

# BIOINFO Financial Management

BIOINFO Financial Management

Volume 1, Issue 1, 2011, pp-36-41

Available online at <http://www.bioinfo.in/contents.php?id=195>

## TESTING THE SEMI-STRONG FORM EFFICIENCY OF INDIAN STOCK MARKET WITH RESPECT TO THE INFORMATION CONTENT OF PROFIT BOOKING ANNOUNCEMENT

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Received: August 21, 2011; Accepted: September 09, 2011

**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 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.

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.

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.

**1.1 Bombay Stock Exchange (BSE). SENSEX** is the benchmark index for the Indian stock market. It is the most frequently used indicator while reporting on the state of the market. Sensex is not only scientifically designed but also based on globally accepted construction and review methodology. First compiled in 1986, SENSEX is a basket of 30 constituent stocks representing a sample of large, liquid and representative companies. The base year of SENSEX is 1978-79 and the base value is 100. The index is widely reported in both domestic and international markets through print as well as electronic media.

**1.2 National Stock Exchange.** NSE is a stock exchange located at Mumbai, India. It is the 9th largest stock exchange in the world by market capitalization and largest in India by daily turnover and number of trades, for both equities and derivative trading. NSE has a market capitalization of around US\$1.59 trillion and over 1,552 listings as of December 2010. Though a number of other exchanges exist, NSE and the Bombay Stock Exchange are the two most significant stock exchanges

in India, and between them are responsible for the vast majority of share transactions. The NSE's key index is the S&P CNX Nifty, known as the NSE NIFTY (National Stock Exchange Fifty), an index of fifty major stocks weighted by market capitalization.

**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 Dematformat. 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 Centers, and Office Space and also for purchase of equipments. In 2009 LIC Housing Finance cut interest rates for new loans by 0.5% where for customers opting for floating rate loans between Rs.30 lakh and Rs.75 lakh, the new rates will be 8.755 against 9.25%.

#### 1.3.1 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.

#### 1.4 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 profit booking 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.

#### 1.5 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, Profit booking. 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.

#### 1.6 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

An attempt was made by **Kun Shin Im, Kevin E. Dow** and **Varun Grover (2001)** in their study, examined the changes in the market value of the firm as reflected in the stock price in response to IT investment announcements. Reactions of price and volume were negatively related to firm size and became more positive over time.

**Al – Tamimi (2007)** identified company fundamental factors (performance of the company, a change in board of directors, appointment of new management, and the creation of new assets, dividends, earnings), and external factors (government rules and regulations, inflation, and other economic conditions, investor behavior, market conditions, money supply, competition, uncontrolled natural or environmental circumstances) as influencers of asset prices. He developed a simple regression model to measure the coefficients of correlation between the independent and dependent variables.

**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.

**Blume (1971)** used monthly prices data and successive seven-year periods and shown that the portfolio betas are very stable where as individual security betas are highly unstable in nature. He shows that, the stability of individual beta increases with increase in the time of estimation period.

**Allen et al. (1994)** have considered the subject of comparative stability of beta coefficients for individual securities and portfolios. The usual perception is that the portfolio betas are more stable than those for individual securities. They argue that if the portfolio betas are more stable than those for individual securities, the larger confidence can be placed in portfolio

betaestimates over longer periods of time. But, their studyconcludes that larger confidence in portfolio betas is not justified.

**Scott & Brown (1980)** show that when returns of the market are subjected to measurement errors, the concurrent auto correlated residuals and inter-temporal correlation between market returns and residual results in biased and unstable estimates of betas. This is so even when true values of betas are stable over time.

**Vipul (1999)** examines the effect of company size, industry group and liquidity of the scrip on beta. He considered equity shares of 114 companies listed at Bombay Stock Exchange from July 1986 to June 1993 for his study. He found that size of the company affects the value of betas and the beta of medium sized companies is the lowest which increases with increase or decrease in the size of the company. The study also concluded that industry group and liquidity of the scrip do not affect beta.

