

## Effectiveness of Technical Analysis in Banking Sector of Equity Market.

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**Abstract:** This study is aimed at undertaking technical analysis of selected companies included in the CNX Nifty. The project also demonstrates how technical analysis can be of valuable use for the investors in marking their investment decisions. To analyze tools of technical analysis can be used in forecasting stock prices. To find the right stock for investment and to provide the justification for the investment based on the candlestick charts and indicators. To know the movements (upward or downward) of stock prices of selected company stocks through Technical analysis. The descriptive method is used to study the price trend of fifteen stocks using MACD and RSI charting technique of technical analysis. The data used for analysis is secondary data obtained from the spider software for technical analysis. The sampling method used in this research is simple random sampling. The three banking companies are taken from the NSC quoted stocks where more than 9000 companies were listed.

**Key Words:** convergence, divergence, investor optimism, investor pessimism, oscillators...

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### I. Introduction

Technical Analysis is important to form a view on the likely trend of the overall market, and it is helpful to have some idea of how to go about selecting individual stocks. Naturally, all investors would like their investments to appreciate rapidly in price, but stocks, which may satisfy this wish, tend to be accompanied by a substantially greater amount of risk than many investors are normally willing to accept. However, it is important to understand that investors can be very conscious when it comes to stock ownership.

Technical analysis or charting is considered to be as a supplement to Fundamental Analysis of securities. Technical analysis can be applied to any market with a comprehensive price history. The premises of technical analysis were derived from empirical observations of financial markets over hundreds of years. Perhaps the oldest branch of technical analysis is the use of candlestick techniques by Japanese traders at least as early as the 18th century, and still very popular today. Stock markets have now turned to be one of the favourable sectors for investment. The prime reason for the same can be attributed to the overwhelming returns that the market has provided to the investors during the years. The investment pattern will differ according to the stocks considered and the risk appetite of the investor.

#### 1.1 Dow Theory- Its Cornerstone

New tools and theories have been produced and existing tools have been enhanced at a rapid rate in recent decades, with an increasing emphasis on computer-assisted techniques. Technical analysis is not concerned with why a price is moving but rather whether it is moving in a particular direction or in a particular chart pattern. Technical analysts believe that profits can be made by "trend following." In other words if a particular stock price is steadily rising then a technical analyst will look for opportunities to buy this stock. Until the technical analyst is convinced this uptrend has reversed or ended, all else equal, he will continue to own this security. Additionally, technical analysts look for various price patterns to form on a price chart and will take positions in anticipation of the expected move following that pattern. The various tools of technical analysis assist the technician in determining when trends have formed, ended, etc. and when particular patterns are unfolding.

#### 1.2 Technical Analysis: The Basic Assumptions

Technical analysis is a method of evaluating securities by analysing the statistics generated by market activity, such as past prices and volume. Technical analysts do not attempt to measure a security's intrinsic value, but instead use charts and other tools to identify patterns that can suggest future activity. The field of technical analysis is based on three assumptions:

1. The market discounts everything.
2. Price moves in trends.
3. History tends to repeat itself.

## II. Statement Of The Problem

Stock investment requires meticulous planning and careful evaluation of the underlying stock before making investment. A statistical data in the recent past indicated that 95 per cent of the investors in the stock markets are losers, since they undertake investment without any information and without discipline.

- Which stock to invest?
- What type of security to buy?
- When to sell the securities?
- Where to Invest?
- How to Invest?
- Whether hold, sell or buy securities?

It is much required for the investors to study the market and to understand market psychology so that they can make optimal decisions

### Objectives of the Study

The following are the main objectives of this study,

- To find the right stock for investment and to provide the justification for the investment based on the candlestick charts and indicators.
- To know the movements of stock prices of selected company stocks through Technical analysis.
- To know how best we can utilize these analyses to meet the financial goals.

