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# AN EMPIRICAL STUDY TO ANALYSE OVERBOUGHT AND OVERSOLD PERIODS OF SHARES LISTED IN CNX BANKEX

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**Abstract**

Relative Strength Index is one of the best and widely used technical analysis tools in financial market. Though it is popular in the international context, it is not widely used in Indian market due to lack of awareness and its application. Keeping this in mind the present study aimed to exhibit the application of Relative Strength Index in identifying overbought and oversold shares of companies listed in Banking Indices of National Stock Exchange. The secondary date were the share price collected from 01.11.2017 to 31.11.2018 and by using Relative Strength Index and Simple Moving Average, the share price movement were analysed to understand its behaviour. Paired sample t test was also used to its significance price movement during the overbought / oversold period. The outcomes of the research are discussed in detail in this study.

***Keywords:***

Bank;

NSE;,

Relative Strength Index;

Share Price Behaviour;

Simple Moving Average.

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## 1. Introduction

Dilemma always exists in choosing right stock for investing in right timing. Before making investment in stock, the investors need to assess the trend of a share and time to buy and sell. If it is a short term investment, the investors are highly depends on the technical analysis. Though many technical indicators are available to suggest the right investment pattern, investors failed to use the right tool, as most of them are not aware about the right tools and its applications. One such famous technical analysis tool is Relative Strength Index [RSI] which is not widely used in Indian context. It is responsibility of the researchers to exhibit the way in which the RSI can be used in choosing right portfolio for any investment. In the technical analysis RSI (Relative strength Index) and SMA (Simple Moving Average) helps us to understand what was happening in the particular share whether it is overbought or oversold. Also these tools can help us to figure out the overbought and oversold period of any share. Keeping this in mind, the present study aimed to understand the overbought and oversold periods of shares listed in Banking Indices of National Stock Exchange.

### 1.1. Relative Strength Index [RSI]

The objective of an investor in investing in stock market is to make capital appreciation or to make huge profit. But the difficulty lies in selecting appropriate stock which would yield them capital gain, else they may face face loss of investment in a short span of time. Many technical analysis tools are available to reduce the risk of investment and to increase the return, of which Relative Strength Index [RSI] is a powerful instrument which can support the investors to reduce the loss and to gain capital. According to J.Welles Wilder, RSI can be defined as a tool to measure the speed and price of stock price over a period of time. The value of RSI is ranging from zero to 100, wherein greater than 70 is called as overbought share and lesser than 30 is called as oversold shares.

There is no standard rule on the number of days to be considered for calculating RSI for a research. However, as per J.Welles Wilder, 9 and 14 days shall be considered for short and medium term trading, while 56, 100 and 200 days can be considered for long term trading. Daily share price can be used for calculating RSI with respect to short and long term period, while

weekly or monthly share price movement can be considered for calculating RSI for long term period.

## 2. Research Method

(VK Arthi,Dr. R Saravanan, 2018) were conducted a study with aim of comparing the major blue chips shares in the Bombay stock exchange to suggest the investor to buy, sell or hold the share and also to suggest the best investment alternative using the RSI(Relative strength index), ROC (Rate of change), SMA(Simple moving average)technical indicators. For these analysis top 2 industry in automobile industry and information technology industry in 10 companies is taken.

(Thangjam Ravichandra, Ashish Chacko & Shruti Ganguly, 2015)conducteda study and suggested the investors how to react to various given situations in the market. For the purpose of this study four companies have been considered, two from the Information Technology Sector and two from the Banking Sector respectively. Out of this one company is an already established company and the other company is an emerging company. The methods used for the purpose of this study are Simple Moving Average, Rate of Change (ROC) and Relative Strength Index (RSI). The simple moving average method helps in calculating the trend that a particular share had in the year, whether upward or downward, whereas ROC helps in calculating the oversold or undersold regions for any share and RSI talks about the optimum point to buy and sell.(Ghulam, Neil Diamond, 2014)noted that technical analysis worked better for day trading rather than longer held positions, while fundamental analysis provided for a very sound basis for analysis on long term holdings.

(Bhargavi.R, Gumparthi, & Anith, 2017)used to find the validity of RSI in Indian stock markets, we evaluate the performance of short term investments by computing 14 day RSI for the chosen shot term investment stocks at a future point of time (March 2014), and the performance is evaluated by comparing it with the initial 14 day RSI. In this case most of the results proved positive, thus showing that RSI is valid in Indian stock markets.(Weing-Keung Wong, Mehar, Boon - Kiat, 2010)focused on the role of technical analysis in signaling the timing of stock market entry and exit. Test statistics are introduced to test the performance of the most established of the trend followers, the Moving Average, and the most frequently used counter-

trend indicator, the Relative Strength Index. Using Singapore data, the results indicate that the indicators can be used to generate significantly positive return. It is found that member firms of Singapore Stock Exchange (SES) tend to enjoy substantial profits by applying technical indicators. This could be the reason why most member firms do have their own trading teams that rely heavily on technical analysis.

