

Technical Efficiency Affecting Factors in Banking Sector in India

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ABSTRACT - Banking Sector in India is one of the growing sectors with great dynamics. There are various factors which affect the share prices of Banking Companies. It is very difficult quantify the impact of various factors on these companies. Technical analysis is the study of the market action, primarily through the use of charts, for the purpose of forecasting future price trends. It assumes that the market is efficient and the price has already taken into consideration along with the factors related to the company and the industry. Therefore, this study assesses the impact of banking sector on per capita gross domestic product (GDP) in India using a time series data during 1981-2019. It used per capita GDP as dependent variable, and broad money as a % of GDP, broad money to total reserves ratio, domestic credit to private sector as a % of GDP, final consumption expenditure as a % of GDP, annual consumer prices inflation, literacy rate and real interest rate as independent variables. Nainital bank, Lakshmi Vilas Bank, Kotak Mahindra Bank, ICICI Banks and HDFC Banks have highest technical efficiency among the private sector banks. The technical efficiency of other banks in private sector is seemed in efficient.

The resulted ROC value indicates Oversold and Overbought regions it generates Buy and Sell signals. It concluded that technical analysis is an effective tool for the investors to invest in short term.

Keywords: Banking sector, Statistical tools, Rate of change method, ROC, Investment, Technical efficiency, India.

I. INTRODUCTION

Banking industry is said to be the mirror of an economy's health [1]. A sound banking system serves as a significant trade enabler to the country. During the recent global crisis, Indian banking industry came out with flying colors on the back of stringent stipulations laid down by the Central Bank.

Technical analysis is the study of the market action, primarily through the use of charts, for the purpose of forecasting future price trends [2]. It is a method of evaluating securities by analyzing the statistics generated by the market activity, such as past prices and volume. It mainly seeks to predict the short term price levels. It is an important criteria for an individual to invest in a particular company. It also provides the base for decision-making in investment. It is one of the most frequently used yardstick to check and analyze underlying price progress [3]. For that matter a variety of tools was considered.

This refers to the study of market generated data like prices and volume to determine the future direction of prices movements.

Technical analysis involves the use of various methods for charting, calculating, interpreting graph and chart to assess the performances and status of the price [4]. It is the tool of financial analysis, which not only studies but also reflects the numerical and graphical relationship between the important financial factors.

In fact, the decision made on the basis of technical analysis is done only after inferring the market trends and judging the future movement of the stock on the basis of the market trend [5]. It assumes that the market is efficient and the price has already taken into consideration along with the factors related to the company and the industry. It is because of this assumption that many financial experts considers technical analysis is an efficient tool, which is effective for the short term investment [6].

The present study is an attempt to assess the answers on following research questions:

- How technical efficiency of Indian banking sector is varied over period of time?

- What are major variables which have significant influence of technical efficiency of banking sectors in India?
- How and why technical efficiency is varied across public, private and foreign banks in India?
- Which banks have higher technical efficiency among the public, private and foreign sector banks in India?
- How banking sector can increase the technical efficiency in India?
- With regards to aforementioned research questions, the present study is achieved following objectives:
- To examine the technical efficiency of public, private and foreign sectors banks in India.
- To assess the technical efficiency affecting factors of public, private and foreign sectors banks in Indian banking sector.

II. REVIEW OF LITERATURE

Brown and Jennings (1989) [7] showed that technical analysis has value in a model in which prices are not fully revealing and traders have rational conjectures about the relation between prices and signals. Neftci (1991) [8] showed that a few of the rules used in technical analysis generate well-defined techniques of forecasting, but even well-defined rules were shown to be useless in prediction if the economic time series is Gaussian. However, if the processes under consideration are non-linear, then the rules might capture some information. Tests showed that this may indeed be the case for the moving average rule.

Taylor and Allen (1992) [9] report the results of a survey among chief foreign exchange dealers based in London in November 1988 and found that at least 90 per cent of respondents placed some weight on technical analysis, and that there was a skew towards using technical, rather than fundamental, analysis at shorter time horizons.

Brock, Lakonishok and LeBaron (1992) [10] analysed 26 technical trading rules using 90 years of daily stock prices from the Dow Jones Industrial Average up to 1987 and found that they all outperformed the market.

Blume, Easley and O'Hara (1994) [11] show that volume Provides information on information quality that cannot be deduced from the price. They also show that traders who use information contained in market statistics do better than traders who do not.

Lui and Mole (1998) [12] report the results of a questionnaire survey conducted in February 1995 on the use by foreign exchange dealers in Hong Kong of fundamental and technical analyses. They found that over 85% of respondents rely on both methods and, again, technical analysis was more popular at shorter time horizons.