### Research Design

This study is descriptive research. The descriptive method is used to study the price trend of fifteen stocks using MACD and RSI charting technique of technical analysis. The sampling method used in this research is simple random sampling. The fifteen companies are taken from the NSC quoted stocks where more than 9000 companies were listed. This study has been done for the calendar year Jan'2013 to Feb'2014. The Probability sampling method is used by the researcher. The sampling technique used here is Purposive sampling. The data used in this study are publicly available data collected from secondary source. The major source of the data is the website of NSE India.

### Statistical Tools Used

Most analysis is done for the short or intermediate-term, but some technicians also predict long-term cycles based on charts, technical indicators, oscillators and other data. Examples of common technical indicators include relative strength index, Money Flow Index, Stochastic, MACD and Bollinger bands. Technical indicators do not analyse any part of the fundamentals of a business, like earnings, revenue and profit margins. Technical indicators are used extensively by active traders, as they are designed primarily for analysing short-term price movements. The most effective uses of technical indicators for a long-term investor are to help them to identify good entry and exit points for a stock investment by analysing the short and long-term trends

## III. Review Of Literature

**C. L. Osler (2001)** provides a micro structural explanation for the success of two familiar predictions from technical analysis: (1) trends tend to be reversed at predictable support and resistance levels, and (2) trends gain momentum once predictable support and resistance levels are crossed. There are marked differences between the clustering patterns of stop-loss and take-profit orders, and between the patterns of stop-loss buy and stop-loss sell orders. These differences explain the success of the two predictions. **CESARI, R. and D. CREMONINI, Gupta, (2003)** examined the perceptions about the main sources of his worries concerning the stock market. A sample comprise of middle-class household's spread over 21 states/union territories. The study reveals that the foremost cause of worry for household investors is fraudulent company management and in the second place is too much volatility and in the third place is too much price manipulation. **Ravindra and Wang (2006)** examine the relationship of trading volume to stock indices in Asian markets. Stock market indices from six developing markets in Asia are analysed over the 34 month period ending in October 2005. In the South Korean market, the causality extends from the stock indices to trading volume while the causality is the opposite in the Taiwanese market. **Subrata Kumar Mitra (2002)** has identified persuasive reasons to believe the relationship between stock prices and determinants are complex nonlinear process. The analysis was performed by using moving average and filters combination of stock prices of ACC, Reliance's industries, State bank of India, TISCO and BSE index. He found the profitability changes widely with changes of periods and the two methods are giving profitable results that help us to believe that making profits in stock market is not just a matter of chance and there is need of analytical and systematic approaches to making profits in cumulative basis. **Parvez Ahmed, Kristine Beck, Elizabeth Goldreyer (2005)** studies the efficacy of using moving average technical trading rules with currencies of emerging economies. If technical trading rules are successful, they can become a risk

management tool for multinational firms and investors in emerging markets. They use 4 Variable Length Moving Average (VMA) trading models and compare them to a simple buy and hold strategy. Results support the effectiveness of trading models, which imply the presence of strong serial correlation among currency returns for emerging markets. Hence, the predictability of future currency prices will allow investors to create effective hedges in the often volatile emerging markets. **Muhannad A. Atmeh, Ian M. Dobbs (2006)** analysis the performance of moving average trading rules in Jordanian stock market. The conditional returns on buy or sell signals from actual data are examined for a wide range of trading rules. These are compared with conditional returns from simulated series generated by a range of models (random walk with a drift, AR (1), and GARCH-(M)) and the consistency of the general index series with these processes is examined. The empirical results show that technical trading rules can help to predict market movements, and that there is some evidence that (short) rules may be profitable after allowing for transactions costs, although there are some cautions on this. **Massoud Metghalchi, Jianjun Du, Yixi Ning (2009)** tests two moving average technical trading rules for 4 Asian markets. Identify that moving average rules do indeed have predictive power and can discern recurring price patterns for profitable trading. It supports the hypothesis that technical trading rules can outperform the buy-and-hold strategy. Break-even one-way trading costs are estimated to be high for all 4 markets. It was concluded from the statistical results that moving average rules are valid and indeed have predictive power. It is implied that the trading rules may be used to design a trading strategy that will beat the buy-and-hold strategy in the Hong Kong, Singapore, South Korea, and Taiwan markets.

