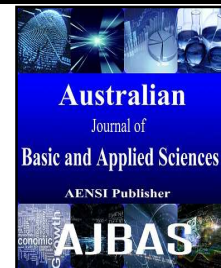




ISSN:1991-8178

Australian Journal of Basic and Applied Sciences

Journal home page: www.ajbasweb.com



An Analytical Research On Fundamental And Technical Analysis Of ICICI Bank Stocks In India

¹P. Prakash and ²Dr.S.Sundararajan

¹Assistant Professor, School of Management, SKCT, India.

²Assistant Professor (Sr.G), School of Management, India.

ARTICLE INFO

Article history:

Received 3 October 2015

Accepted 31 October 2015

Key words:

Fundamental Analysis, India, ICICI, Investment Opportunities etc,RSI, ROC, Ratio Analysis, Stock Markets, Technical Analysis,

ABSTRACT

India is one of the top 10 economies globally with vast potential for the banking sectors to grow. The last decade witnessed a tremendous upsurge in transactions through ATM's, internet and mobile banking. In 2014, the country's Rs. 81 trillion banking industry set for a greater change. The sector seems to be optimistic of posting strong demand in the couple of years. So investment in the stocks of the banking industry is one of the attractive options particularly in India. Investing in shares of the company is highly rewarding at the same time it is highly risk. Moreover Indian stock market is highly volatile with large volumes being traded. Analysis of stock is highly helpful to reduce the risk and to make good money. This quantitative analytical research is aimed in analyzing the Indian banking industry in the view of its feasibility as an investment option. A detailed analysis of the Indian banking industry is covered in respect of the past growth and performance. The fundamental analysis is done which analysis the economy in the broader sense. The technical analysis is also done for the stocks using some technical indicators. For the study ICICI bank has been chosen. The research is based on the secondary data and the research design is also analytical in nature as it deals with facts and figures. The tools used for the study are the Ratio Analysis, Beta Analysis (β), Relative Strength Index (RSI) and Rate of Change (ROC). The suggestion to ICICI Bank is the calculated value of ROC and RSI shows more buying opportunity than the selling opportunity so the investor should buy of the shares as the price may increase in the future. Based on the analysis the future price directions are determined and recommendations are given to make the research meaningful. The conclusion is the knowledge of the stock market is the key to success and emphasis should be on managing trading risk while the fundamental and technical analysis can help the investors to control them. So the fundamental & technical analysis gives clue to buy / sell a stock with adequate justification.

© 2015 AENSI Publisher All rights reserved.

To Cite This Article: P. Prakash and Dr.S.Sundararajan., An Analytical Research On Fundamental And Technical Analysis Of ICICI Bank Stocks In India. *Aust. J. Basic & Appl. Sci.*, 9(33): 135-144, 2015

INTRODUCTION

1.1 General Introduction:

Investment is the conscious act of an individual or any entity that involves deployment of money (cash) in securities or assets issued by any financial institutions with a view to obtain the target returns over a specified period of time.

A target return on an investment includes:

- Increases in the value of the securities or assets, and/or
- Regular income must be available from the securities or assets.

In finance, investment is the purchase of an asset or item with the hope that will generate income or appreciate in the future and be sold at the higher price. It generally does not include deposits with the

bank or similar institution. The term investment is usually used when referring to a long term outlook.

Types of Investment:

- 1) Traditional investment
- 2) Alternative investment

Traditional Investment:

The traditional investment refers to bonds, cash, real estate, stocks and shares.

Alternative Investment:

An alternative investment is an investment in asset classes other than stocks, bonds and cash. The term is relatively loose one and it includes tangible assets such as precious metals, antiques, coins stamps and some other financial assets such as commodities,

private equity, distressed securities, hedge funds, carbon credits, venture capital and financial derivatives.

1.2 Theoretical Framework of The Study:

1.2.1 Fundamental Analysis:

Fundamental analysis is performed on historical and present data, but with the goal of making financial forecasts. There are several possible objectives:

- To conduct a company stock valuation and predict its probable price evolution,
- To make a projection on its business performance,
- To evaluate its management and make internal business decisions,
- To calculate its credit risk.

Fundamental analysis involves three steps:

1. Economy analysis
2. Industry analysis
3. Company analysis

1.2.2 Technical Analysis:

Technical analysis is all about studying stock price graphs and a few momentum oscillators derived thereof. It must be understood that technical studies are based entirely on prices and do not include balance sheets, P&L accounts (fundamental analysis), the assumption being that the markets are efficient and all possible price sensitive information is built into the price graph of a security / index.