Neely (1998) [13] reconciles the fact that using technical trading rules to trade against US intervention in foreign exchange markets can be profitable, yet, long term, the

intervention tends to be profitable.

LeBaron (1999) [14] shows that, when using technical analysis in the foreign exchange market, after removing periods in which the Federal Reserve is active, exchange rate predictability is dramatically reduced.

Lo, Mamaysky and Wang (2000) [15] examines the effectiveness of technical analysis on US stocks from 1962 to 1996 and finds that over the 31-year sample period, several technical indicators do provide incremental information and may have some practical value.

Fernández-Rodríguez, González-Martel and Sosvilla-Rivero (2000) [16] apply an artificial neural network to the Madrid Stock Market and find that, in the absence of trading costs, the technical trading rule is always superior to a buy-and-hold strategy for both 'bear' market and 'stable' market episodes, but not in a 'bull' market. One criticism I have is that beating the market in the absence of costs seems of little significance unless one is interested in finding a signal which will later be incorporated into a full system. Secondly, it is perhaps naïve to work on the premise that 'bull' and 'bear' markets exist.

Lee and Swaminathan (2000) [17] demonstrate the importance of past trading volume. Neely and Weller (2001) use genetic programming to show that technical trading rules can be profitable during US foreign exchange intervention.

Cesari and Cremonini (2003) [18] make an extensive simulation comparison of popular dynamic strategies of asset allocation and find that technical analysis only performs well in Pacific markets.

Kavajecz and Odders-White (2004) [19] show that support and resistance levels coincide with peaks in depth on the limit order book and moving average forecasts reveal information about the relative position of depth.

Banking sectors in conducive to promote saving habits of the people for deposit in the banks for get better and safe return (Muniswamy, 2018). Capital formation works as blood for a nation. As banking sector collect deposits from depositors and provide collected amount to the people, business community, farmers and others as loans to earn profit. Thus, the banking sector is highly effective to create capital formation (Muniswamy, 2018) [20].

The above review of literature it points out that they focused on effectiveness of technical analysis of stocks in various countries. The domestic stock markets are in a sideways movement over the last couple of weeks. The current volatility in the stock markets can be attributed to negative sentiments due to a fall in global markets, profit booking by foreign institutional investors (FII), uncertainty over the US sub-prime crisis and high crude oil prices. It is very difficult to quantify the impact of these factors on various sectors. The investors made better returns by identifying and investing in the right sectors, based on market conditions. Most of the traders will

focus on using technical indicators to find and place their trades.

Therefore, it is important for investors to look for the sectorial trends in the market in order to get good returns on their investments.

III. NEED FOR THE STUDY

The last decade has seen many positive developments in the banking sector, with the opening up of the sector in early Nineties by the government. The industry has received a significant boost by the emergence of the private sector banks which increased competitiveness and enhanced the level of banking facilities to a top notch level. However, during the recent global recession, even the lagging public sector banks have made a big come back on the back of large up gradations to suit the hi-tech services provided by the private sector and foreign banks.

For a sustained economic growth for the country, unmatched banking and financial services is a must in order to facilitate the increasing need of swift and hassle-free transactions. Banking sector is an enabler to the economic growth. In this context, there is a need to study the past or historical price and volume movements of banking stocks to predict the future stock price behavior.

OBJECTIVES OF THE STUDY

- To know the trends and trend reversal pattern in banking sector stock prices.
- To identify the buying and selling points based on banking sector market price movements.

SOURCES OF THE DATA

The study mainly based on both the primary data and secondary data. The primary data collected through personal interviews with the investors, brokers and executive directors of brokerage firms. The secondary is collected from magazines, journals, newspapers and websites.

PERIOD OF THE STUDY

The study covers a period from January-1981 to February-2018.

Sample size:

The banking index has grown at a compounded annual rate of over 51 percent since April 2001 as compared to a 27 percent growth in the market index for the same period. The BSE bank index consists of 18 banks, out of which 4 banks are selected based on their market capitalization which constitutes State Bank of India (SBI), ICICI, HDFC and Axis Bank.

Statistical Techniques

The data analyzed with the help of statistical tools like Simple moving average, Moving Average Convergence and Divergence, Relative strength Index and Rate of change method.

DATA ANALYSIS

State Bank of India

Most chart patterns show a lot of variation in price movement. This can make it difficult for traders to get an idea of a security's overall trend. Once the day-to-day fluctuations are removed, traders are better able to identify the true trend and increase the probability that it will work in their favor. The below graph reveals the movement of stock price using various technical tools (Graph-1).

Simple Moving Average (SMA)

A moving average is the average price of a security over a set amount of time. By plotting a security's average price, the price movement is smoothed out. It simply takes the sum of all of the past closing prices over the time period and divides the result by the number of prices used in the calculation. For example, in a 10-day moving average, the last 10 closing prices are added together and then divided by 10. It is identified that there is downward trend and wide fluctuations took place in stock price movement in the beginning of the year 2008, later there was upward trend in stock price movement.