#### IV. EXPLORING OSCILLATORS AND INDICATORS

##### 4.1. MACD: Moving Average Convergence and Divergence

The moving average convergence divergence (MACD) is one of the most well known and used indicators in technical analysis. It is used to signal both the trend and momentum behind a security.

In Common, the “MACD” is a trend following, momentum indicator that shows the relationship between two moving averages of prices. To Calculate the MACD subtract the 26-day EMA from a 12-day EMA. A 9-day dotted EMA of the MACD called the signal line is then plotted on top of the MACD. Here is a visual example using stock price

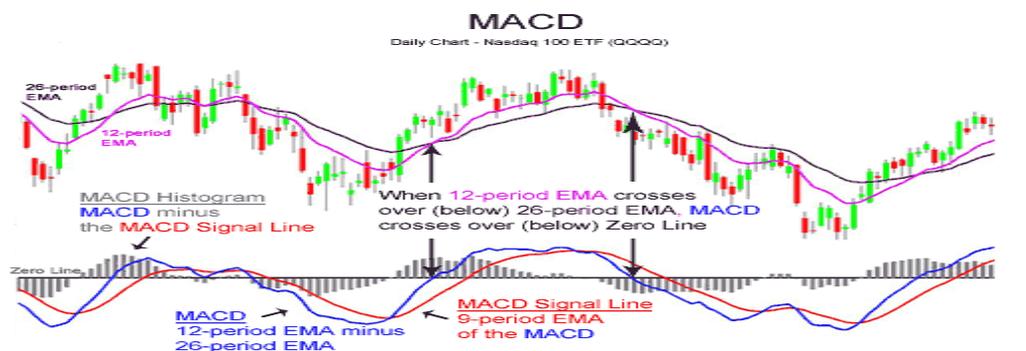


Figure 1: Moving Average Convergence Divergences (MACD)

Notice that back, in September the stock price dropped well below its 50-day average (the green line) there has been a steady downward trend since then and no really strong divergence until the end of December when it rose above its 50-days average and continued to rise for several weeks.

$$\text{MACD} = \text{Short-term EMA} - \text{Long-term EMA}$$

The most commonly used moving average values are 26-day and 12-day EMAs for the MACD calculation and a nine-day EMA of the MACD for the signal line. These values can be adjusted to meet the needs of the technician and the security. For more volatile securities shorter term averages are used while less volatile securities should have longer averages.

##### 4.2. Relative Strength Index –RSI

The relative strength index (RSI) is another one of the most frequently used and well known momentum indicators in technical analysis. It is used to signal overbought and oversold conditions in a security. The indicator is plotted between a range of zero to 100 where 100 is the highest overbought condition and zero is the highest oversold condition. The RSI helps to measure the strength of a security's recent up moves compared to the strength of its recent down moves. This helps to indicate whether a security has seen more buying or selling pressure over the trading period.

### Calculation

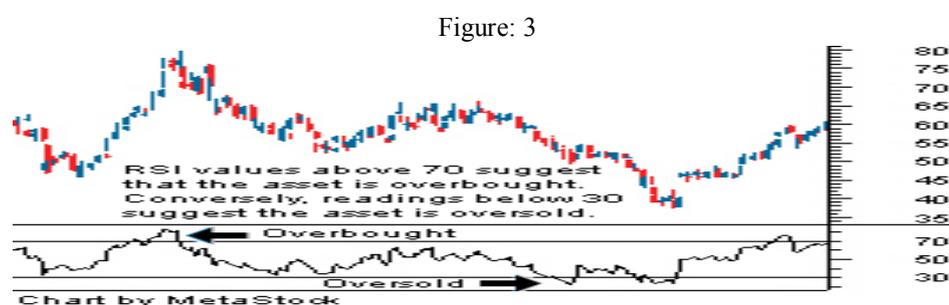
$$RSI = 100 - \frac{100}{1 + RS}$$

$$RS = \frac{\text{(Sum of the closing prices of up days/n)}}{\text{(Sum of the closing prices of down days/n)}}$$

n = trading periods

Like most indicators there are two general ways in which the indicator is used to generate signals - crossovers and divergence. In the case of the RSI, the indicator uses crossovers of its overbought, oversold and centreline.