Accurate share price allocates scarce capital more efficiently when new projects are financed through a new primary market offering, but accuracy may also matter in the secondary market because: 1) price accuracy can reduce the agency costs of management, and make hostile takeover a less risky proposition and thus move capital into the hands of better managers, and 2) accurate share price aids the efficient allocation of debt finance whether debt offerings or institutional borrowing.

1.2.3 Types Of Charts:

- Candlestick chart – Of Japanese origin and similar to OHLC, candlesticks widen and fill the interval between the open and close prices to emphasize the open/close relationship. In the West, often black or red candle bodies represent a close lower than the open, while white, green or blue candles represent a close higher than the open price.
- Line chart – Connects the closing price values with line segments.
- Open-high-low-close chart – OHLC charts, also known as bar charts, plot the span between the high and low prices of a trading period as a vertical line segment at the trading time, and the open and close prices with horizontal tick marks on the range line, usually a tick to the left for the open price and a tick to the right for the closing price.

- Point and figure chart – a chart type employing numerical filters with only passing references to time, and which ignores time entirely in its construction.

1.2.4 Stock Market:

A stock market or equity market is the aggregation of buyers and sellers (a loose network of economic transactions, not a physical facility or discrete entity) of stocks (shares); these are securities listed on a stock exchange as well as those only traded privately. A stock exchange is a place to trade stocks. Companies may want to get their stock listed on a stock exchange. Other stocks may be traded "over the counter", that is, through a dealer. A large company will usually have its stock listed on many exchanges across the world.

1.2.5 Market Participants:

Market participants include individual retail investors, institutional investors such as mutual funds, banks, insurance companies and hedge funds, and also publicly traded corporations trading in their own shares. Some studies have suggested that institutional investors and corporations trading in their own shares generally receive higher risk-adjusted returns than retail investors.

1.3 Need For Study:

The study throws lights on the performance of fast emergent banking companies in India. The performance of the companies is analyzed in terms of fundamental and technical aspect. Rational investors always focus on utmost return with minimum risk. Hence well diversified equity funds are the supportive opportunities available for investment. Potential investors always focus on the upcoming affluence of the key players from highly optimistic sector of the economy. Hence the studies concerned with these banking sectors would be valuable for the investors. Since the fast building companies are the spinal columns of the Indian economy the study is concerned with these would be positive for the society.

1.4 Objectives Of The Study:

Primary Objectives

- To analyze the selected bank (ICICI Bank) in fundamental and technical aspect.
- To evaluate the financial performance of the selected banking stocks (ICICI Bank).

Secondary Objectives

- To calculate the Rate of Change (RoC) & Relative Strength Index (RSI) of the banking scrip's (ICICI Bank) and to identify whether they are oversold or overbought.
- To give meaningful suggestions to investors & this research readers.

II. Review of Literature:

Madhu (2011) this article reports the results of a questionnaire survey in September to November 2011 on the use of Fundamental and Technical analysis by brokers/ fund managers in Indian stock market to form their forecast of share price movements. The findings of the research reveal that more than 85% of the respondents rely upon the fundamental and technical analysis for predicting future price movements at different time horizons. For this purpose various banking, information technology, manufacturing were chosen. The study covers different organizational set ups such as licensed broking firms, licensed banks, mutual funds in all major Indian cities by serving a structured questionnaire to individuals.

Janaki (2006) conducted the study on "The fundamental analysis on Indian banking sector". Investment decisions, in all sectors, have been gaining paramount importance, warranting the investors to be continuously cautious of risk and return involved in the same. Ever since Indian economy opened its doors to MNCs, the Indian banking sector has been witnessing bizarre changes in terms of new products and services and stiff competition as well. The sorts of IPOs that have been taking place in banking sector are amazing. In the light of these recent developments, a careful analysis of the profitability of Indian banking sector is inevitable. The present study attempts to analyze the profitability of the three major banks in India: SBI, ICICI, and HDFC.

