negative returns in the market.

5.1 FINDINGS OF THE STUDY

- The market return of Yes bank during November 2010 is high (4.6%) among the selected stocks .It shows the good movement for sell it in the market.
- Indian overseas bank has identified the high return security (8.9%) during the period of December 2010. It indicates a positive movement for make sales decision.
- The Risk behavior of LIC housing finance limited has shown high return before the scam (November 2010). It implies that risk of the stock towards its market return.
- The excess return of yes bank during the November 2010 goes negative. So the has been poorly performed in the market.
- Average returns of bank of Baroda shows high during November 2010. It infer that the positive movement of the stock towards to make sales decision.
- The market risk of Shri ram transport finance is very low on December 2010. This shows a good movement towards to make the purchase decision.
- The excess return of yes bank (-6.79%) is very low (negative) in selected stocks during 2010. Therefore the stock having a good movement to make the sales decision.
- Federal bank is very sound position because of highest average excess return(0.15%) in the selected stocks during the same period.
- When the LIC housing finance is moving above of 241.6 it is suggest to buying above pivot point and selling the next resistance level like

285.376 for mid-term. If LIC housing finance is moving above 263.52, it suggested buying above pivot point and selling the next resistance level 263.52. for mid-term.

- If the CNX NIFTY JUNIOR is moving above of 13386.41 it is suggest buying above pivot point and selling the next resistance level like 12168.45 for mid-term. If CNX NIFTY JUNIOR finance is moving above 16590.47, it suggested buying above pivot point and selling the next resistance level 14988.47 for mid-term.
- If S&P CNX NIFTY is moving above of 6338.50 it is suggest buying above pivot point and selling the next resistance level like 7598.72 for mid-term. If S&P CNX NIFTY is moving above 6143.38, it suggested buying above pivot point and selling the next resistance level 6969.017 for mid-term.

5.2 SUGGESTIONS AND RECOMMENDATIONS

- Based on the analysis the yes bank performed well and produced high return (4.6%). Therefore it is suggested to buy.
- Indian bank has obtained 8.9% of market return among the selected scripts during same period. Hence the stock suggested buying.
- IFCI (0%), Can bank (0.026%), Yes bank (0.13%) are founded that poor performed stocks based on its market return during November 2010, December 2010, February 2011 respectively. this stocks are suggested to sell immediately.
- The risk averse investors would not be consider the stock of LIC housing finance limited because of risk associated with the stock in November 2010.
- The market return of bank of Baroda has shown averagely increased trend during the November 2010. Therefore it is suggested to buy.
- Risk averse investors can be concentrate the script of shri ram transport finance limited towards low risk pattern in the period of December 2010.
- Yes bank shows the most negative excess return among the selected securities during December 2010. It is a right a right time of investor to switch other stock.
- Union bank is suggested to buy during February 2011 in the aspect of its risk pattern (low risk).
- The average excess return of federal bank is moderate among the stocks .so it is suggested to buy.
- The aggressive stocks are LIC housing finance limited and syndicate bank (beta value more than 1).
- The defensive stock is Shriram transport finance (beta value less than 1).

- CNX Nifty junior has varied gap on its both resistance and support level. Therefore it's suitable to make decision on first level of both resistance and support.
- The market is affected during the scam particularly in the interval in between -30 days to +30 days and -40 days to + days. It implies the investor have to much more aware about the market during the period.
- The announcement of stock split has made impact on the market in interval of -80 days to +80 days and -10 days to +10 days. This infer that the investors are has to avoid the transaction of buying and selling securities among the period.

5.3 CONCLUSION

The CNX NIFTY JUNIOR index consists of 50 companies. Exhibits event anomalies in returns the event anomalies examined in this study is an Empirical study on pricing behavior of Indian stock market with the event happened in LIC housing finance limited. The main purpose of study was to find out whether Indian stock market affect from event effects. To test these issues, the researcher selected the CNX NIFTY JUNIOR index for the study.

The major findings of the study are Indian overseas bank has identified the high return security during the period of December 2010, The security of LIC housing finance limited has earned high market return among the selected securities during February 2011.

The major suggestion the study are the risk averse investors would not be consider the stock of LIC housing finance limited because of risk associated with the stock in November 2010. The poor performed stock (negative

return) during November 2010 founded the script of yes bank is recommended to sell immediately.

The present study has concluded that the announcement of corporate events belongs to the LIC housing finance limited like scam and stock split are made a slight impact on the stock market during the study period. Also this research study will be help the researchers to analyse the similar event will happen in the market.