## 3. Objectives of the study

The objectives of the study are

1. To assess the overbought and oversold period of selected Banks listed in Banking Indices of National Stock Exchange.
2. To understand and assess the fluctuations of different bankslisted in Banking Indices of National Stock Exchange.

## 4. Methodology

The present study is based on secondary data where the samples were selected based on convenient basis. Samples are the companies listed in Banking Indices of National Stock Exchange and its share price from November 1, 2017 to November 31, 2018.Tools such as Simple Moving Average and Relative Strength index are used in this study to assess the stock pattern with respect to overbought and oversold periods. Paired sample t test were also used to check the existence of significant difference between overbought/oversold period and the normal period with respect to share price.

**Simple Moving Average (SMA)**: 14 days of average share price movement is considered as short term moving average. This chart helps to understand the behavior of the stock.

**Relative Strength Index (RSI):** This method helps an investor to identify the strengths and weaknesses in the market. If RSI crosses above 70, there maybe downward share trend and it is time to sell the shares. If the RSI falls below 30 then that would indicate an upward trend and hence it is time for the investor to buy the shares. The formula for calculating RSI is given below.

Relative Strength Index = 100 – 100/( 1 + RS)

Relative Strength = Average Gain/ Average Loss

Average Gain = Sum of the gains over the past 14 periods / 14

Average Loss = Sum of the losses over the past 14 periods / 14

The null hypothesis framed for this study is give below.

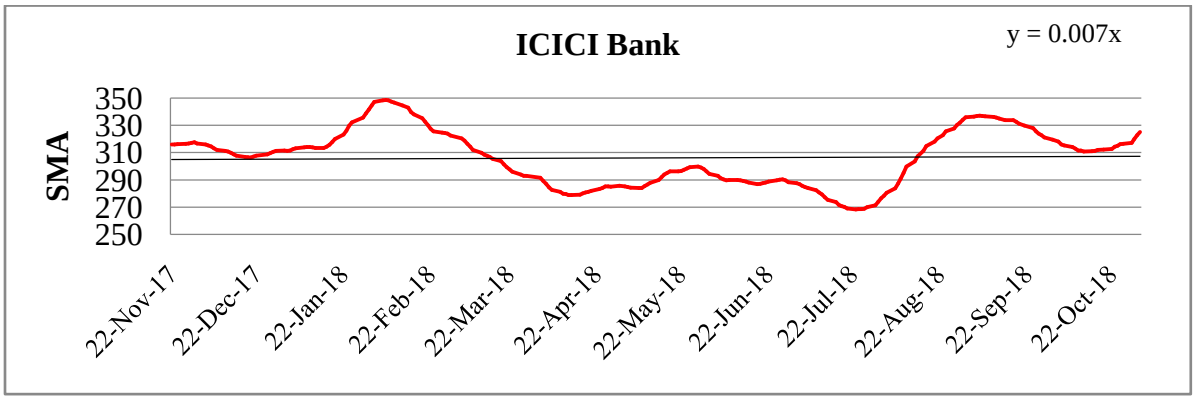
Null hypothesis (Ho):There is no significant difference among share price during overbought and oversold period of the selected bank.

## 5. Analysis and Interpretation

The behavioral pattern of share price movements during the study period was traced using Simple Moving Average and Relative Strength Index. The outcomes of the analysis with respect to different banks are discussed in this section.

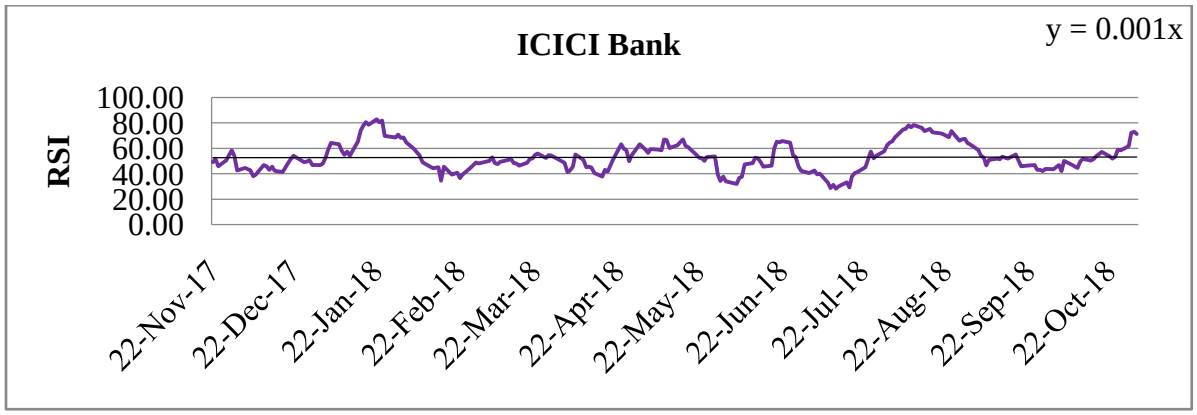
### 5.1. Share Price Behaviour of ICICI Bank

**Chart No: 01 – SMA of ICICI Bank's Share Price**




The above simple moving average chart shows that the share price of the ICICI Bank flow fromRs.316 in the month of November 2017 and it moves to Rs.343 in the month of February 2018. Later it was in decreasing trend till July 2018 (Rs.249) then it has increasing trend.