The first technique is to use overbought and sold lines to generate buy-and-sell signals. In the RSI, the overbought line is typically set at 70 and when the RSI is above this level the security is considered to be overbought. The security is seen as oversold when the RSI is below 30. These values can be adjusted to either increase or decrease the amount of signals that are formed by the RSI.



A buy signal is generated when the RSI breaks the oversold line in an upward direction, which means that it goes from below the oversold line to moving above it. A sell signal is formed when the RSI breaks the overbought line in a downward direction crossing from above the line to below the line. Another crossover technique used in formulating signals is using the centreline (50). This technique is exactly the same as using the overbought and oversold lines to formulate signals. This technique will often form signals after a movement in the direction they are predicting but are used more as a confirmation than a signal compared to the other techniques. The relative strength indicator focuses on the momentum underlying the security and is a great secondary measure to be used by traders. It is important to note that the RSI is often not used as the sole generation of buy-and-sell signals but used in conjunction with other indicators and chart patterns.

### 4.3.About Companies:

#### Can Bk

Canara Bank provides various banking products and services primarily in India. It offers personal banking products and services, including savings, current, and salary accounts, as well as re-investment plans, tax saver and gold schemes, recurring deposits, deposit schemes for senior citizens and children, unclaimed deposits, and fixed deposits; and loan products, such as housing, home improvement, vehicle, site, personal, teachers, gold, online education, and consumer loans, as well as loans against shares/debentures/bonds/units, loans for senior citizens and owners of the property against rents receivable, mortgages, reverse mortgage loans for senior citizens, and loans for medical practitioners.

#### IDBI

IDBI Bank Ltd. is a Universal Bank with its operations driven by a cutting edge core Banking IT platform. The Bank offers personalized banking and financial solutions to its clients in the retail and corporate banking arena through its large network of Branches and ATMs, spread across length and breadth of India. We have also set up an overseas branch at Dubai and have plans to open representative offices in various other parts of the Globe, for encasing emerging global opportunities. Our experience of financial markets will help us to effectively cope with challenges and capitalize on the emerging opportunities by participating effectively in our country's growth process. The Bank had an aggregate balance sheet size of Rs. 3, 22,769 crore and total business of Rs 4, 23,423 crore as on March 31, 2013. IDBI Bank's operations during the financial year ended March 31, 2013 resulted in a net profit of Rs. 1882 crore.

### Ingysya Bk

**ING Vysya Bank** is a privately owned Indian multinational bank based in Bangalore, with retail, wholesale, and private banking platforms formed from the 2002 purchase of an equity stake in Vysya Bank by the Dutch ING Group. As of March 2013, ING Vysya is the seventh largest private sector bank in India with assets totalling 54836 crore (US\$8.8 billion) and operating a pan-India network of over 1,000 outlets, including 527 branches, which service over two million customers. ING Group, the highest-ranking institutional shareholder, currently holds a 44% equity stake in ING Vysya Bank, followed by Aberdeen Asset Management, private equity firm Chrys Capital, Morgan Stanley, and Citigroup, respectively.

## V. RESULTS AND DISCUSSIONS OF MACD AND RSI

### 5.1.1 Moving average convergence and divergence (MACD):-

It indicates CAN BK, for the period January 2013 to 20 February 2014

It can be observed that the moving average lines (EMA-9 and EMA-21) had 14 crossovers during the past 1 year. The stock of CAN BK was range bound for the past 1 year between the prices of Rs.200 to Rs.450. The fourth cross over in the beginning of April'13 shows the signal to buy and the EMA9 shows an uptrend till beginning of May'13 which lasted for only one month. The eight crossovers in August 2013 indicated the trend would turn bearish; prices dipped from Rs.400 to Rs.325, but were not able to sustain for longer period. The divergence in eighth cross over at the end of September'2013 was so prominent and clear. It also indicated the reversal of patterns to bearish trend. It can be clearly interpreted when the EMA 9 cuts EMA 21 from below; it indicates the arrival of bullish phase.