Subash (2009) conducted the study on "The fundamental and the technical analysis of automobile industry". The bank interests have been increased steadily and the inflation is also increasing. There is no difference between the inflation rate and the interest rate. Because of inflation value of money has been decreased and the cost of living has been increased. This created panic among the lower, middle and the upper middle class families who considered keeping their savings in bank as safe as well remunerative. So the investors are searching for proper investment avenues. The study helps the investors to invest in shares. The stock exchange comes in the secondary market. Stock exchanges perform activities such as trading in shares, securities, bonds, mutual funds and commodities.

Deepika (2013) made the study on "The fundamental analysis of the public sector banks". The study represents the brief idea about the Indian banking sector and fundamental analysis of public sector banks. The analyst is being taken into account the entire three constituent that form different but special steps in making various decisions. Fundamental analysis helps to analyze the strength of basics of Indian banking sector. It provides the information on the long term stability of banking sector and future growth prospects in banking sector. Investors can find out the past performance of

banking sector and future prospects of higher return and stability in this sector.

Srinivas (2013) concluded the study on "The fundamental and the technical analysis of the banking stocks" the systematic study of the performance of banking companies stock's in stock market and future value of the share price with help of fundamental analysis and technical analysis. While decision in share price based on actual movement of shares price measured more in money & percentage term & nothing else. In the analysis, calculations are based on facts & not on hope. The subject of analysis is to determine future share price movement with the help of ratio analysis, study of graph. This analysis does not discuss how to buy & sell shares, but does discuss the methods, which enables the investor to arriving at buying & selling decision. the technical approach to investment is essentially a reflection of the idea that prices moves in a trend that are determined by the changing attitude of investor's toward a variety of economic, monetary, political and psychological forces. Threat of technical analysis, for it is an art, is to identify a trend reversal at a relatively early stage and ride on that trend until the weight of the evidence shows or proves the trend has reversed. And the technical analysis states that the support and resistance is enough for price prediction until the new high or low occurs.

III. Research Methodology:

3.1 Statement Of The Problem:

In the present study of the economy there is an imperative need for the investors to protect their investment though it is well known fact that investing in shares, debentures, bonds etc are profitable and it is the exiting avenues which involves a great deal of risk. Hence the investing in financial securities is considered to be one of the best avenues for investing. The Indian capital market is regarded as the barometer for the country's economy health and performance. Thus any development will reflect on equity prices will positive and negative effects. Therefore the study on the fundamental analysis and technical analysis of four major players become relevant to appraise the intrinsic value and demand and supply in the market to determine the direction will continue in the future avenues and prospects in banking sectors there by enabling the investors to make proper decisions at the right time.

3.2 Sampling Design:

Nature of the study:

The research design is Analytical design because the study deals with the facts and figures. The analytical research answers why, how, when and by whom the incident happened. It provides suitable reason. It is an depth study.

Period of the study:

The period of study ranges from 2009 to 2013, Five years.

3.3 Method Of Data Collection:

Collection of the data is the important stage in the research process. Collection of data means the methods that are to be employed for getting the required information from the units under investigation.

The sources of data collected are secondary in nature. These data's are collected from historical data of closing price of selected equities in the websites of the stock exchange and balance sheet of the various banks are being collected through the companies' websites.

3.4 Tools Used For Analysis:

- ❖ Ratio analysis
- ❖ Beta analysis
- ❖ Relative Strength Index(RSI)
- ❖ Rate of Change(ROC)

3.5 Chapter Plan:

The study comprises of five different chapters. They are:

Chapter 1 Introduction:

This chapter deals with the general introduction of the study, theoretical framework of the study, industry profile, need for the study and the objective of the study.

Chapter 2 Review Of The Literature:

The review of the literature is the articles, previous projects that have been carried on by various researchers.

Chapter 3 Research Methodology:

The chapter deals with the problem of the study, sampling techniques used for the study, method of the data collections, tools used for analysis and the limitations of the study.

Chapter 4 Data Analysis And Interpretation:

This chapter shows the usage of the tools through the data collected and the interpretations derived through analysis.

Chapter 5 Findings, Suggestions And Conclusions:

The chapter deals with what the researcher has found through the data analysis and the deals with suggestions provided for the public.

Chapter 6 References:

This chapter shows the list of journals & books in which the researcher referred in order to study the previous resembled projects & to extract the useful concepts.

3.6 Limitations Of The Study:

✓ The data are collected from secondary sources like websites, journals, books so the study is not free from bias.

✓ Time available for this study work is limited.

✓ The effect of speculation, which has direct bearing on security prices, is not explained.

