TECHNICAL ANALYSIS ON A STOCK USING DIFFERENT TECHNICAL TOOLS

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Abstract: **Investment timing plays a major role in the stock market. Investors face difficulties while finding opportunities. The researcher after analyzing the research paper found that technical analysis plays a key role in order to study the future behavior of stocks. This topic has been chosen by the researcher to study the trending technical tools used by many technical analysts like, how these tools help the investors to make a rational investment decision, how an investor can get buy/sell signals through these tools and how these tools are different but beneficial for the investors.**

The Research design included secondary sources to meet the objective of the research. The Research was done using the historic stock data of "Reliance Industries ltd" from 1st January 2020 till 3rd July 2020. The tools that are used for the research are, Simple Moving Average (SMA), Exponential Moving Average (EMA), Relative Strength Index (RSI) and Moving Average Convergence Divergence (MACD).

Many of the investors and traders do not rely on technical analysis, as it is complex in nature. The reason for conducting this study is to help the investors and traders to understand these tools easily. This research paper can also help them to make better investment decisions in the stock market.

Keywords: **Technical Analysis, Simple Moving Average, Exponential Moving Average, Relative Strength Index, Moving Average Convergence Divergence**

I. INTRODUCTION

[1] Investment

To invest means to allocate money with the expectation of some benefits in the future. People invest to build their wealth. They save and then invest their savings. The benefits which are earned through savings are reinvested. Investment is necessary in order to increase wealth. It is an opportunity to increase financial worth. One must invest wisely to gain higher returns and avoid losses.

[2] Different Types of Investments

- Fixed Deposits
- Bonds
- Gold
- Stocks
- Mutual Funds
- Public Provident Fund
- Exchange Traded Funds
- National Pension Scheme
- Real estate
- Other

[3] Investment in Stocks

With the Indian stock market going upside down even if there is a slight change at the global level, it is certainly worth considering whether you should invest your money in the trading market or seek for some reliable and safe options like FDs and real estate. Investment in the stock market is nothing short of a gamble, especially if you think about the volatile difficulties during the trading. It is the place where people buy and sell shares and gain profit or even lose some amount based on the rate of the stock on that day.

Today investing in stock markets and other financial securities are the most profitable investments compared to other investments. However, investing in the stock market not only ensures higher returns but also bears a higher risk. Therefore, the combination of these two has created a challenging task for the investors to invest in.

In order to make better investment decisions there are some techniques, which are used to predict the future behavior of the stocks and some of the two important techniques are:

- ✓ Fundamental Analysis
- ✓ Technical Analysis

[4] Fundamental Analysis

Fundamental Analysis is one of the most important techniques used to study the future behavior of stocks. It is a process of looking at a business at the most basic i.e. fundamental financial level. It examines the key ratios of a business in a way to determine its financial health. It is mainly used for long-term investments. Fundamental analysis can be done with fundamental factors, which can be categorized as:

- Qualitative Fundamental Analysis
- Quantitative Fundamental Analysis

Qualitative Fundamental Analysis:

Qualitative fundamental analysis is measured based on the size or quantity. The key factors that are used to measure qualitative aspects are:

- Business model
- Competitive advantage
- Management
- Corporate governance

Quantitative Fundamental Analysis:

Quantitative fundamental analysis is measured in or expressed in numerical terms. A company discloses its financial statements in order to show its financial performance. Financial statements are the medium through which quantitative analysis is measured. The key factors that are used to measure quantitative aspects are:

- Balance Sheet
- Income Statement
- Statement of Cash Flow

[5] Technical Analysis

Technical analysis is the other most important technique used for investment decisions. It is used for analyzing any of the securities like stocks, commodities, currencies, etc. It is the examination and prediction of the price movements in the financial markets. It is done with the help of historical price charts and market statistics. If traders can identify the previous market patterns, then they can be accurate in predicting the future market price of the stocks. In simple words, it is the study of past market data to forecast the direction of future price movements. It usually looks at price, volume, and psychological indicators over time.

Technical analysis is a much effective technique than fundamental analysis. Technical analysis is mainly used for short-term trading/intraday trading. Technical analysis is the oldest security analysis.

A technical analyst believes that the securities move in a very predictable trend and pattern and this trend continue until something happens to change the trend. Price levels are predictable if something doesn't happen to change.

II. OBJECTIVES

[1] OBJECTIVES

• To study and understand buy and sell signals by using selected technical indicators.

• To understand the technical tools used in technical analysis to predict the future behavior of the stock.

[2] SCOPE

• The study is related to technical analysis only.

• The analysis has been done using only one stock.

• The analysis has been done using 6 months of historic data of Reliance Industries Ltd.

• The analysis involves limited and mostly used technical tools out of the various tools.

III. LITERATURE REVIEW

1.1 Asha E. Thomas (2014). The aim of the study was to do the evaluation of the technical analysis through the Indian perspective and to find out how useful it is for the Indian stock market. The study discussed the observed evidence from the stock market. The evidence research was conducted on two traditional technical tools, Momentum & Contrarian. The first test was done on the market efficiency of the Indian stock market, which resulted in weak-form inefficiency during 2007-2012. The second was to test the efficiency of these two technical tools to predict future returns. The entire study was divided into several formation periods. 29 companies were taken as a sample and a hypothesis t-test was conducted to find the results. The result revealed that both the technical tools did not give any merits to the Indian stock market. The study states that technical analysis is complex in nature and experience is a key to success in using technical analysis

1.2 Shyam Sundhar & Ram Kumar Kakani (2006). The Authors found that the corporate finance textbook states that if the markets are weak form efficient then the technical analysis is of no use. Also, technical analysis has been given a lot of importance in the Indian stock market. Therefore, the research was conducted on two popular technical tools, Simple Moving Average (SMA) and Displayed Moving Average (DMA) to test the weak form efficiency of the Indian stock market. A 15-year time period and data from NSE was used to do the research. It was applied to the broad market indices and tested on a portfolio stock. The results stated that both the moving averages were successful with the fact that markets were weak form inefficient to the extent of the sample data. It also revealed that extra returns could be earned by using DMA that can be more than the trading cost involved in the transaction.

1.3 Valarmathi A, Kowsalya P (2016). The research article talks about the important role of technical analysis in the secondary market and its usefulness towards trading. The research was conducted based on the past prices of IT stocks. The research was done using two technical tools, Exponential Moving Average and Relative Strength Index on five IT companies. It was found that after the recession the IT companies gave short-term gains to the investors. Also, the market trends of these companies went upward. It concluded that investors can invest in these stocks considering the economic scenario and the short-term traders can reply on the technical charts for trading decisions. The study finally concluded that technical analysis is good for short-term investments than for long-term investments.

IV. RESEARCH METHODOLOGY

[1] Statement of Problem

In India, Investors who are willing to invest in the stock market are increasing every year. The best stock market investor like "Rakesh Jhunjhunwala", and some others are the inspiration and one of the reasons behind the increased rate of the investors. Investors nowadays are willing to take the risk and invest in shares because the stock market is one of the investments which has the highest returns. Many investors look for higher returns in a shorter period.

Though the stock market has many pros, it also has many cons. Most of the traders fail due to wrong decisions. This is because they always forget that trading is a profession and requires skills that need to be developed over the years. Therefore, trading decisions should always be taken based on the research, techniques, and methods.

The study is undertaken using some important technical tools to predict the price movements.

[2] Data Source

The data was collected by means of historical prices of Reliance Industries for period of 6 months from www.nseindia.com.

[3] Data Type

The type of data is used in this research is Quantitative Data (Descriptive and exploratory).