Graph 5.1.1 MACD OF CAN BK



After a sharp correction the prices turned bullish in the month of Oct'13 but the prices of the stock was range bound Rs.200 to Rs.275 from Oct'13 till now. The volume of trading was high in the previous three months.

### 5.1.2 Relative Strength Index: RSI

It indicates CAN BK, for the period Jan 2013 to 20 February 2014

Graph 5.1.2 RSI OF CAN BK



The RSI indicator follows the 30:70 rule and it shows the stocks of CAN BK fluctuates between the support and resistance level of only nine times during the year. The stock touches resistance level in the months of Mar, Aug, Sep'13 and end of Jan'14. This indicates the upward market trends associated with increasing

investor confidence and increased investing in anticipation of future price rise stocks are oversold. This is generally interpreted as a sign of the stock is becoming over valued and indication of bullish markets.

It is also inferred that stocks nears the support level four times in the month of April, May and Nov and Dec'13. This indicates the downward market trends so stocks are over bought (Prediction to sell). It is a transition from high investor optimism to wide spread investor pessimism. The RSI indicator provided an indication that the stock reached over sold regions (Prediction to buy) in the end of Jan'14 and overbought signal (Prediction to sell) in Nov and Dec'13.

### 5.2.1 Moving average convergence and divergence (MACD):-

It indicates IDBI, for the period January 2013 to 20 February 2014

Graph 5.2.1 MACD OF IDBI



The stock of IDBI was range bound for the past 6 months between the prices of Rs.56 to Rs.70. It can be observed that the moving average lines (EMA-50 and EMA-100) had 12 crossovers during the past 1 year. The appearance of shooting star in the month of May 2013 indicated an end to the uptrend and the reversal of uptrend is clearly indicated by the inverted hammer. For the past 9 months the IDBI shows the highest price of Rs.90 in the month of May'13. MACD shows the buy signal in the month of Feb'14 for only lesser profits.

### 5.2.2 RELATIVE STRENGTH INDEX: RSI

It indicates IDBI, for the period Jan 2013 to 20 February 2014

Graph 5.2.2 RSI OF IDBI



From the above chart, the RSI indicator follows the 30:70 rule and it shows the stocks of IDBI touches the resistance level sixteen times during the year. This indicates the upward market trends associated with increasing investor confidence so stocks are oversold. This is generally interpreted as a sign of the stock is becoming over valued and indication of bullish markets. The IDBI stock shows the strong resistance level at Rs.62, once the stock breaks the first resistance, it is better to go for stock with the target of Rs.90 in 2 months. It is also inferred that stocks nears the support level three times in the month of April, May and Nov'13. This indicates the downward market trends so stocks are over bought. It is a transition from high investor optimism to wide spread investor pessimism. The RSI indicator provided an indication that the stock reached overbought (Prediction to sell) in Nov'13 and over sold regions (Prediction to buy) in the end of Jan-14 indicating buy and sell signals respectively.

### 5.3.1 Moving average convergence and divergence (MACD):-

It indicates INGVYSYA BK, for the period January 2013 to 20 February 2014

Graph 5.3.1 MACD OF INGVYSYA BK



It can be observed that the moving average lines (EMA-9 and EMA-21) had 12 crossovers during the past 1 year. The stock of INGVYSYA BK was range bound for the past 1 year between the prices of Rs.425 to Rs.650. We can observe Doji in the end of July 2013. The third cross over in the end of April'13 shows the signal to buy and the EMA-50 shows an uptrend till May'13. The seventh crossover in the mid of August 2013 indicated the trend would turn bearish; prices dipped but was not able to sustain for longer period. The divergence in eighth cross over at the end of September'2013 was so prominent and clear. It also indicated the reversal of patterns to bullish trend. It can be clearly interpreted when the EMA 9 cuts EMA 21 from below; it indicates the arrival of bullish phase. After a sharp correction the prices turned bullish and reached new high range bound from Rs. 475 to Rs.575 till mid of October 2013. The volume of trading was high in the month of June'13. The MACD shows the buy signal in the beginning of February'14.