Moving Average Convergence and Divergence (MACD)

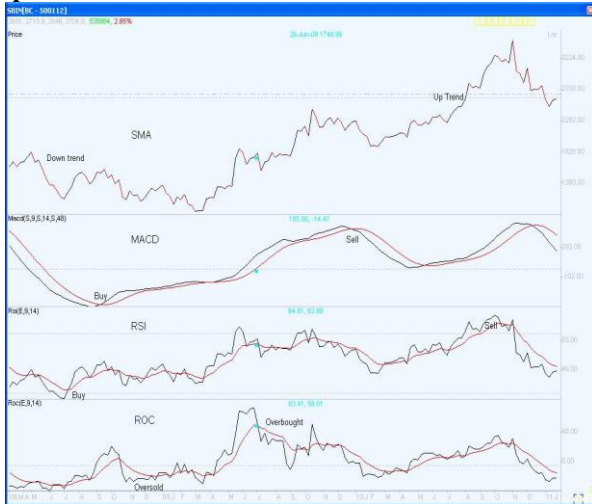
A moving average represents the underlying trend in the share price movement. It can be used to quickly identify whether a security is moving in an uptrend or a downtrend depending on the direction of the moving average.

The scrip price is rising, the short term average would be above the long term average. The short term average intersects the long term average from below indicating a further rise in price, gives a buy signal. When the scrip price is falling and if the short term average intersects the long term moving average from above and falls below it, the sell signal is generated.

Relative Strength Index (RSI)

RSI helps to signal overbought and oversold conditions in a security. The indicator is plotted in a range between zero and 100. A reading above 70 is used to suggest that a security is overbought, while a reading below 30 is used to suggest that it is oversold. This indicator helps traders to identify whether a security's price has been unreasonably pushed to current levels and whether a reversal may be on the way.

Graph1 State bank of India



When the RSI falls below thirty it is time to pick up the scrip. It found that share prices falling and RSI is rising in the oversold zone, it would indicate that share prices will increase in future so buy the stock. When RSI is more than seventy indicates that Share price in overbought zone, it would indicate the downfall of the price in future so sell the stock.

Rate of Change (ROC)

Rate of change (ROC) are simple technical analysis indicators showing the difference between today's closing price and the close N days ago. It helps to find out the overbought and oversold positions in a scrip and useful to identify the trend reversal.

It found that at end of the year 2008, ROC values are in negative zone. It indicates that oversold so buy the stock. The values are moving upward movement and reached to overbought zone it indicates sell the stock.

ICICI Bank: (Graph-2)

Simple Moving Average (SMA)

It observed that there was increasing trend in the year 2008, later there was fluctuations in share price and decreased to certain level and started upward trend in the share price.

Moving Average Convergence and Divergence (MACD)

It found the short term moving average below the long term moving average curves means there is fall in share price which indicates to sell the stock. When the short term moving average above the long term moving average indicates an increasing share price so buy the stock.

Relative Strength Index (RSI)

When the RSI values are less than thirty it is better to buy

the stock, if the RSI values are more than seventy indicates that to sell the stock.

Rate of Change (ROC)

ROC values are in negative zone, which indicates that oversold so buy the stock. When the values are positive it means shares are in overbought zone it indicates sell the stock.

HDFC Bank: (Graph-3)

Simple Moving Average (SMA)

The share prices are downtrend and wide fluctuations in share movement but in the long run the share prices are in increasing trend.

Moving Average Convergence and Divergence (MACD)

The share short term moving average curve crossed the long term moving average curve it indicates to buy the stock. When the short term moving average curve below the long term moving average curve it indicates to sell the stock.

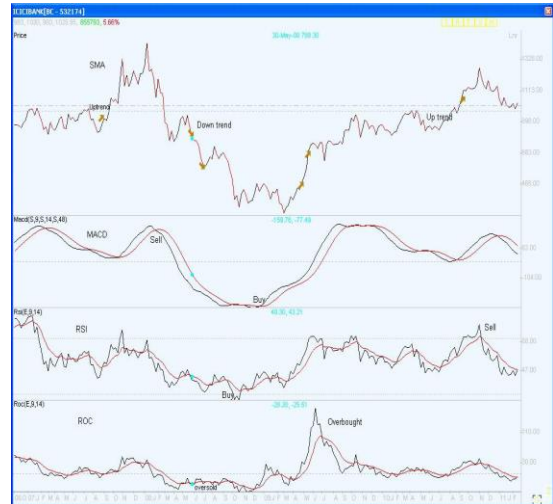
Relative Strength Index (RSI)

The RSI values are less than thirty, it indicates the share prices will increases in future so buy the stock. When the RSI values are more than seventy the stock is in overbought zone, so it is better to sell the stock.