✓ The lack of experience was another major limitation

The analytical is done only on five year data.

IV. Data Analysis And Interpretation:

4.1 Ratio Analysis For Icici Bank:

1) Net Profit Margin Ratio

$$\text{Net Profit Margin Ratio} = \frac{\text{Total Revenue} - \text{Total Expenses}}{\text{Total Revenue}}$$

$$= \text{Net Profit} / \text{Total Revenue}$$

$$= \text{Net Profit Margin (NPM)}$$

Net profit margin is the percentage of revenues remaining after all the operating expenses, interest, taxes and preferred stock dividends (but not common stock dividends) have been deducted from a company's total revenue.

Table 1: Table showing the Net Profit Margin (NPM) ratio ICICI Bank

S.No	Years	Net Profit (Rs.)	Total Revenue (Rs.)	Net Profit Ratio in %
1	2009	3758.13	39210.31	9.59
2	2010	4024.28	32999.36	12.20
3	2011	5151.38	32621.94	15.79
4	2012	6465.26	41045.41	15.75
5	2013	8325.47	48421.30	17.19

Source: Secondary data

Interpretation:

Net Profit Margin shows the company's projection. The higher the NPM is good for company in terms of profit motive. It's the foremost measure for all profit seeking companies. No company wants to get less NPM & NPR. From the above table it's

inferred that the Net Profit ratio is high as 17.19 percent in the year 2013 and low as 9.59 percent in the year 2009. Overall the net profit ratio is 'Good' as it's increasing YoY. The total revenue is high in the year 2013 (i.e. Rs 48,421.30 Crores) and low in the year 2010 (i.e. Rs. 32,999.36).

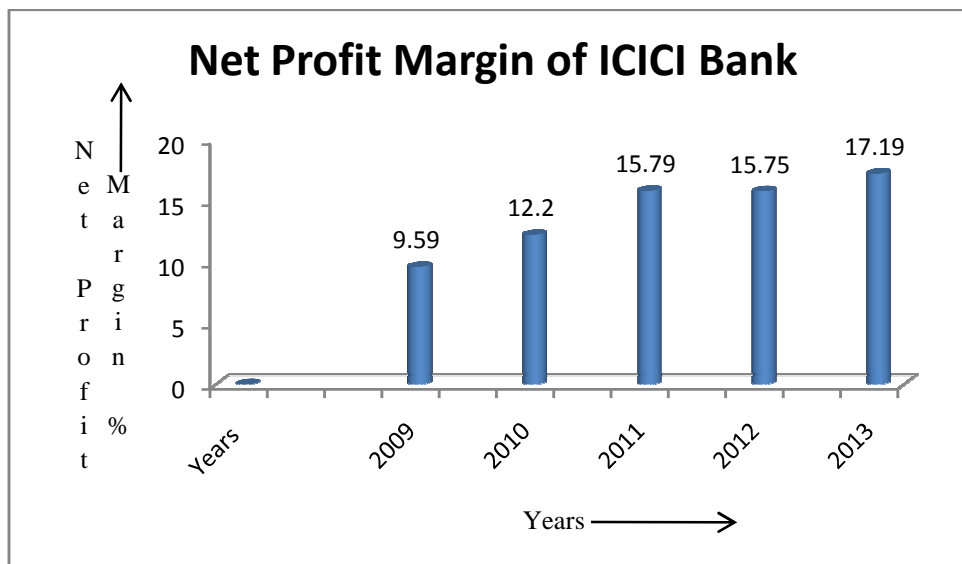


Chart 1: Chart showing the net profit margin for ICICI Bank

2) Interest Expended to Interest Earned Ratio:

Table 2: Table showing the interest expended to interest earned ratio for ICICI Bank

S.No	Years	Interest Expended (Rs.)	Interest Earned (Rs.)	Interest expended to interest earned Ratio [in %]
1	2009	22725.93	31092.55	73.09
2	2010	17592.57	25706.93	68.44
3	2011	16957.15	25974.05	65.29
4	2012	22808.50	33542.65	68
5	2013	26209.18	40075.60	65.40

Source: Secondary data

Interpretation:

From the above table it's inferred that the interest expended to interest earned ratio is high as 73.09 percent in the year 2009 and low as 65.29 percent in the year 2011. Overall the ratio is

'Satisfactory'. The interest earned is high in the year 2013 (i.e. Rs. 40,075.60 Crores) and low in the year 2010 (i.e. Rs.25,706.93 Crores).