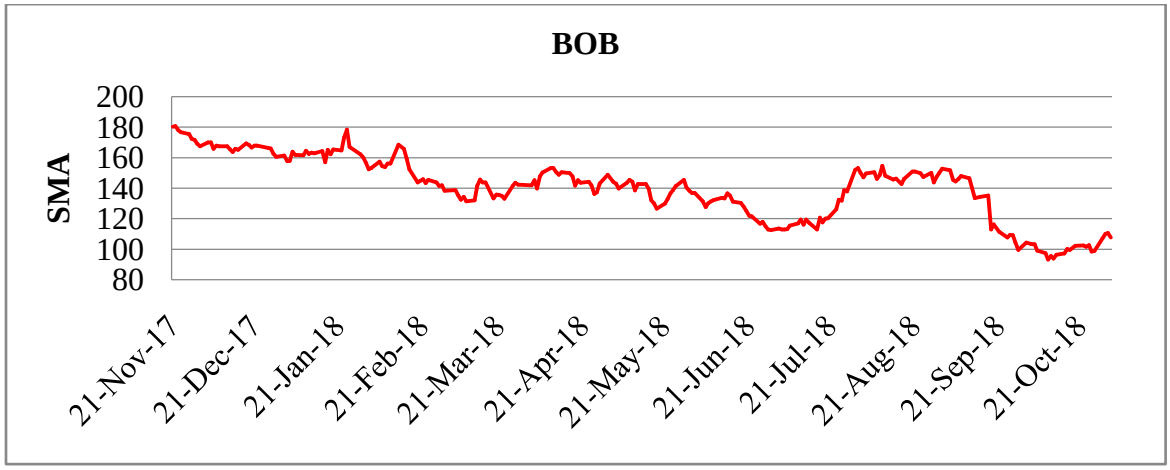
**Chart No: 02 – RSI of ICICI Bank's Share Price**




The results of RSI (Relative Strength Index) show that an overbought exists in the market of ICICI share from 06.08.2018 to 24.8.2018. The result of paired sample ttest also shows the absence of significant difference between the overbought period (16.10.2018 to 30.10.2018) and the normal period. This is due to within short span of time, the ICICI shares are overbought by the shareholders on October 30$^{th}$ and 31$^{st}$ 2018. Though it is price decreased to Rs.265 in the month of July 2018, immediately it is recovered before end of July 2018. There was no significant oversold period for this share during the study period. It is evident for the positive behavior of ICICI share price during the study period.

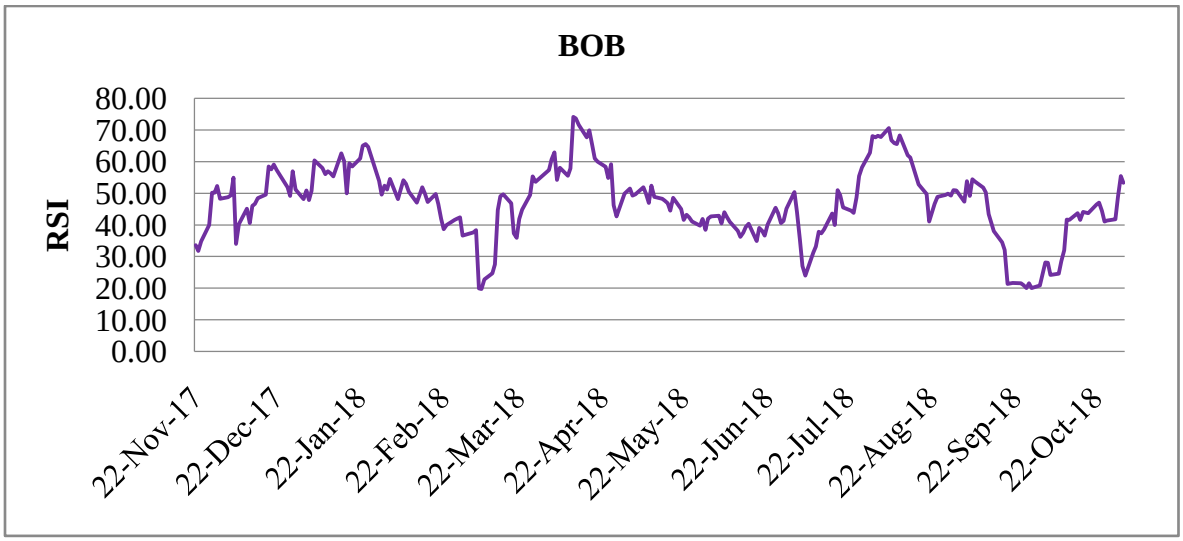
## 5.2. Share Price Behaviour of Bank of Baroda (BOB)

**Chart No: 03 – SMA of BOB's Share Price**



The above figure depicts the trend of Baroda Bank. From the chart it is understood that the share price is reduced from Rs.184 on November 2017 to Rs.93 on October 2018. The SMA curve shows that the share price is in down trend during the study period (Nov 2017 to Oct 2018).