[4] Data Tool

• Simple Moving Average (SMA)

• Exponential Moving Average (EMA)

• Relative Strength Index (RSI)

• Moving Average Convergence Divergence (MACD)

V. DATA ANALYSIS AND INTERPRETATION

TECHNICAL ANALYSIS USING 20 DAYS SIMPLE MOVING AVERAGE AND 20 DAYS EXPONENTIAL MOVING AVERAGE METHOD

Table 5.1: 20 days SMA & 20 days DMA of Reliance Industries Ltd from 1st January 2020 to 3rd July 2020

DATE	CLOSE PRICE	20 DAYS SMA	20 DAYS EMA
01/01/20	1495.47		
02/01/20	1520.88		
03/01/20	1522.76		
06/01/20	1487.35		
07/01/20	1510.67		
08/01/20	1499.68		
09/01/20	1533.36		
10/01/20	1533.11		
13/01/20	1528.90		
14/01/20	1514.64		
15/01/20	1509.63		
16/01/20	1523.21		
17/01/20	1565.75		
20/01/20	1517.56		
21/01/20	1519.49		
22/01/20	1518.65		
23/01/20	1512.61		
24/01/20	1507.36		
27/01/20	1492.40		
28/01/20	1457.48	1513.55	1513.55
29/01/20	1465.75	1512.06	1509.00
30/01/20	1428.90	1507.46	1501.37
31/01/20	1398.39	1501.24	1491.56
01/02/20	1370.26	1495.39	1480.01
03/02/20	1372.79	1488.50	1469.80
04/02/20	1412.41	1484.13	1464.33
05/02/20	1434.40	1479.18	1461.48
06/02/20	1443.91	1474.72	1459.81
07/02/20	1420.24	1469.29	1456.04
10/02/20	1423.21	1464.72	1452.91
11/02/20	1438.91	1461.18	1451.58
12/02/20	1456.14	1457.83	1452.01
13/02/20	1460.06	1452.55	1452.78

14/02/20	1472.64	1450.30	1454.67
17/02/20	1464.46	1447.55	1455.60
18/02/20	1452.28	1444.23	1455.29
19/02/20	1490.02	1443.10	1458.59
20/02/20	1471.50	1441.31	1459.82
24/02/20	1431.23	1438.25	1457.10
25/02/20	1402.95	1435.52	1451.94
26/02/20	1378.28	1431.15	1444.93
27/02/20	1372.74	1428.34	1438.05
28/02/20	1316.13	1424.23	1426.44
02/03/20	1302.46	1420.84	1414.63
03/03/20	1330.98	1418.75	1406.67
04/03/20	1326.53	1414.45	1399.03
05/03/20	1299.14	1407.69	1389.52
06/03/20	1258.08	1398.40	1377.00
09/03/20	1102.66	1382.52	1350.87
11/03/20	1142.38	1368.48	1331.02
12/03/20	1051.59	1349.11	1304.41
13/03/20	1096.47	1331.13	1284.60
16/03/20	1005.68	1308.41	1258.04
17/03/20	999.39	1284.75	1233.41
18/03/20	959.72	1259.51	1207.34
19/03/20	908.46	1232.32	1178.88
20/03/20	1010.58	1208.35	1162.85
23/03/20	875.52	1178.55	1135.48
24/03/20	934.21	1153.70	1116.31
25/03/20	1071.06	1137.10	1112.00
26/03/20	1064.62	1121.42	1107.49
27/03/20	1055.46	1105.56	1102.54
30/03/20	1022.62	1090.88	1094.92
31/03/20	1101.96	1080.86	1095.59
01/04/20	1070.46	1067.83	1093.20
03/04/20	1068.04	1054.91	1090.80
07/04/20	1195.03	1049.70	1100.73
08/04/20	1180.91	1045.84	1108.37
09/04/20	1207.71	1051.09	1117.83
13/04/20	1178.04	1052.88	1123.56
15/04/20	1139.21	1057.26	1125.05
16/04/20	1157.68	1060.32	1128.16
17/04/20	1213.50	1070.71	1136.29
20/04/20	1232.72	1082.38	1145.47
21/04/20	1224.40	1095.61	1152.99
22/04/20	1350.50	1117.71	1171.80
23/04/20	1358.57	1135.11	1189.59
24/04/20	1403.99	1161.53	1210.01
27/04/20	1416.82	1185.67	1229.70
28/04/20	1414.64	1202.84	1247.32

29/04/20	1412.76	1220.25	1263.07
30/04/20	1453.22	1240.14	1281.18
04/05/20	1421.87	1260.10	1294.58
05/05/20	1447.23	1277.37	1309.12
06/05/20	1447.87	1296.24	1322.33
07/05/20	1493.04	1317.49	1338.59
08/05/20	1547.08	1335.09	1358.45
11/05/20	1561.89	1354.14	1377.82
12/05/20	1466.30	1367.07	1386.25
13/05/20	1496.40	1382.98	1396.74
14/05/20	1435.45	1397.80	1400.43
15/05/20	1458.90	1412.86	1406.00
18/05/20	1440.65	1424.22	1409.30
19/05/20	1408.15	1432.99	1409.19
20/05/20	1434.65	1443.50	1411.61
21/05/20	1440.05	1447.98	1414.32
22/05/20	1431.60	1451.63	1415.97
26/05/20	1423.70	1452.61	1416.70
27/05/20	1446.95	1454.12	1419.58
28/05/20	1472.65	1457.02	1424.64
29/05/20	1465.20	1459.64	1428.50
01/06/20	1520.45	1463.00	1437.26
02/06/20	1536.10	1468.72	1446.67
03/06/20	1542.45	1473.48	1455.79
04/06/20	1579.95	1480.08	1467.62
05/06/20	1580.60	1484.46	1478.38
08/06/20	1570.05	1485.61	1487.11
09/06/20	1537.10	1484.37	1491.87
10/06/20	1572.00	1489.65	1499.50
11/06/20	1537.50	1491.71	1503.12
12/06/20	1588.80	1499.38	1511.28
15/06/20	1615.00	1507.18	1521.16
16/06/20	1617.50	1516.02	1530.33
17/06/20	1615.40	1526.39	1538.43
18/06/20	1656.25	1537.47	1549.66
19/06/20	1759.50	1553.44	1569.64
22/06/20	1747.20	1569.22	1586.55
23/06/20	1720.05	1584.04	1599.27
24/06/20	1727.35	1598.06	1611.46
25/06/20	1717.95	1610.32	1621.61
26/06/20	1742.60	1624.19	1633.13
29/06/20	1723.15	1634.33	1641.70
30/06/20	1703.35	1642.69	1647.57
01/07/20	1737.90	1652.46	1656.18
02/07/20	1760.55	1661.49	1666.12
03/07/20	1787.50	1671.84	1677.68

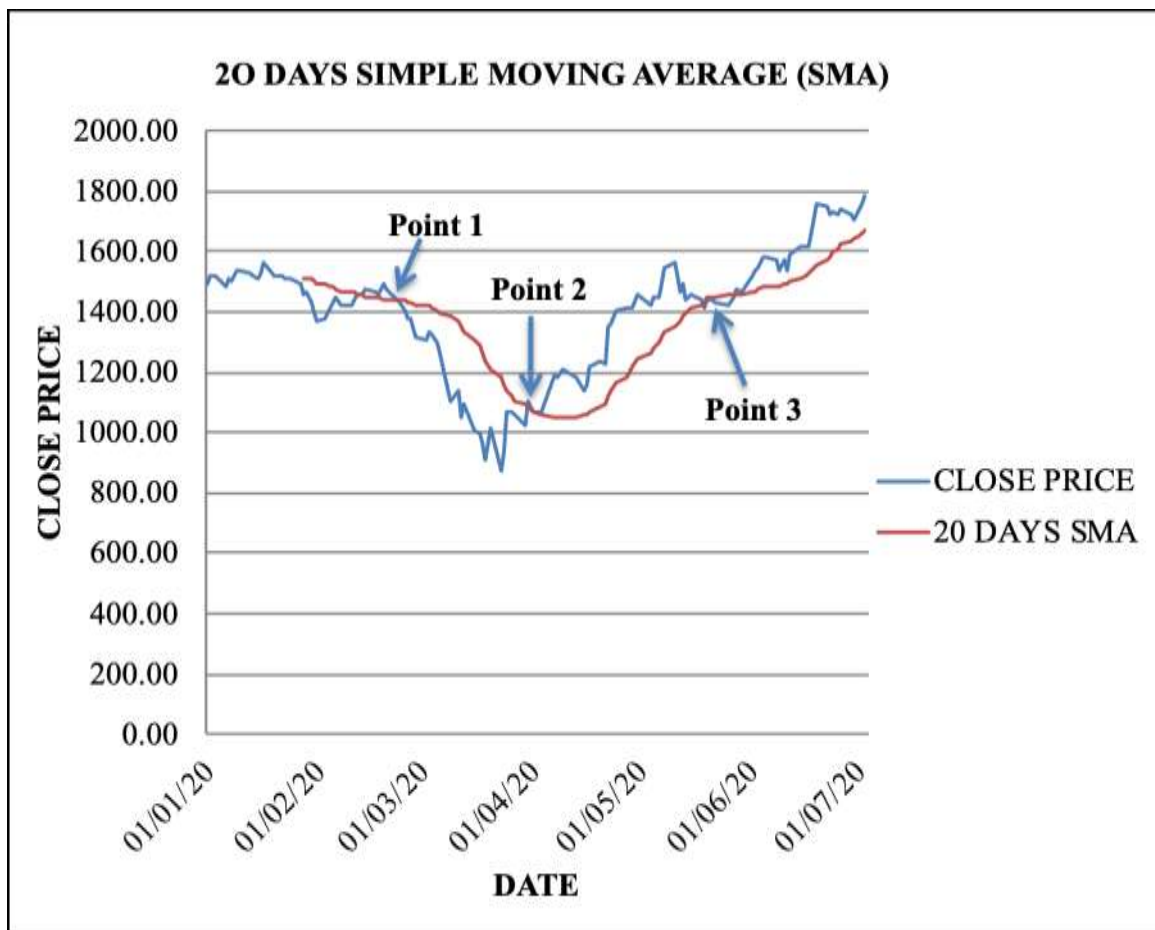**SOURCE: Data collected from www.nseindia.com**