3. Earning Per Share (EPS):

Table 3: Table showing the Earning Per Share (EPS) for ICICI Bank

S.No	Years	Profit (Rs. Crs)	No. of shares	EPS
1	2009	3758.13	146.33	33.76
2	2010	4024.98	111.49	36.10
3	2011	5151.38	115.18	44.73
4	2012	6465.26	115.28	56.09
5	2013	8325.47	115.36	72.17

Source: Secondary data

Interpretation:

From the above table it's inferred that earning per share is high in the year 2013 with Rs. 72.17 and low in the year 2009 with Rs.33.76. Overall the ratio

is 'Satisfactory'. The profit is high in the year 2013 of Rs. 8,325.47 Crores and low in the year 2009 of Rs.3,578.13 Crores.

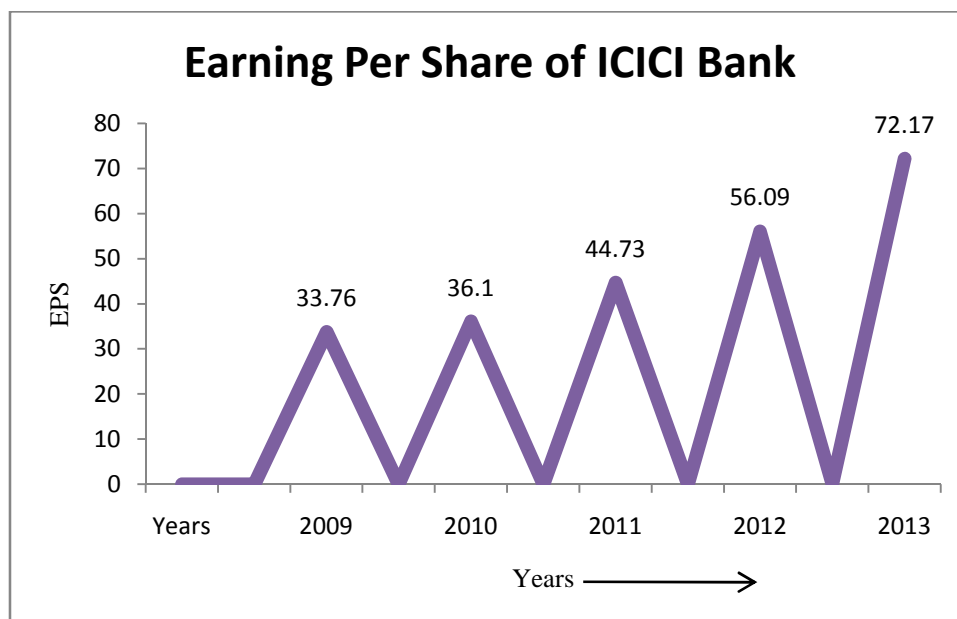


Chart 2: Chart showing the Earning Per Share (EPS) for ICICI Bank

4.2 Rate Of Change (Roc) Calculation For Icici Bank:

Table 4: Table showing the ROC calculation for ICICI Bank

Days	Date	Closing Prices (CP)	CP 5 days ago	Price Ratio	ROC
1	4/1/2014	1230.35	-	-	-
2	4/7/2014	1235.5	-	-	-
3	4/14/2014	1262	-	-	-
4	4/21/2014	1269.3	-	-	-
5	4/28/2014	1251.8	-	-	-
6	5/5/2014	1374.85	1230.35	1.12	0.12
7	5/12/2014	1464.8	1235.5	1.19	0.19
8	5/19/2014	1460.75	1262	1.16	0.16
9	5/26/2014	1418.4	1269.3	1.12	0.12
10	6/2/2014	1481.75	1251.8	1.18	0.18
11	6/9/2014	1429.55	1374.85	1.04	0.04
12	6/16/2014	1398.8	1464.8	0.95	- 0.05
13	6/23/2014	1384.8	1460.75	0.94	- 0.06
14	6/30/2014	1418.45	1418.4	1.00	0

Source: Secondary Data

Interpretation:

ROC is also referred to as simply Momentum, is a pure momentum oscillator that measures the percent change in price from one period to the next. From the above table it shows the buying and selling

opportunities of ICICI Bank shares. It is clearly inferred that the shares are overbought because $ROC > 0$. The table indicates that the shares as more buying opportunity when compared to selling opportunity.