**Chart No: 04 – RSI of BOB's Share Price**




The study report of RSI (Relative Strength Index) shows that an overbought exists in the market of Bank of Baroda share from 11.04.2018 to 13.04.2018 (3 days). Apart from these days, the share price was in down trend and the oversold (from 19.9.18 to 18.10.2018). The results of paired sample t test also shows there is significant difference in the overbought period and the normal period. It is evident for the downtrend of Bank of Baroda share price during the study period.

## 5.3. Share Price Behaviour of Axis Bank

**Chart No: 05 – SMA of Axis Bank's Share Price**

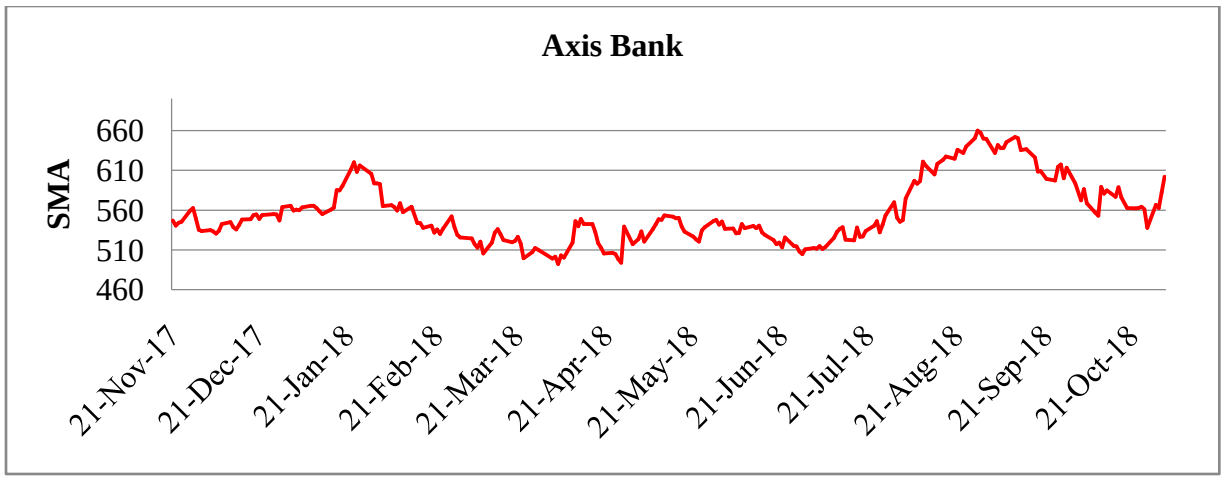
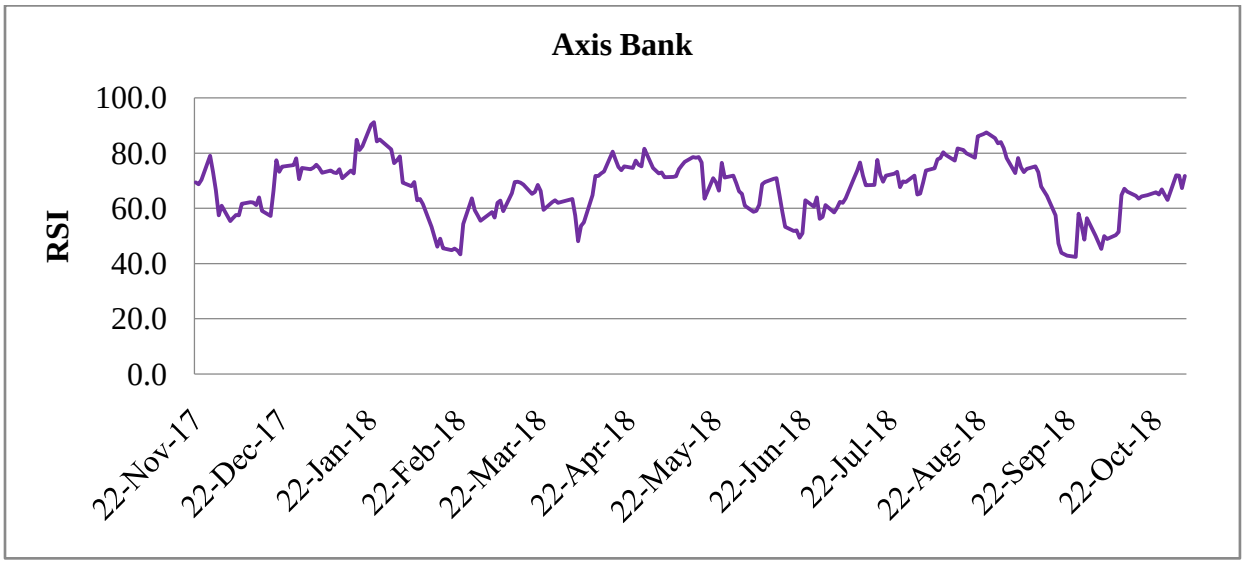