### 5.3.2 RELATIVE STRENGTH INDEX: RSI

It indicates INGVYSYA BK, for the period Jan 2013 to 20 February 2014

Graph 5.3.2 RSI OF INGVYSYA BK



From the above chart, the RSI indicator follows the 30:70 rule and it shows the stocks of INGVYSYA BK touches the resistance level thirteen times during the months Feb, march, Aug, Sep, Jan and Feb'2014. This indicates the upward market trends associated with increasing investor confidence so stocks are oversold. This is generally interpreted as a sign of the stock is becoming over valued and indication of bullish market. It is also inferred that stocks touches support level six times in the month of Jan, April, May, June'13. This indicates the downward market trends so stocks are over bought. It is a transition from high investor optimism to wide spread investor pessimism. The RSI indicator provided the trend reversal indication that the stock reached over sold regions (Prediction to buy) in the end of Aug, Sep'13 and Feb'14 and overbought (Prediction to go for sell) in Apr, May and June'13.

## **VI. FINDINGS AND RECOMMENDATIONS**

### **FINDINGS:**

1. The IDBI stock shows the strong resistance level at Rs.62, once the stock breaks the first resistance, it is better to go for stock with the target of Rs.90 in 2 months. MACD shows the buy signal in the month of Feb'14 for only lesser profits.
2. The stock of INGVYSYA BK was range bound for the past 1year between the prices of Rs.425 to Rs.650. The MACD shows the buy signal in the beginning of February'14, indicates the upward market trends associated with increasing investor confidence so stocks are oversold.
3. CANBK has shown only lesser growth, but the traded volume increased in the past quarter of 2013. The MACD lines show the buy signal and RSI also shows the oversold position of the stock.

### **Suggestions and Recommendations:**

The investment in stocks is based on the risk appetite of the investor. Hence the investments suggested for the year Jan'2013 to Feb'14 for various categories of investors from the stocks considered for analysis are as follows:

#### **Low Risk Appetite Investor**

INGVYSYABK is a low stock and returns are guaranteed over longer period of time.

#### **Medium Risk Appetite Investor**

IDBI is a large cap stocks and although they have shown lesser or negative returns during the past one year, they have the capability to rebound back in next six months. The stocks show significant trend reversal patterns and chances of bullish trend are available.

#### **High Risk Appetite Investor**

CANBK has undergone severe price correction and it is available at a low price for investors. But the stock seems range bound and is likely to give returns only in 2 or 3 years. CANBK has also undergone correction and high divergence between the crossovers.

## **VII. CONCLUSION**

Technical analysis is a useful technique in guiding investment decisions. In light of our study on fifteen companies, we have seen how technical analysis can be used to predict the possible futures swings of stock prices. After analysing the companies, the following conclusion was drawn.

According to RSI as the Gain increases, there is increase in the RSI value, which indicates that there is increase in the share price. This states to the investor that it is a strong sell signal. Whenever there is decrease in the share price value, RSI value decreases which indicates the investor that it is a strong buy signal. In general, we can conclude from the result that technical indicators can play useful role in the timing stock market entry and exit. By applying technical indicators brokers or investors enjoy substantial profit. Technical analysis cannot be answer for the questions faced by analyst. It has to be in combination with fundamental analysis to have maximum effect.

Analysis can offer great insight but if used improperly, they can also produce false signals. As the stock prices are dynamic in nature, combination of Fundamental analysis and technical analysis will increases the percentage of accuracy and thus giving an idea to the investor to invest in that stock which will yield him good returns.

Technical analysis gives investor a better understanding of the stocks and also gives them right direction to go on further to buy or sell the stocks .Investors must also take into account various factors like Government of India budget, company performance, political and social events, climatic conditions etc. before any decision is made. The scrip should also be fundamentally good. Therefore, the small investors and traders should not blindly make an investment rather they should analyse using the various tools to check if the scrip is technically strong.

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