Figure 1: Showing SMA of Reliance Industries Ltd from 1st January 2020 to 3rd July 2020

INTERPRETATION OF SMA

Point 1: Both the lines intersected with each other on 24/02/2020 when the closing price was around 1440 Rs. It was a clear indication of selling the shares as after that point the closing price went below the moving average. The shares fell down till 875.52 Rs. because of the impact of COVID 19.
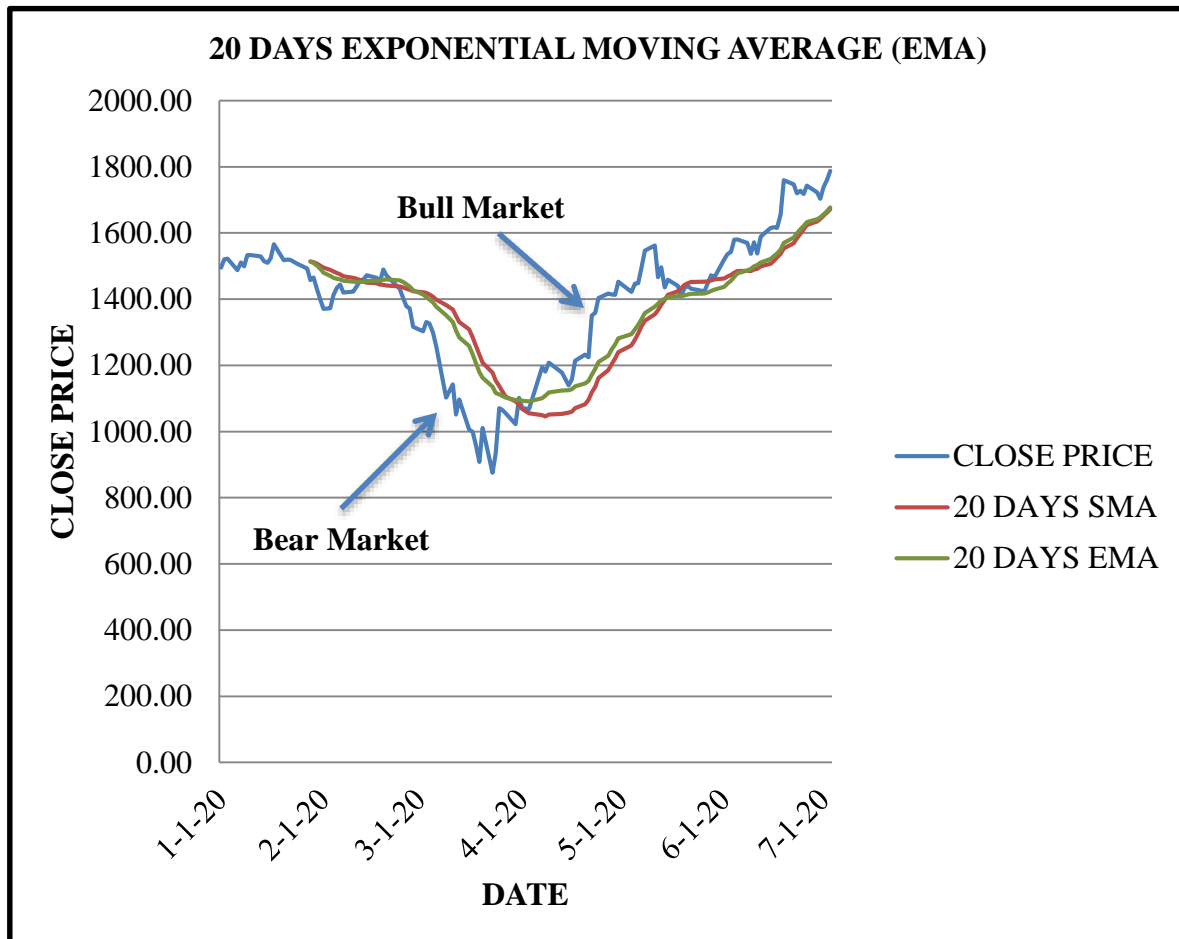
Figure 2: Showing EMA of Reliance Industries Ltd from 1ˢᵗ January 2020 to 3ʳᵈ July 2020

Point 2: On 30/03/2020 again the lines intersected but here the closing price went above the moving average, which gave a buying signal. The closing price at that point was 1090.88 Rs.

Point 3: On 26/05/2020 again there was an indication to buy the shares when the close price was Rs.1452.61. As on 03/07/2020, the closing price is 1787.50.

INTERPRETATION OF EMA

One more line is added in the above chart, which includes 20 days exponential moving average. As you can see there is hardly a difference between the red line and the green line, which means both the technical tools give nearly the same results. But if we look carefully, The SMA line is following the EMA line. In simple words, if it is a bull market the close price is above the EMA, which is above the SMA. Similarly, if it is a bear market the close price is below the EMA, which is below the SMA. It concludes that EMA is more effective compared to SMA.

TECHNICAL ANALYSIS USING RELATIVE STRENGTH INDEX
Table 5.2: 14 days RSI of Reliance Industries Ltd from 1st January 2020 to 3rd July 2020