**Chart No: 06 – RSI of Axis Bank's Share Price**




From the above chart, the share price behavior of AXIS Bank was ranged from Rs.492 to Rs. 660. The share is overbought during 20.12.17 to 01.02.18. The results of paired sample t test also shows there is significant difference in the price of Axis Bank in overbought period and the normal period in next overbought period from 20.12.17 to 01.02.18. During the month of April, May, July, August, September and October 2018, the share was overbought. From the SMA, it is evident that the share price is in increasing trend from Rs.473 (Nov 2017) to Rs.551 (February 2018) and again it faced down trend upto July 2018. Then it reaches Rs.660 in the month of August.

## 5.4. Share Price Behaviour of IndusIndBank

**Chart No: 07 – SMA of IndusInd Bank's Share Price**

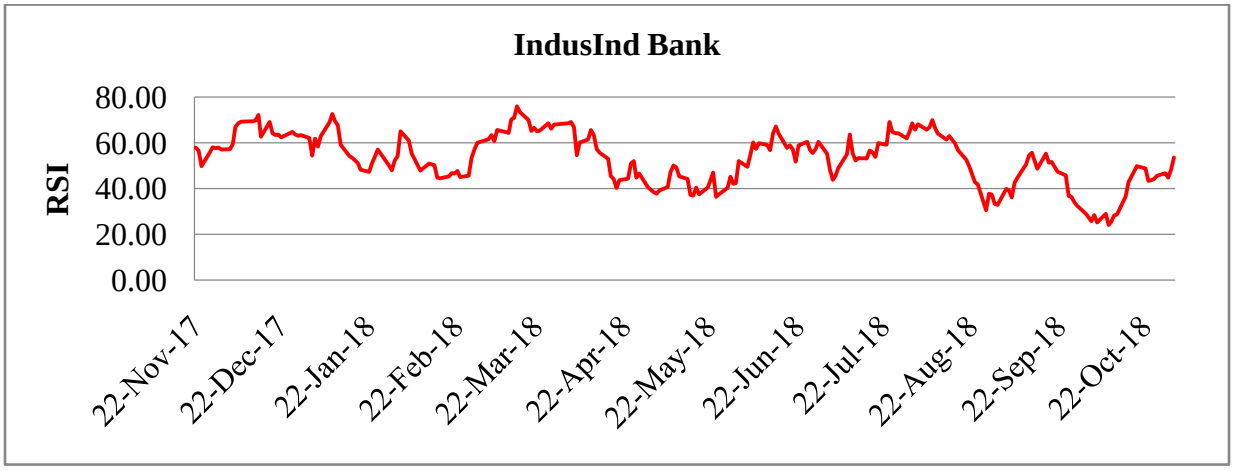
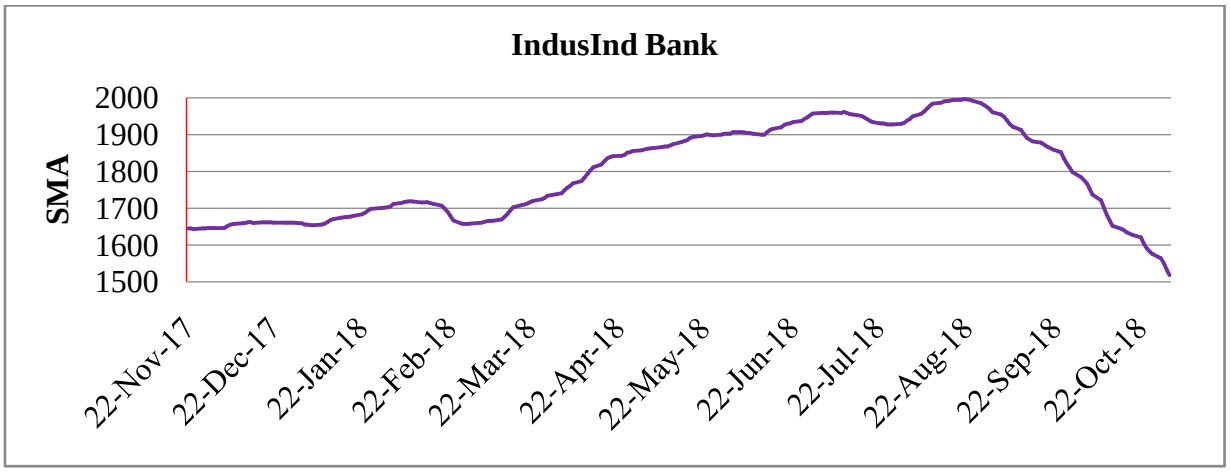