**Gupta &Sehgal (1999)** examine the relationship between systematic risk and accounting variables for the period April 1984 to March 1993. There is a confirmation of relationship in the expected direction between systematic risk and variables such as debt-equity ratio, current ratio and net sales. The association between systematic risk and variables like profitability, payout ratio, earning growth and earnings volatility measures is not in accordance with expected sign.

**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

#### 3.1 Research methodology

Research methodology is a way to systematically solve the research problem. Thus when we talk of research method but also consider the logic behind the methods we use in the context of our research study and explain why we are capable of being evaluated either by the researchers himself or by others.

#### 3.2 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.

#### 3.3 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.

#### 3.4 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:

$$E R_{jt} = R_{jt} - \text{Beta}_j \times R_{mt}$$

##### d) Compute the average excess return

The average excess return is

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

##### e) T statistics

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

##### f) Future price estimation (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.

Pivot point is calculated using the following formula,

### 4. ANALYSIS AND DISCUSSION

#### Inference ( Table 4.1)

The above table states that beta of selected companies like Andhra bank, Federal bank, IDBI, IFCL, IOB, LIC housing finance, are 0.67, 0.64, 0.43, 0.83, 0.50, 0.37 respectively. It shows these companies are under performed during profit booking due to announcement of bonus. So these stocks are shows a good sing for purchase. The excess of selected companies like, Federal bank, LIC housing finance, syndicate bank, are 8.17, 14.65, 7.84 respectively It shows this stocks are moved frequently in the market during the profit booking due to announcement of bonus. The average excess return of selected companies like Federal Bank, IOB, LIC housing finance, union bank, are 0.17, 0.29, 0.15, respectively. It shows this stock is performed in a positive way because of bonus announcement during the profit booking.

#### Inference ( Table 4.2)

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. 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 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.

#### Inference ( Table 4.3)

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 241.6it is suggest buying above pivot point and selling the next resistance level like 285.376 for mid-term. 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. 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 depicts that the period of profit booking compared with the returns is not having significance relationship with before and after effect. -3 days to +3 days ( $t=-1.615$ ) of profit booking having negative reaction in the market. -3 days to +3 days (correlation=  $-0.223$ ) 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 security of LIC housing finance limited has earned high market return among the selected securities during February 2011(profit booking).
- 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 financeis 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.
- Union bank is better when compared with other scripts based on its risk pattern (0.39) during the event of profit booking (February 2110).
- LIC housing finance limited can be placed at a better position in terms of its excess market return(14.65%) than other stocks on profit booking (February 2011).
- Federal bank is very sound position because of highest average excess return(0.15%) in the selected stocksduring 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

- LIC housing finance limited has identified as high return security (12.7%) in season of profit booking (February 2011) its suggested to buy.
- 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) during November 2010 founded the script of yes bank is recommended to sell.
- 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 impact of profit booking is identified in the interval of -3 days to +3 days. It shows positive trend of market to buy and sell the securities.

### 5.3 CONCLUSION

The CNX NIFTY JUNIOR index 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. With investing security market gaining much importance these days, a good strategy adopted to gain from the market movements will give sure returns to the investors. Return on securities is entirely depending on separate interest of investor towards the stock 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 (profit booking). 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 profit booking is made a slight impact on the stock market during the study period. Also this research study will be help the researchers to analyze the similar event will happen in the market.