DATE	CLOSE PRICE	GAIN	LOSS	14 DAYS GAIN	14 DAYS LOSS	RS	RSI
01/01/20	1495.47						
02/01/20	1520.88	25.41	0				
03/01/20	1522.76	1.88	0				
06/01/20	1487.35	0	35.41				
07/01/20	1510.67	23.32	0				
08/01/20	1499.68	0	10.99				
09/01/20	1533.36	33.68	0				
10/01/20	1533.11	0	0.25				
13/01/20	1528.90	0	4.21				
14/01/20	1514.64	0	14.26				
15/01/20	1509.63	0	5.01				
16/01/20	1523.21	13.58	0				
17/01/20	1565.75	42.54	0				
20/01/20	1517.56	0	48.19				
21/01/20	1519.49	1.93	0	10.17	8.45	1.20	54.61
22/01/20	1518.65	0	0.84	9.44	7.91	1.19	54.42
23/01/20	1512.61	0	6.04	8.77	7.77	1.13	53.00
24/01/20	1507.36	0	5.25	8.14	7.59	1.07	51.74
27/01/20	1492.40	0	14.96	7.56	8.12	0.93	48.21
28/01/20	1457.48	0	34.92	7.02	10.03	0.70	41.16
29/01/20	1465.75	8.27	0	7.11	9.32	0.76	43.27
30/01/20	1428.90	0	36.85	6.60	11.28	0.58	36.91
31/01/20	1398.39	0	30.51	6.13	12.66	0.48	32.62
01/02/20	1370.26	0	28.13	5.69	13.76	0.41	29.26
03/02/20	1372.79	2.53	0	5.47	12.78	0.43	29.96
04/02/20	1412.41	39.62	0	7.91	11.87	0.67	39.98
05/02/20	1434.40	21.99	0	8.91	11.02	0.81	44.71
06/02/20	1443.91	9.51	0	8.95	10.23	0.88	46.67
07/02/20	1420.24	0	23.67	8.31	11.19	0.74	42.62
10/02/20	1423.21	2.97	0	7.93	10.39	0.76	43.29
11/02/20	1438.91	15.7	0	8.49	9.65	0.88	46.79
12/02/20	1456.14	17.23	0	9.11	8.96	1.02	50.42
13/02/20	1460.06	3.92	0	8.74	8.32	1.05	51.23
14/02/20	1472.64	12.58	0	9.02	7.73	1.17	53.85
17/02/20	1464.46	0	8.18	8.37	7.76	1.08	51.90
18/02/20	1452.28	0	12.18	7.77	8.07	0.96	49.05
19/02/20	1490.02	37.74	0	9.91	7.50	1.32	56.94
20/02/20	1471.50	0	18.52	9.21	8.29	1.11	52.63
24/02/20	1431.23	0	40.27	8.55	10.57	0.81	44.71
25/02/20	1402.95	0	28.28	7.94	11.83	0.67	40.14
26/02/20	1378.28	0	24.67	7.37	12.75	0.58	36.63
27/02/20	1372.74	0	5.54	6.84	12.24	0.56	35.87
28/02/20	1316.13	0	56.61	6.36	15.41	0.41	29.20
02/03/20	1302.46	0	13.67	5.90	15.28	0.39	27.86

03/03/20	1330.98	28.52	0	7.52	14.19	0.53	34.63
04/03/20	1326.53	0	4.45	6.98	13.49	0.52	34.09
05/03/20	1299.14	0	27.39	6.48	14.49	0.45	30.91
06/03/20	1258.08	0	41.06	6.02	16.39	0.37	26.86
09/03/20	1102.66	0	155.42	5.59	26.32	0.21	17.52
11/03/20	1142.38	39.72	0	8.03	24.44	0.33	24.73
12/03/20	1051.59	0	90.79	7.45	29.18	0.26	20.35
13/03/20	1096.47	44.88	0	10.13	27.09	0.37	27.21
16/03/20	1005.68	0	90.79	9.40	31.64	0.30	22.91
17/03/20	999.39	0	6.29	8.73	29.83	0.29	22.64
18/03/20	959.72	0	39.67	8.11	30.53	0.27	20.98
19/03/20	908.46	0	51.26	7.53	32.01	0.24	19.04
20/03/20	1010.58	102.12	0	14.29	29.73	0.48	32.46
23/03/20	875.52	0	135.06	13.26	37.25	0.36	26.26
24/03/20	934.21	58.69	0	16.51	34.59	0.48	32.31
25/03/20	1071.06	136.85	0	25.11	32.12	0.78	43.87
26/03/20	1064.62	0	6.44	23.31	30.29	0.77	43.49
27/03/20	1055.46	0	9.16	21.65	28.78	0.75	42.93
30/03/20	1022.62	0	32.84	20.10	29.07	0.69	40.88
31/03/20	1101.96	79.34	0	24.33	26.99	0.90	47.41
01/04/20	1070.46	0	31.5	22.59	27.31	0.83	45.27
03/04/20	1068.04	0	2.42	20.98	25.53	0.82	45.10
07/04/20	1195.03	126.99	0	28.55	23.71	1.20	54.63
08/04/20	1180.91	0	14.12	26.51	23.03	1.15	53.52
09/04/20	1207.71	26.8	0	26.53	21.38	1.24	55.38
13/04/20	1178.04	0	29.67	24.64	21.97	1.12	52.86
15/04/20	1139.21	0	38.83	22.88	23.18	0.99	49.68
16/04/20	1157.68	18.47	0	22.56	21.52	1.05	51.18
17/04/20	1213.50	55.82	0	24.94	19.98	1.25	55.51
20/04/20	1232.72	19.22	0	24.53	18.56	1.32	56.93
21/04/20	1224.40	0	8.32	22.78	17.83	1.28	56.10
22/04/20	1350.50	126.1	0	30.16	16.55	1.82	64.56
23/04/20	1358.57	8.07	0	28.58	15.37	1.86	65.03
24/04/20	1403.99	45.42	0	29.78	14.27	2.09	67.60
27/04/20	1416.82	12.83	0	28.57	13.25	2.16	68.31
28/04/20	1414.64	0	2.18	26.53	12.46	2.13	68.04
29/04/20	1412.76	0	1.88	24.64	11.71	2.10	67.79
30/04/20	1453.22	40.46	0	25.77	10.87	2.37	70.33
04/05/20	1421.87	0	31.35	23.93	12.33	1.94	65.99
05/05/20	1447.23	25.36	0	24.03	11.45	2.10	67.72
06/05/20	1447.87	0.64	0	22.36	10.63	2.10	67.77
07/05/20	1493.04	45.17	0	23.99	9.87	2.43	70.84
08/05/20	1547.08	54.04	0	26.13	9.17	2.85	74.03
11/05/20	1561.89	14.81	0	25.33	8.51	2.97	74.84
12/05/20	1466.30	0	95.59	23.52	14.73	1.60	61.48
13/05/20	1496.40	30.1	0	23.99	13.68	1.75	63.68
14/05/20	1435.45	0	60.95	22.27	17.06	1.31	56.63

15/05/20	1458.90	23.45	0	22.36	15.84	1.41	58.53
18/05/20	1440.65	0	18.25	20.76	16.01	1.30	56.46
19/05/20	1408.15	0	32.5	19.28	17.19	1.12	52.86
20/05/20	1434.65	26.5	0	19.79	15.96	1.24	55.36
21/05/20	1440.05	5.4	0	18.77	14.82	1.27	55.87
22/05/20	1431.60	0	8.45	17.42	14.37	1.21	54.81
26/05/20	1423.70	0	7.9	16.18	13.90	1.16	53.78
27/05/20	1446.95	23.25	0	16.69	12.91	1.29	56.38
28/05/20	1472.65	25.7	0	17.33	11.99	1.45	59.11
29/05/20	1465.20	0	7.45	16.09	11.66	1.38	57.97
01/06/20	1520.45	55.25	0	18.89	10.83	1.74	63.55
02/06/20	1536.10	15.65	0	18.66	10.06	1.85	64.97
03/06/20	1542.45	6.35	0	17.78	9.34	1.90	65.56
04/06/20	1579.95	37.5	0	19.19	8.67	2.21	68.87
05/06/20	1580.60	0.65	0	17.86	8.05	2.22	68.93
08/06/20	1570.05	0	10.55	16.59	8.23	2.02	66.83
09/06/20	1537.10	0	32.95	15.40	10.00	1.54	60.64
10/06/20	1572.00	34.9	0	16.79	9.28	1.81	64.40
11/06/20	1537.50	0	34.5	15.60	11.08	1.41	58.45
12/06/20	1588.80	51.3	0	18.15	10.29	1.76	63.81
15/06/20	1615.00	26.2	0	18.72	9.56	1.96	66.20
16/06/20	1617.50	2.5	0	17.56	8.87	1.98	66.43
17/06/20	1615.40	0	2.1	16.31	8.39	1.94	66.03
18/06/20	1656.25	40.85	0	18.06	7.79	2.32	69.86
19/06/20	1759.50	103.25	0	24.15	7.23	3.34	76.94
22/06/20	1747.20	0	12.3	22.42	7.60	2.95	74.69
23/06/20	1720.05	0	27.15	20.82	8.99	2.32	69.83
24/06/20	1727.35	7.3	0	19.85	8.35	2.38	70.39
25/06/20	1717.95	0	9.4	18.44	8.43	2.19	68.63
26/06/20	1742.60	24.65	0	18.88	7.82	2.41	70.70
29/06/20	1723.15	0	19.45	17.53	8.65	2.03	66.95
30/06/20	1703.35	0	19.8	16.28	9.45	1.72	63.27
01/07/20	1737.90	34.55	0	17.58	8.78	2.00	66.71
02/07/20	1760.55	22.65	0	17.95	8.15	2.20	68.77
03/07/20	1787.50	26.95	0	18.59	7.57	2.46	71.07