**Chart No: 08 – RSI of IndusInd Bank's Share Price**




From the SMA, it is understood that the share price is in increasing trend from Rs.1643 (Nov 2017) to Rs.2023 (August 2018) and again it faced down trend and reaches to Rs.1518 in the month of October. The share is overbought for short term period from 13.03.18 to 17.03.18. The share is oversold from 01.10.18 to 12.10.18, it is being supported by paired t test when compared oversold period and normal period price of the share. The paired t test value is 0.001, thus Ho is rejected and it is concluded that there is significant difference in the price of the share during normal period and oversold period of the IndusInd bank. The SMA of IndusInd shows the decrease in the price from August 2018 onwards

### 5.5. Share Price Behaviour of Yes Bank

**Chart No: 09 – SMA of Yes Bank's Share Price**

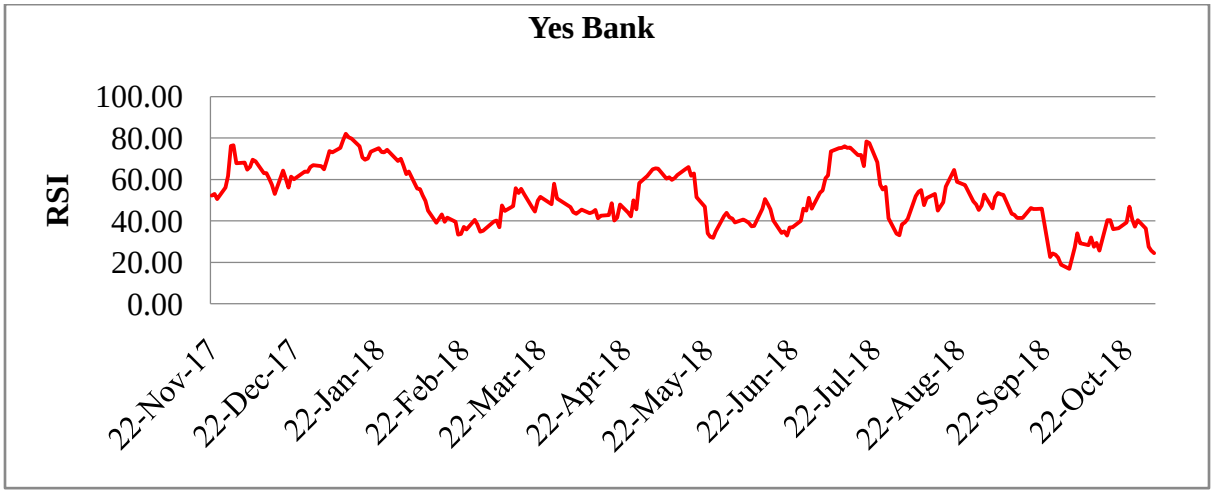
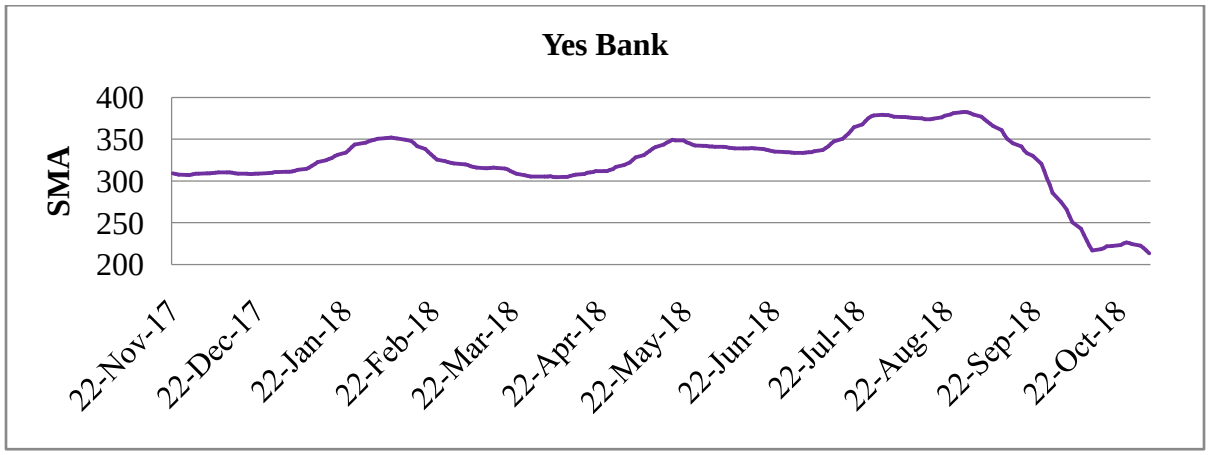


**Chart No: 10 – RSI of Yes Bank's Share Price**




Earlier period from 04.01.18 to 25.01.18, the Yes bank share is overbought by the investors because of the positive trend in the price of the share. The SMA shows that the price of the share is increasing from 317 (Nov 2017) to Rs.351 (Feb 2018), then again it had down trend upto April and again the share price hit Rs.381 in the month of August 2018. Latter it started to decrease to rs.213 in the month of October 2018. Due to the decreasing trend the share is oversold in the month of September and October 2018. From the paired t test for the oversold period from 24.09.18 to 12.10 18, there is no significant difference in the price of the oversold period and normal period, because the share price is decreasing frequently, in between oversold happens again and again (Oversold on 30th and 31st October 2018). The decision of the investor depends on the trend of the share price of Yes Bank. There is direct relationship between the trend of share price and overbought and oversold of the Yes Bank share.