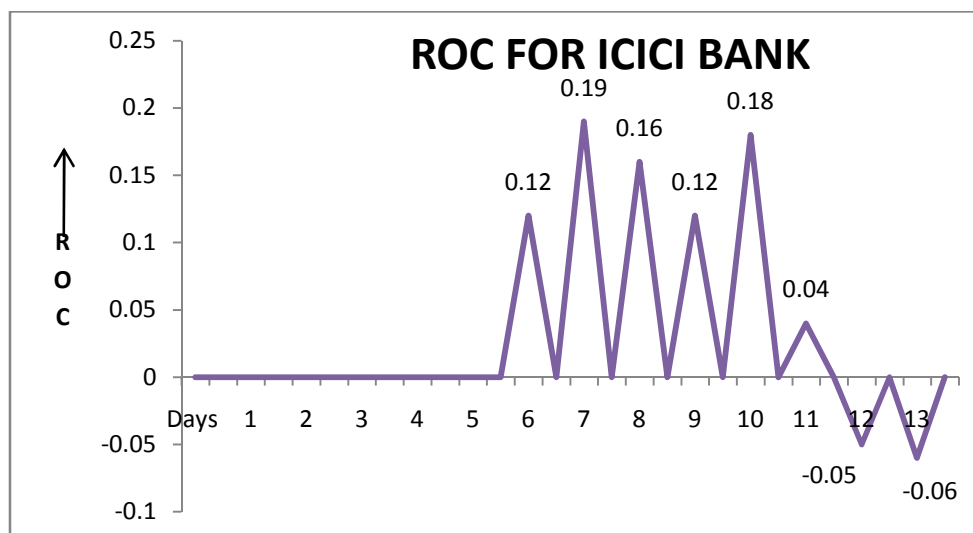


Chart 3: Chart showing the ROC calculation for ICICI Bank

4.3 Relative Strength Index (Rsi) Analysis:

Relative Strength Index (Rsi) Analysis For Icici Bank:

Table 5: Table showing the RSI calculation for ICICI Bank

Days	Date	Closing prices (Rs.)	Change Over Previous Days	
			Gain	Loss
1	4/1/2014	1230.35	-	-
2	4/7/2014	1235.5	5.15	-
3	4/14/2014	1262	26.5	-
4	4/21/2014	1269.3	7.3	-
5	4/28/2014	1251.8	-	-17.5
6	5/5/2014	1374.85	123.05	-
7	5/12/2014	1464.8	89.95	-
8	5/19/2014	1460.75	-	-4.05
9	5/26/2014	1418.4	-	-42.35
10	6/2/2014	1481.75	63.35	-
11	6/9/2014	1429.55	-	-52.2
12	6/16/2014	1398.8	-	-30.75
13	6/23/2014	1384.8	-	-14
14	6/30/2014	1418.45	33.65	-
TOTAL			348.95	160.85

Source: Secondary Data

$$RSI = 100 - [100 / (1 + RS)]$$

Where as $RS = \frac{\text{Average gain per day}}{\text{Average loss per day}}$

$$RS = 348.95 / 160.85$$

$$= 2.17$$

$$RSI = 100 - [100 / (1 + RS)]$$

$$= 100 - [100 / (1 + 2.17)]$$

$$= 100 - 31.55$$

$$= 68.45.$$

Interpretation:

The analysts from all over the globe made clear statement that if the RSI is above 70% then we can think of sell a share & if it's below 30% we can think of buying an equity share. From the above table it is inferred that RSI value for ICICI Bank shares is 68.45 this denotes almost overbought condition. This denotes the selling signal.