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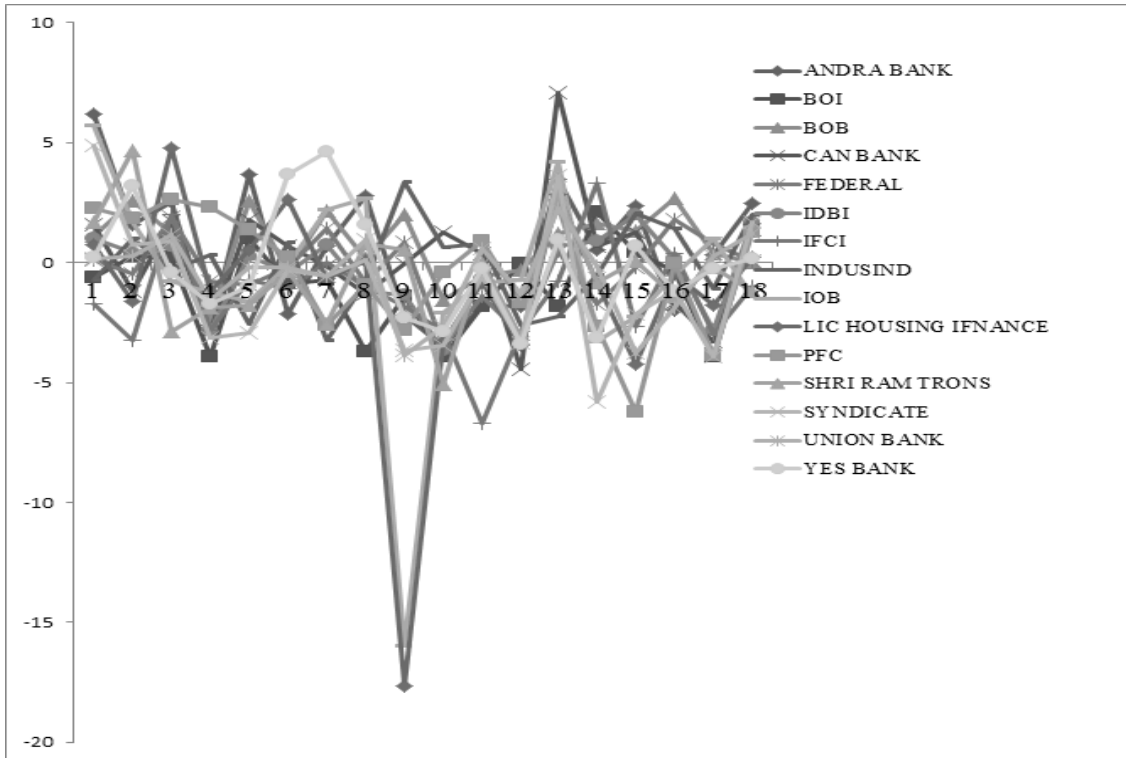