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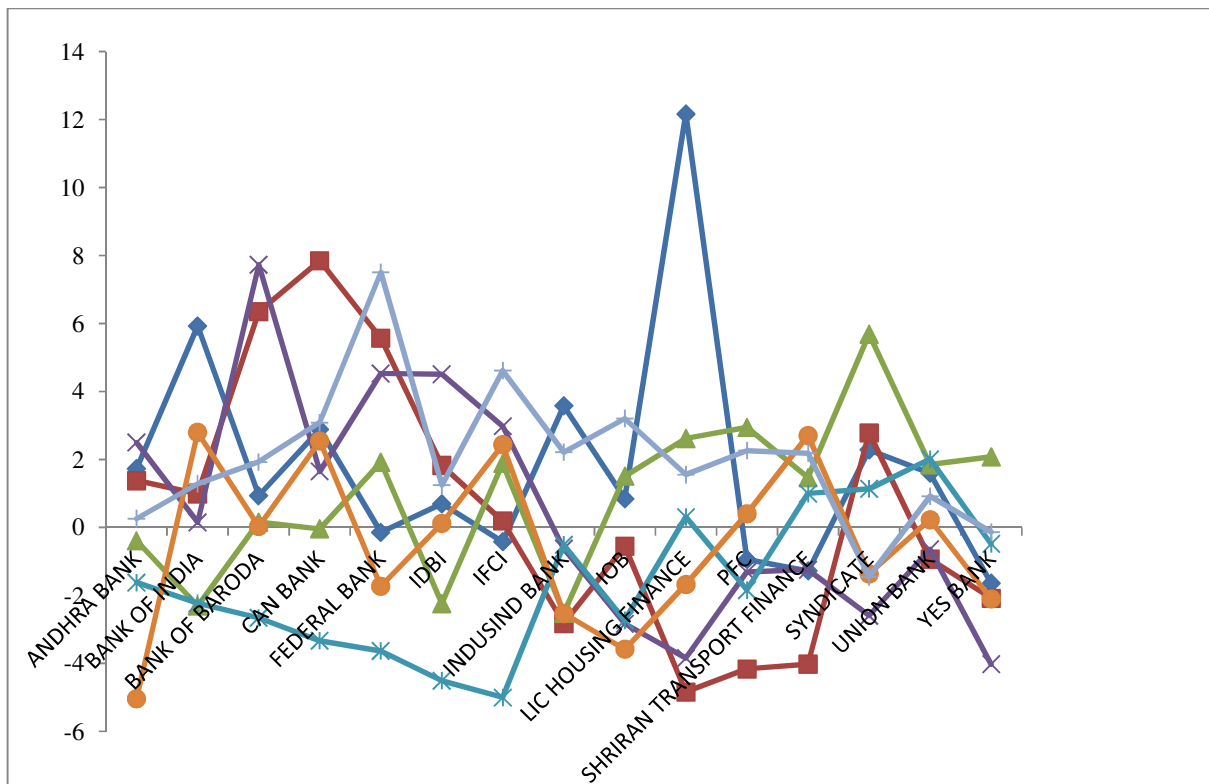


Fig. 1-Market returns for selected companies during the event of profit booking

Table 4.1: Risk and return calculation in the events of profit booking

| S.no | Stock name                | Beta  | Excess return | Average excess return |
|------|---------------------------|-------|---------------|-----------------------|
| 1    | Andhra bank               | 0.67  | 2.53          | 0.05                  |
| 2    | Bank of India             | -0.13 | -6.85         | -0.14                 |
| 3    | Bank of Baroda            | 0.17  | 3.24          | 0.06                  |
| 4    | Can bank                  | 0.37  | 4.35          | 0.09                  |
| 5    | Federal bank              | 0.64  | 8.17          | 0.17                  |
| 6    | IDBI                      | 0.43  | -2.63         | -0.05                 |
| 7    | IFCI                      | 0.83  | -13.33        | -0.27                 |
| 8    | Indusind bank             | -0.66 | -25.17        | -0.01                 |
| 9    | IOB                       | 0.5   | 2.12          | 0.04                  |
| 10   | LIC housing finance       | 0.37  | 14.65         | 0.29                  |
| 11   | Power finance corporation | -0.07 | -15.99        | -0.32                 |
| 12   | Shriram Transport finance | -0.08 | -6.43         | -0.13                 |
| 13   | Syndicate bank            | 0.62  | 7.84          | -0.04                 |
| 14   | Union bank                | 0.39  | 7.6           | 0.15                  |
| 15   | Yes bank                  | 0.76  | 4.15          | 0.08                  |

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 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- Calculation of T- Statistics for Profit booking

| Period               | Correlation | t-value | Sig. (2-tailed) |
|----------------------|-------------|---------|-----------------|
| -15 days to +15 days | .625        | -.928   | .369            |
| -9 days to +9 days   | .157        | -1.040  | .329            |
| -6 days to +6 days   | .278        | -1.148  | .303            |
| -3 days to +3 days   | -.223       | -1.615  | .248            |