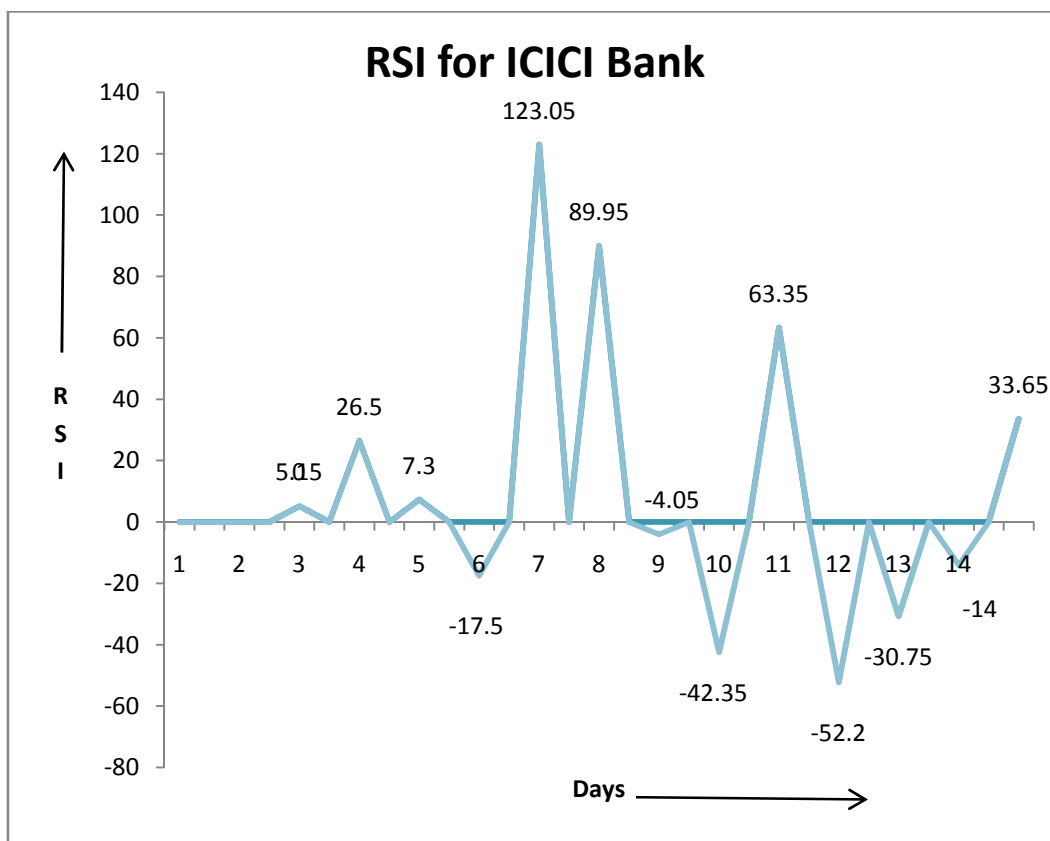


Chart 4: Chart showing the RSI for ICICI Bank

4.4 Beta Analysis:

Beta Analysis For Icici Bank

Table 6: Table showing the beta calculation for ICICI BANK

Days	Date	Closing prices	ICICI Bank Return[%] (Y)	BSE SENSEX Return [%] (X)	X*Y	X*X
1	4/7/2014	1994.3	4.729	1.205	5.698	1.452
2	4/14/2014	2017.8	1.178	-0.001	-0.0012	0.000001
3	4/21/2014	2083.15	3.239	0.262	0.849	0.069
4	4/28/2014	2045.8	-1.793	-1.253	2.247	1.570
5	5/5/2014	2172.7	6.203	2.635	16.345	6.943
6	5/12/2014	2414.3	11.120	4.903	54.521	24.040
7	5/19/2014	2755.25	14.122	2.370	33.469	5.617
8	5/26/2014	2541.9	-7.743	-1.928	14.929	3.717
9	6/2/2014	2732.15	7.485	4.869	36.444	23.707
10	6/9/2014	2606.35	-4.604	-0.663	3.052	0.440
11	6/16/2014	2580.6	-0.988	-0.486	0.480	0.236
12	6/23/2014	2636.75	2.176	-0.022	-0.048	0.00048
13	6/30/2014	2685.9	1.864	1.250	2.33	1.562
TOTAL			36.986	13.141	170.315	69.353

Source: Secondary data

Computation of return:

$$\text{Returns [\%]} = \frac{\text{Today's price} - \text{Yesterday's price}}{\text{Yesterday's price}}$$

* 100%

Calculation of beta:

$$\alpha = \bar{Y} - \beta \bar{X}$$

$$\text{Where as } \beta = \frac{n \sum xy - (\sum x)(\sum y)}{n \sum x^2 - (\sum x)^2}$$