SOURCE: Data collected from www.nseindia.com

Figure 3: Showing RSI of Reliance Industries Ltd from 1ˢᵗ January 2020 to 3ʳᵈ July 2020
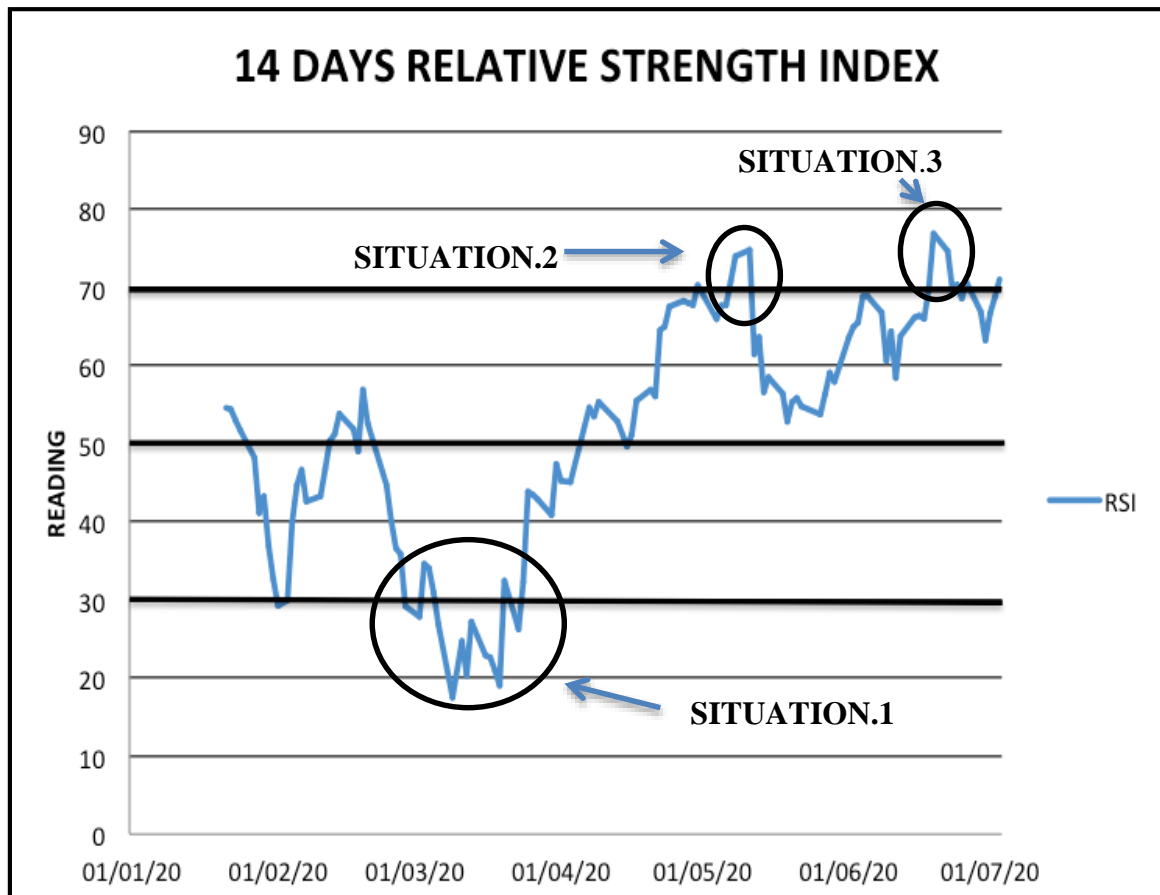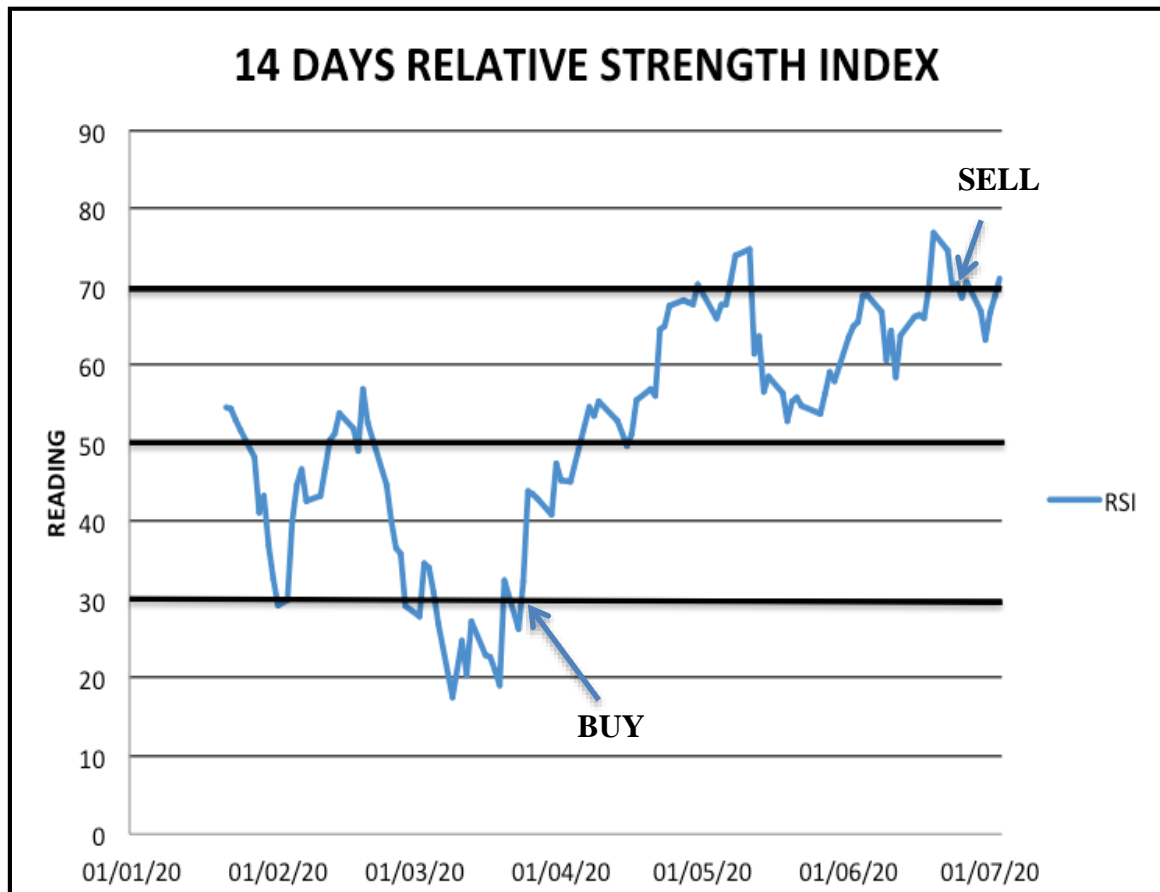

INTERPRETATION OF RSI: OVERBOUGHT & OVERSOLD

The above RSI graph is calculated from 1ˢᵗ January 2020 to 3ʳᵈ July 2020. It indicates overbuying and overselling of Reliance Industries Ltd stock.

SITUATION. 1: From 06/03/2020 to 20/03/2020 the RSI was below line 30, which means in this period the stocks were oversold due to the Impact of COVID 19.

SITUATION.2: From 07/05/2022 to 12/05/2020 the RSI was above line 70, which means the stocks were overbought in this situation because of the news ""Mukesh Ambani aims to turn Reliance into zero net debt firm by December, before target".

SITUATION. 3: From 18/06/2020 to 23/06/2020 again the RSI line went above the line 70 and again the stocks were overbought because of the impact of news "Jio Platforms gets 11th investor as Saudi Arabia's PIF joins rush for RIL unit" & "RIL is net debt free 8 months ahead of target thanks to Jio deals and rights issue".