## 5.6. Share Price Behaviour of Punjab National Bank (PNB)

**Chart No: 11 – SMA of PNB'sShare Price**

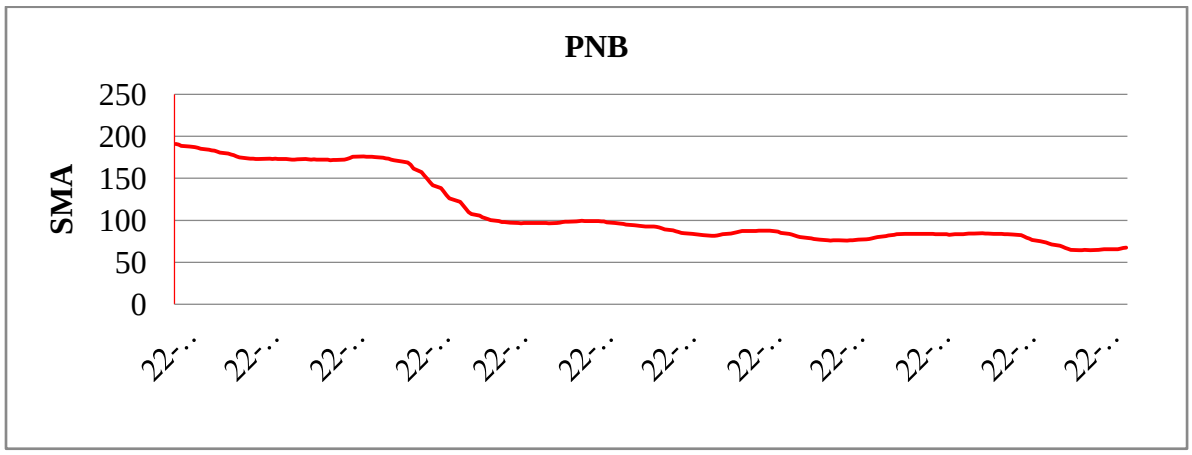
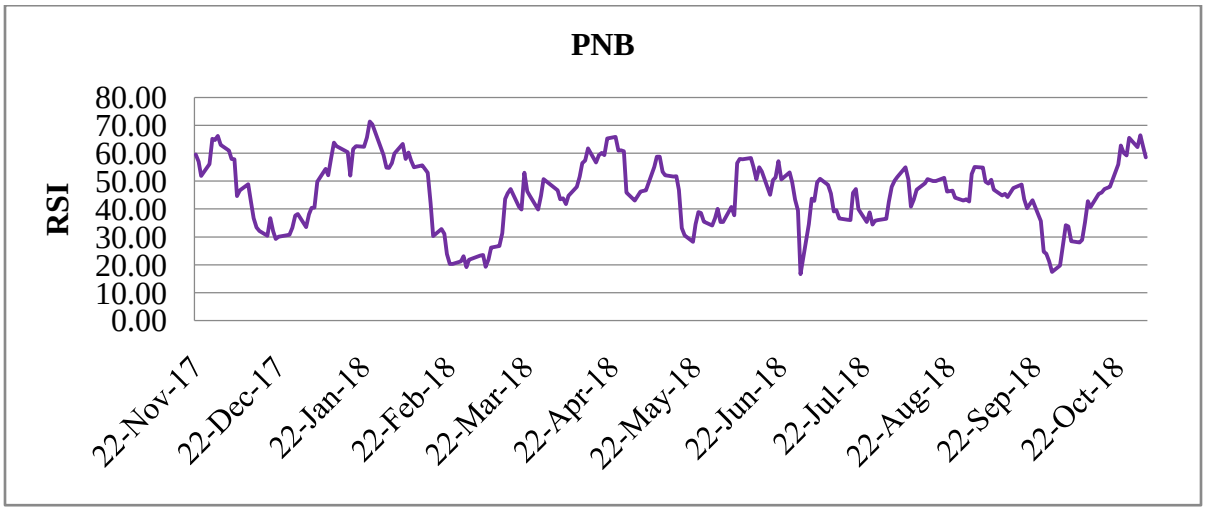