Where as

Dependent variable (Y) = ICICI bank
Independent variable(X) = BSE Sensex

n = 13; $\sum x = 13.141$; $\sum y = 36.986$; $\sum x^2 = 69.353$; $(\sum x)^2 = 172.686$; $\sum xy = 170.315$

$$\beta = \frac{13 * 170.315 - 13.141 * 36.986}{13 * 69.353 - 172.686}$$

$$= 2.37$$

$$\alpha = \bar{Y} - \beta \bar{X}$$

Where as

$$\bar{Y} = 36.986 / 13 = 2.85$$

$$\beta = 2.37$$

$$\bar{X} = 13.141 / 13 = 1.011$$

$$\alpha = 2.85 - (2.37 * 1.011) = 0.45$$

Interpretation:

The above table computation shows the relationship between the ICICI bank stock return and BSE SENSEX return. It indicates that 1 percent change in BSE stock return would cause 2 percent change in the ICICI bank stock return. It shows that the stock ICICI bank is more volatile and riskier than SENSEX. If SENSEX increased by 1% then ICICI bank increased by 2% & vice versa. So the aggressive investors, those who want more return than SENSEX index, can buy ICICI bank shares by also considering some other technical indicators.

V. Findings, Suggestions And Conclusion:

5.1 Findings For Icici Bank:

1) The net profit margin ratio shows a fluctuating trend for the last five years, it shows the decreasing trend for the years 2010 and 2011 and in the year 2012 and 2013 it shows increasing trend.

2) The operating expenses to total income ratio shows the decreasing trend in the last five years.

3) The Earning Per Share (EPS) shows the increasing trend but in the year 2011 is shows a decreasing trend.

4) The stocks is said to be over bought as the ROC and RSI calculation shows. ROC is showing buying opportunity where as RSI is showing selling signal.

5) From Beta analysis it shows that, the stock ICICI bank is more aggressive than the Index SENSEX. (Beta = 2.37)

5.2 Suggestions For Icici Bank:

1) The Earning Per Share (EPS) shows the increasing trend in overall so that the company is consistently satisfying the investors, which is a good indicator.

2) The stocks is said to be over bought as the ROC and RSI calculation shows. ROC is showing buying opportunity where as RSI is showing selling signal.

3) From Beta analysis it shows that, the stock ICICI bank is more aggressive than the Index SENSEX. (Beta = 2.37)

Conclusion:

Buying and selling of the stock is not an easy task if the investors want to make money doing it. Millions of investors have lost the money in past trying to guess stock price movement. The study focused on the analyzing the fundamental and technical characteristics of selected banking securities through the fundamental and technical analysis. The bank selected is ICICI bank. The research has been conducted to know whether the analysis alone guarantee profit to the investors. The study reveals that the overall performance of the banks was good but due to some reasons prevailing in the market, the securities were overbought. So it's the right time for the investors to buy the shares of the ICICI bank for the long term purpose. Knowledge of the stock market is the key to success and emphasis should be on managing trading risk while the fundamental and technical analysis can help the investors to control them.

REFERENCES

Brown, Gregory and T. Michael, 2004. "Investor sentiment and the near-term stock market." *Journal of Empirical Finance*, 11(1): 1-27.

De Bondt, Werner, 1993. "Betting on Trends: Intuitive Forecasts of Financial Risk and Return." *International Journal of Forecasting*, 9(3): 355-371.

Fisher, L. Kenneth and Statman, 2000. "Investor sentiment and stock returns." *Financial Analysts Journal*, 56(2): 16-23.

Carl Ehrlich, 2000. "Using Oscillators with On-Balance Volume." *Technical Analysis of Stocks and Commodities*, 18: 30-39.

Christopher Narcouzi, 2000. "Chaikin's Money Flow." *Technical Analysis of Stocks & Commodities*, 18-8.

Buff Dormeier, 2001. "Buff Up Your Moving Averages." *Technical Analysis of Stocks & Commodities*, 19-2.

Perry, J. and Kaufman, 2005. "New Trading Systems and Methods." *John Wiley & Sons*, New York.

Arshanapalli, G. Bala and Karim Panju, 2007. "Equity-Style Timing: A Multi-Style Rotation Model for the Russell Large-Cap and Small-Cap Growth

and Value Style Indexes.” Journal of Asset Management, 8: 9-23.

Barberis, Nicholas, Andrei Shleifer, and Robert Vishny, 1998. “A Model of Investor Sentiment.” Journal of Financial Economics, 49(3): 307-343.

Lewellen and Jonathan, 2002. “Momentum and Autocorrelation in Stock Returns.” The Review of Financial Studies, 15(2): 533-563.