Figure 4: Showing RSI of Reliance Industries Ltd from 1st January 2020 to 3rd July 2020

INTERPRETATION OF RSI: SELL & BUY SIGNAL

SELL SIGNAL: Some people think that when the RSI line goes below 30 is the best time to buy because the stock is getting oversold. But you should never rush to buy because buying when the stock is weakening is not a good buying decision. In the above chart, if you see, the buy signal is shown when the RSI line is crossing back above the line 30.

The sell signal on the above chart is given on 12/05/2020 & 23/06/2020

BUY SIGNAL: Similarly, people think the same while selling. When the RSI crosses above 70, it is not a good signal to sell. In the above chart if you see the sell signal is shown when the RSI line is crossing back below the line 30.

**The buy signal on the above chart is given on 20/03/2020**

TECHNICAL ANALYSIS USING MOVING AVERAGE CONVERGENCE DIVERGENCE (MACD)
Table 5.3: 20 days SMA & 20 days DMA of Reliance Industries Ltd from 1ˢᵗ January 2020 to 3ʳᵈ July 2020

DATE	CLOSE PRICE	12 DAY EMA	26 DAY EMA	MACD	SIGNAL	HISTOGRAM
01/01/20	1495.47					
02/01/20	1520.88					
03/01/20	1522.76					
06/01/20	1487.35					
07/01/20	1510.67					
08/01/20	1499.68					
09/01/20	1533.36					
10/01/20	1533.11					
13/01/20	1528.90					
14/01/20	1514.64					
15/01/20	1509.63					
16/01/20	1523.21	1514.97				
17/01/20	1565.75	1522.78				
20/01/20	1517.56	1521.98				
21/01/20	1519.49	1521.60				
22/01/20	1518.65	1521.14				
23/01/20	1512.61	1519.83				
24/01/20	1507.36	1517.91				
27/01/20	1492.40	1513.99				
28/01/20	1457.48	1505.29				
29/01/20	1465.75	1499.21				
30/01/20	1428.90	1488.39				
31/01/20	1398.39	1474.55				
01/02/20	1370.26	1458.50				
03/02/20	1372.79	1445.32				
04/02/20	1412.41	1440.25	1489.21	-48.96		
05/02/20	1434.40	1439.35	1485.15	-45.80		
06/02/20	1443.91	1440.05	1482.10	-42.04		
07/02/20	1420.24	1437.01	1477.51	-40.51		
10/02/20	1423.21	1434.88	1473.49	-38.61		
11/02/20	1438.91	1435.50	1470.93	-35.43		
12/02/20	1456.14	1438.68	1469.83	-31.16		
13/02/20	1460.06	1441.97	1469.11	-27.14		
14/02/20	1472.64	1446.69	1469.37	-22.69	-36.92	14.24
17/02/20	1464.46	1449.42	1469.01	-19.59	-33.46	13.87
18/02/20	1452.28	1449.86	1467.77	-17.91	-30.35	12.44
19/02/20	1490.02	1456.04	1469.42	-13.38	-26.95	13.58
20/02/20	1471.50	1458.42	1469.57	-11.15	-23.79	12.64
24/02/20	1431.23	1454.23	1466.73	-12.50	-21.53	9.04
25/02/20	1402.95	1446.34	1462.01	-15.66	-20.36	4.70
26/02/20	1378.28	1435.87	1455.80	-19.93	-20.27	0.34
27/02/20	1372.74	1426.16	1449.65	-23.49	-20.92	-2.57
28/02/20	1316.13	1409.23	1439.76	-30.53	-22.84	-7.69

02/03/20	1302.46	1392.81	1429.59	-36.78	-25.63	-11.16
03/03/20	1330.98	1383.29	1422.29	-38.99	-28.30	-10.69
04/03/20	1326.53	1374.56	1415.19	-40.63	-30.77	-9.86
05/03/20	1299.14	1362.96	1406.60	-43.64	-33.34	-10.30
06/03/20	1258.08	1346.82	1395.60	-48.77	-36.43	-12.34
09/03/20	1102.66	1309.26	1373.90	-64.64	-42.07	-22.57
11/03/20	1142.38	1283.59	1356.75	-73.16	-48.29	-24.87
12/03/20	1051.59	1247.89	1334.14	-86.25	-55.88	-30.37
13/03/20	1096.47	1224.60	1316.54	-91.94	-63.09	-28.85
16/03/20	1005.68	1190.92	1293.51	-102.59	-70.99	-31.60
17/03/20	999.39	1161.45	1271.72	-110.27	-78.85	-31.42
18/03/20	959.72	1130.42	1248.61	-118.20	-86.72	-31.48
19/03/20	908.46	1096.27	1223.42	-127.15	-94.80	-32.34
20/03/20	1010.58	1083.09	1207.65	-124.56	-100.76	-23.81
23/03/20	875.52	1051.15	1183.05	-131.90	-106.98	-24.91
24/03/20	934.21	1033.16	1164.62	-131.45	-111.88	-19.58
25/03/20	1071.06	1038.99	1157.69	-118.69	-113.24	-5.45
26/03/20	1064.62	1042.94	1150.79	-107.86	-112.16	4.31
27/03/20	1055.46	1044.86	1143.73	-98.87	-109.50	10.64
30/03/20	1022.62	1041.44	1134.76	-93.32	-106.27	12.95
31/03/20	1101.96	1050.75	1132.33	-81.58	-101.33	19.75
01/04/20	1070.46	1053.78	1127.75	-73.96	-95.86	21.89
03/04/20	1068.04	1055.98	1123.32	-67.35	-90.15	22.81
07/04/20	1195.03	1077.37	1128.64	-51.27	-82.38	31.11
08/04/20	1180.91	1093.30	1132.51	-39.21	-73.74	34.53
09/04/20	1207.71	1110.90	1138.08	-27.18	-64.43	37.25
13/04/20	1178.04	1121.23	1141.04	-19.81	-55.51	35.70
15/04/20	1139.21	1124.00	1140.90	-16.91	-47.79	30.88
16/04/20	1157.68	1129.18	1142.15	-12.97	-40.82	27.85
17/04/20	1213.50	1142.15	1147.43	-5.28	-33.71	28.43
20/04/20	1232.72	1156.08	1153.75	2.34	-26.50	28.84
21/04/20	1224.40	1166.59	1158.98	7.61	-19.68	27.29
22/04/20	1350.50	1194.89	1173.17	21.72	-11.40	33.12
23/04/20	1358.57	1220.07	1186.90	33.17	-2.49	35.65
24/04/20	1403.99	1248.36	1202.98	45.38	7.09	38.30
27/04/20	1416.82	1274.28	1218.82	55.46	16.76	38.70
28/04/20	1414.64	1295.87	1233.33	62.55	25.92	36.63
29/04/20	1412.76	1313.86	1246.62	67.24	34.18	33.06
30/04/20	1453.22	1335.30	1261.92	73.37	42.02	31.35
04/05/20	1421.87	1348.62	1273.77	74.85	48.59	26.26
05/05/20	1447.23	1363.79	1286.62	77.17	54.30	22.87
06/05/20	1447.87	1376.72	1298.56	78.16	59.07	19.09
07/05/20	1493.04	1394.62	1312.97	81.65	63.59	18.06
08/05/20	1547.08	1418.07	1330.31	87.76	68.42	19.34
11/05/20	1561.89	1440.20	1347.47	92.73	73.29	19.45
12/05/20	1466.30	1444.21	1356.27	87.95	76.22	11.73
13/05/20	1496.40	1452.24	1366.65	85.60	78.09	7.50