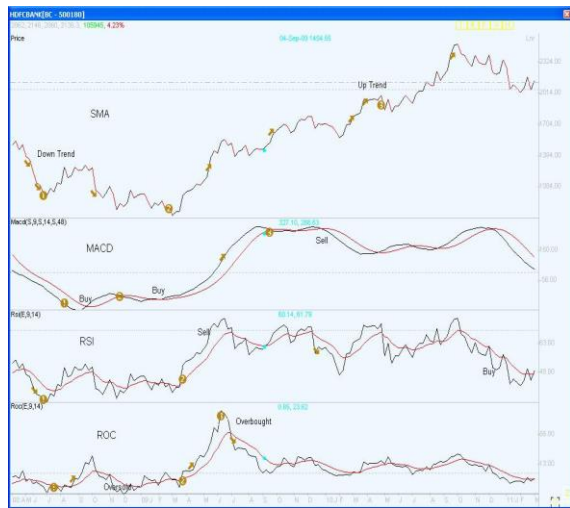
Rate of Change (ROC)

It shows that when ROC values are negative it is in oversold zone, it indicates to Buy the stock. If the values are positive indicates overbought region, it gives to Sell the stock.

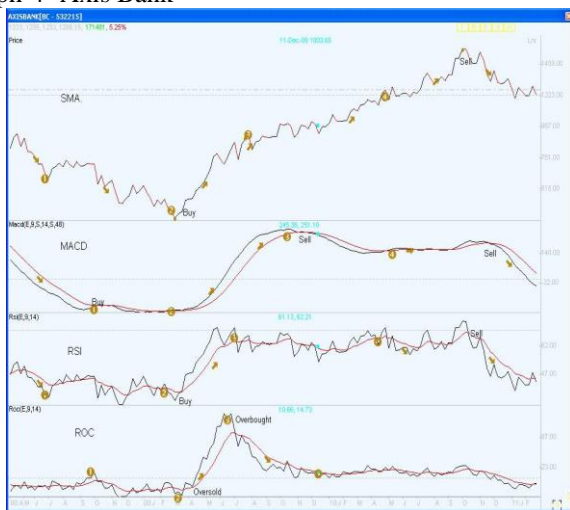
Graph-2 - ICICI Bank



Graph-3- HDFC Bank



Graph-4- Axis Bank

**AXIS Bank: (Graph-4)****Simple Moving Average (SMA)**

It found that there is downward trend and wide fluctuations took place in stock price movement in the beginning of the year 2008, later there was upward trend in stock price movement.

Moving Average Convergence and Divergence (MACD)

The short term average intersects the long term average from below indicating a further rise in price, gives a buy signal. When the scrip price is falling and if the short term average intersects the long term moving average form above and falls below it, the sell signal is generated.

Relative Strength Index (RSI)

The RSI values are rising in the overbought zone, it would indicate the downfall of the share price. It gives a clear signal of Sell. When the RSI is in the oversold region, it generates the Buy signal.

Rate of Change (ROC)

It shows that ROC values oscillate across the Zero line. The ROC line is below the zero line the price is falling indicates oversold region, it gives a buy signal. When the ROC line is above the zero line price is raising leads to overbought region, it generates the Sell signal.

IV. CONCLUSIONS

The current spot prices of traded assets provide information about future spot prices when market participants are heterogeneously informed. However, spot prices generally are imperfect aggregators of private information. If the current spot price depends on the unobserved current supply of the good as well as on the private information of market participants, then it is not a sufficient statistic for the private information. As a result, historical prices together with the current prices allow more accurate inferences about past and present signals than do current prices alone. Because current spot prices are not fully revealing, past price, that is, technical analysis, provide information to agents forming their demands.

The regression coefficient of explanatory variables with per capita GDP is estimated through linear, log-linear and non-linear regression models. The results shows that broad money to reserve ratio and Domestic credit to private sector have a positive impact on per capita GDP. Domestic consumption expenditure is also showed a positive impact on per capita GDP. Real interest rate and consumer price inflation have a negative impact on per capita GDP. Hence, it is suggested that India needs to control interest rate and consumer price inflation to increase the demand of goods and service in domestic market.

The ROC values are always may positive, negative or Zero. All the banks ROC values are oscillate across the zero line. The ROC value reaches the historic high values, the scrip is in the overbought region and a fall in the value can be anticipated. If the ROC value reaches historic low value, the scrip is in the oversold region, a rise price can be anticipated. Investor can sell the scrip in the overbought region and buy it in the oversold region.

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