Fig. 1- Market returns for S&P CNX Jr NIFTY during the event of Scam

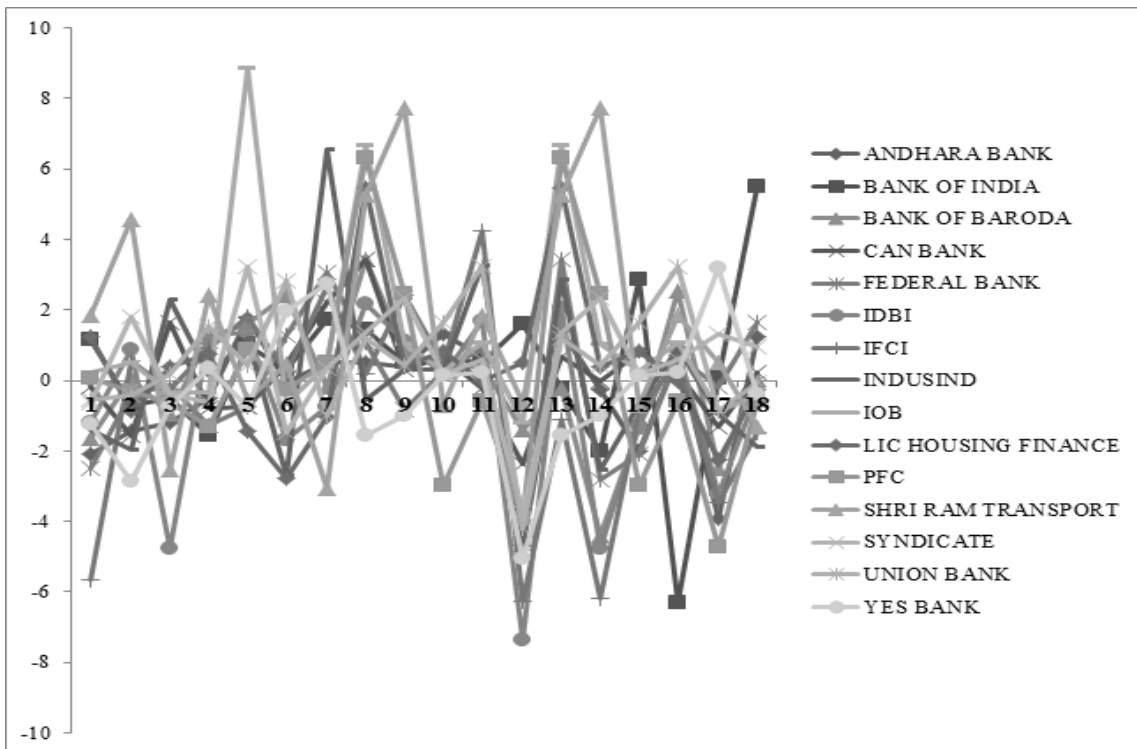


Fig. 2- Market returns for S&P CNX Jr NIFTY during the event of Stock split

Table 4.1- Risk and return calculation in the events of scam and stock split

S.no	Stock name	Selected companies in the event of scam			selected companies in the event of stock split		
		Beta	Excess return	Average excess	Beta	Excess return	Average Excess
1	Andhra bank	1.029923	3.891552	0.077831	1.046955	-1.55373	-0.03107
2	Bank of India	1.350379	18.14882	0.362976	0.104408	1.666099	0.033322
3	Bank of Baroda	0.962825	62.84973	1.256995	0.977864	56.78525	1.135705
4	Can bank	1.288502	4.449102	0.088982	1.212785	11.56024	0.231205
5	Federal bank	1.093431	-13.4756	-0.26951	1.095953	-2.36441	-0.04729
6	IDBI	1.300076	-1.87858	-0.03757	1.292549	4.898998	0.09798
7	IFCI	1.625507	-56.5818	-1.13164	1.627631	-73.2035	-1.46407
8	Indusind bank	1.065066	-41.9157	-0.83831	1.0701	-40.742	-0.81484
9	IOB	1.425511	-5.4815	-0.10963	1.418358	-16.399	-0.32798
10	LIC housing finance	1.637331	-17	-0.34	1.63267	-25.2452	-0.5049
11	Power finance corporation	0.988274	-56.0239	-1.12048	0.99346	-55.6487	-1.11297
12	Shriram Transport finance	0.715974	-24.93	-0.4986	0.691975	-39.8258	-0.79652
13	Syndicate bank	1.42934	-12.7413	-0.25483	1.457935	-12.9175	-0.25835
14	Union bank	1.128751	-14.0824	-0.28165	1.114052	-14.1196	-0.28239
15	Yes bank	1.319713	-5.48838	-0.10977	1.360864	-6.79178	-0.13584

Table 4.2- Prediction of market price using pivot point analysis from July, 2010 to April 2011

NAME OF STOCK	R2	R1	PP	S1	S2
LIC HOUSING FINANCE	1964.4	1099.2	624.9	-	-
CNX NIFTY JUNIOR	14988.47	13242.03	11639.97	9893.533	8291.467
S&P CNX NIFTY	6969.017	6438.733	5808.217	5277.933	4647.417

Table 4.3- Pivot point analysis for market price for the period of April 2011

	R2	R1	PP	S1	S2
LIC HOUSING FINANCE	263.5167	241.3833	219.4667	197.3333	175.4167
CNX NIFTY JUNIOR	11963.3	11670	11464.85	11171.55	10966.4
S&P CNX NIFTY	6044.017	5892.383	5792.817	5641.183	5541.617

Table 4.4.- Test of significance for scam and stock split

Period	T- Statistics for scam			T- Statistics for stock split		
	Correlation	t-value	Sig. (2-tailed)	Correlation	t-value	Sig. (2-tailed)
+90 days to -90 days	.128	.198	.843	.057	-.862	.391
+80 days to -80 days	-.016	.551	.583	-.085	-.995	.323
+70 days to -70 days	-.128	-.644	.522	-.086	.330	.742
+60 days to -60 days	.006	-.713	.478	.085	.425	.673
+50 days to -50 days	.095	-.757	.453	-.050	.719	.476
+40 days to -40 days	-.358	-.480	.634	.077	.469	.642
+30 days to -30 days	-.126	-.762	.452	-.332	.271	.789
+20 days to -20 days	-.064	-.385	.705	-.430	.062	.952
+10 days to -10 days	-.238	.152	.882	-.171	.336	.745