14/05/20	1435.45	1449.66	1371.74	77.92	78.06	-0.14
15/05/20	1458.90	1451.08	1378.20	72.88	77.02	-4.14
18/05/20	1440.65	1449.48	1382.83	66.65	74.95	-8.30
19/05/20	1408.15	1443.12	1384.70	58.42	71.64	-13.23
20/05/20	1434.65	1441.82	1388.40	53.41	68.00	-14.58
21/05/20	1440.05	1441.54	1392.23	49.32	64.26	-14.94
22/05/20	1431.60	1440.01	1395.14	44.87	60.38	-15.51
26/05/20	1423.70	1437.50	1397.26	40.24	56.35	-16.11
27/05/20	1446.95	1438.96	1400.94	38.02	52.69	-14.67
28/05/20	1472.65	1444.14	1406.25	37.89	49.73	-11.84
29/05/20	1465.20	1447.38	1410.62	36.76	47.13	-10.37
01/06/20	1520.45	1458.62	1418.75	39.87	45.68	-5.81
02/06/20	1536.10	1470.54	1427.45	43.10	45.16	-2.07
03/06/20	1542.45	1481.60	1435.97	45.64	45.26	0.38
04/06/20	1579.95	1496.73	1446.63	50.10	46.23	3.88
05/06/20	1580.60	1509.64	1456.55	53.08	47.60	5.48
08/06/20	1570.05	1518.93	1464.96	53.97	48.87	5.10
09/06/20	1537.10	1521.73	1470.31	51.42	49.38	2.04
10/06/20	1572.00	1529.46	1477.84	51.62	49.83	1.79
11/06/20	1537.50	1530.70	1482.26	48.44	49.55	-1.11
12/06/20	1588.80	1539.64	1490.15	49.49	49.54	-0.05
15/06/20	1615.00	1551.23	1499.40	51.83	50.00	1.83
16/06/20	1617.50	1561.43	1508.15	53.28	50.65	2.63
17/06/20	1615.40	1569.73	1516.09	53.64	51.25	2.39
18/06/20	1656.25	1583.04	1526.47	56.57	52.31	4.25
19/06/20	1759.50	1610.19	1543.73	66.45	55.14	11.31
22/06/20	1747.20	1631.27	1558.81	72.46	58.61	13.85
23/06/20	1720.05	1644.93	1570.75	74.18	61.72	12.46
24/06/20	1727.35	1657.61	1582.35	75.26	64.43	10.83
25/06/20	1717.95	1666.89	1592.39	74.50	66.44	8.05
26/06/20	1742.60	1678.54	1603.52	75.02	68.16	6.86
29/06/20	1723.15	1685.40	1612.38	73.02	69.13	3.89
30/06/20	1703.35	1688.16	1619.12	69.04	69.11	-0.07
01/07/20	1737.90	1695.81	1627.92	67.90	68.87	-0.97
02/07/20	1760.55	1705.77	1637.74	68.03	68.70	-0.67
03/07/20	1787.50	1718.35	1648.84	69.51	68.86	0.65

SOURCE: Data collected from www.nseindia.com

Figure 5: Showing MACD of Reliance Industries Ltd from 1st January 2020 to 3rd July 2020
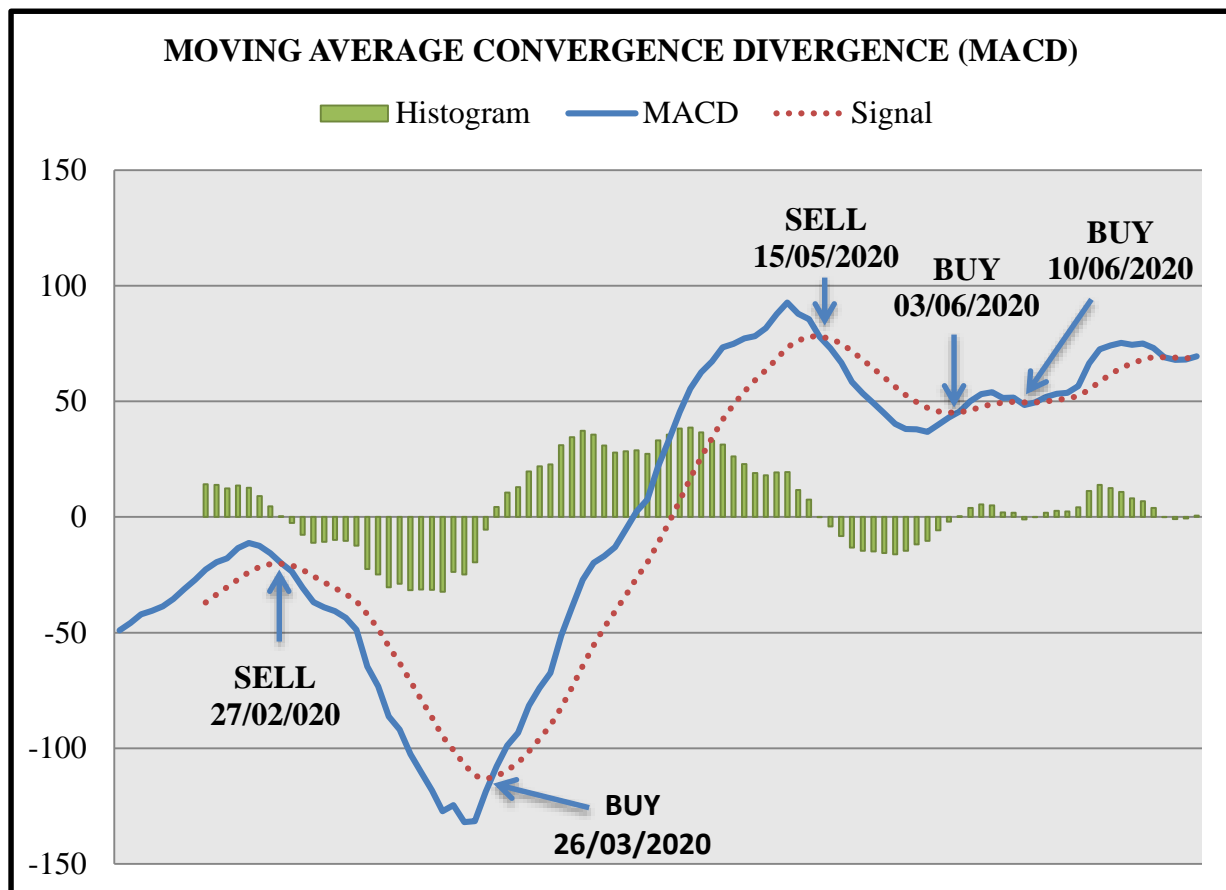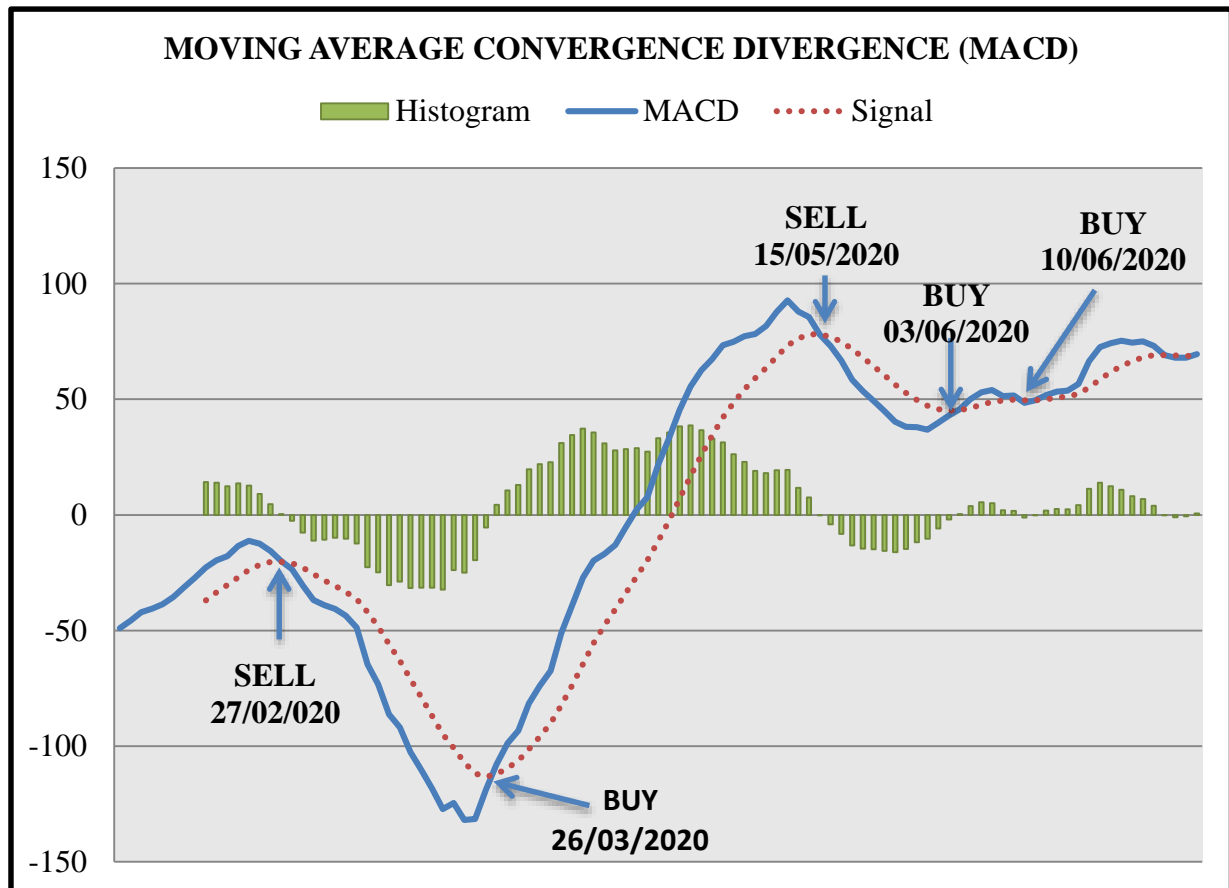