**Chart No: 12 – RSI of PNB's Share Price**




## 5.7. Share Price Behaviour of State Bank of India (SBI)

**Chart No: 13 – SMA of SBI's Share Price**

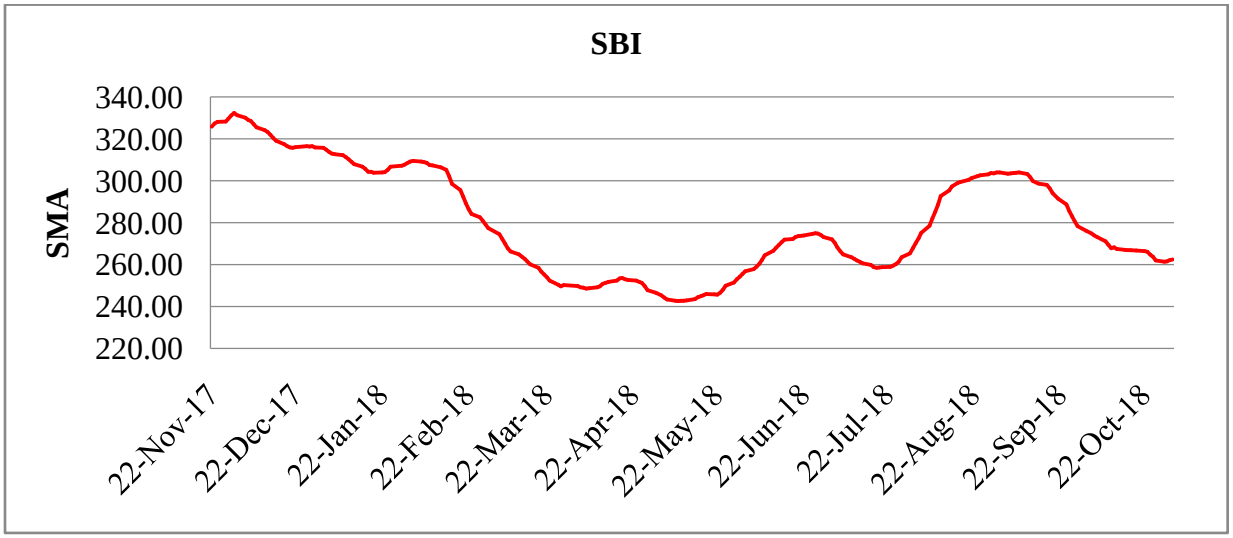
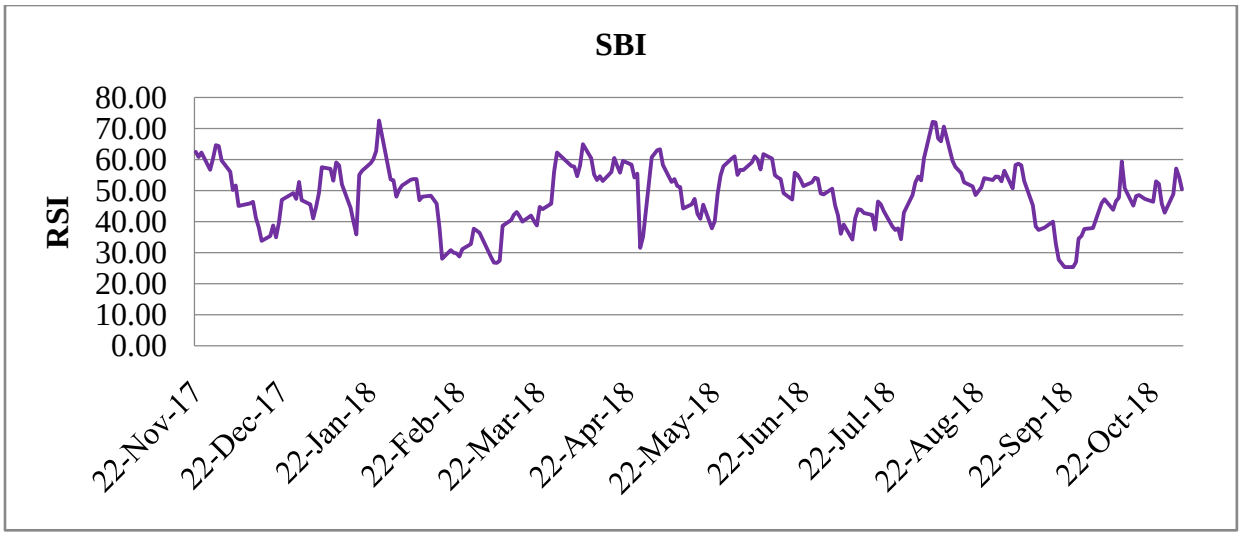



**Chart No: 14 – RSI of SBI's Share Price**




The price of the SBI reached Rs.337 in the month of November 2017 it had decreasing trend, the price gown down to 242 in the month of May 2018. The price of the share has stable when compared to other bank shares, it is proven by RSI that this share didn't overbought or oversold for more number of days (9 days in the month of February, March and September 2018). It is overbought only for 3 days in the month of January and August 2018.

## 6. Conclusion

Relative Strength Index is one of the effective tool in understanding stock's behaviour and cane be used in portfolio construction both. Though RSI was used widely in an international context, this study proved the reliability of RSI in Indian context too. The study also proved and recommended the right period of buying or selling shares using SMA and RSI. Though RSI is a powerful technical analysis tool, it is also suggested to use fundamental analysis while investing in stock market to maximize the return.

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