INTERPRETATION

Buy and Sell Signals using the MACD line and Signal line

In the above chart, if you see, the blue line is the MACD line and the red dotted line is the Signal line. The buy and sell signals are given every time the two lines crossed each other. Whenever the blue line (MACD) crosses below the red dotted line (Signal), gives a sell signal. Similarly, whenever MACD line crosses above the Signal line, gives a buy signal.

SELL SIGNAL: Sell signal is indicated on **27/02/2020** & **15/05/2020** when the Signal line crossed above the MACD line.

BUY SIGNAL: Buy signal is indicated on **26/03/2020**, **03/06/2020** & **10/06/2020** when the MACD line crossed above the Signal line.

Figure 6: Showing MACD of Reliance Industries Ltd from 1st January 2020 to 3rd July 2020
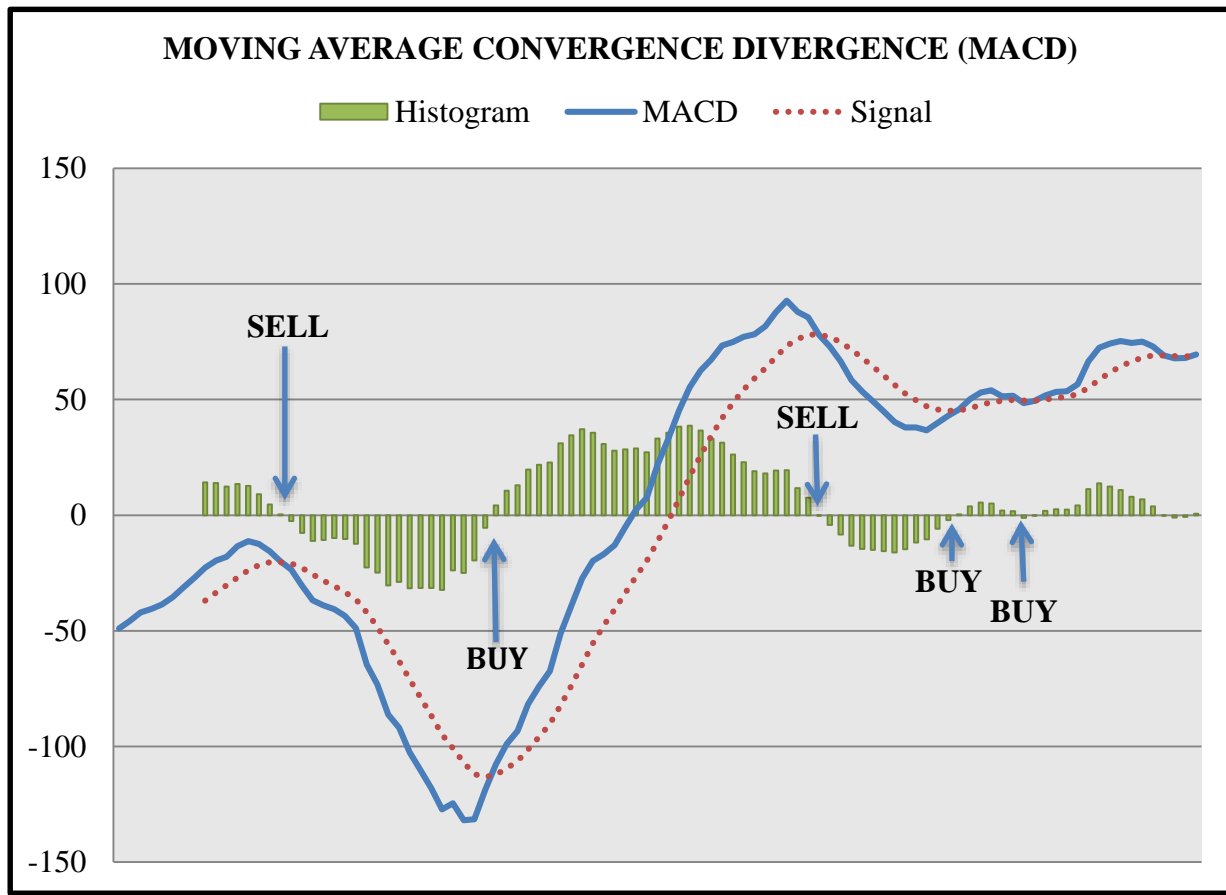

INTERPRETATION

Buy and Sell Signals in the Up and Down Trend

If you see the above chart, any value from 0 to 150 is the uptrend; any value from 0 to -150 is the downtrend. When the buy and sell signal indicates above line 0 is considered as uptrend signal. Similarly, if it indicates below 0 is considered as a downtrend signal.

Uptrend: 15/05/2020, indicted a sell signal when the value was **77.02** whereas **03/06/2020** & **10/06/2020** indicated a buy signal when the value was **45.25** & **49.83**. These signals were above line 0 therefore these buy and sell signals were indicated in an uptrend when the market was bullish.

Downtrend: 27/02/2020, indicted a sell signal when the value was **-20.91** and **26/03/2020** indicated a buy signal when the value was **-112.16**. These signals were below line 0 therefore these buy and sell signals were indicated in a downtrend when the market was bearish.

Figure 7: Showing EMA of Reliance Industries Ltd from 1st January 2020 to 3rd July 2020

INTERPRETATION

Buy and Sell Signals using Histogram Bars

Histogram Bars are just a representation of MACD and Signal line. As you can see in the above chart, every time the histogram comes back to line 0 gives you either buy or sell signals. Now the sell signals are given when the histogram moves below line 0. Similarly buy indications are given when it moves above line 0. Also, if the distance between the MACD and the signal line is wide, the histograms are large and vice versa.

VI. FINDINGS

The analysis has been done with the use of four technical tools that are leading in technical analysis. After the analysis of these four tools, it was found that these tools could help an investor to make good decisions when investing in the stock market.

SMA & EMA indicate the entry and exit signal, which gave good returns but when compared, was found that EMA responds more quickly than SMA does.

RSI indicated that when the RSI line recovers from the overselling of the stock and bounces back to level 30 then it is better to take a long position. On the other hand, when the RSI line breaks down from overbuying of the stock until level 70 is the perfect time to take a short position in the market.

RSI tool gives indications when the stocks are overbought and oversold. It is a great tool to gain maximum profit. An investor can surely take advantage of this tool when the market is bull or bear.

MACD also indicates the buy and sell signals as EMA & SMA. But this tool gives information more than just the signals. It also indicates the signal along with the trend. Therefore, investors can analyze the sell and buy signals and trends.

When compared the entry and exit signals from the analysis of the tools, it was found that every tool gives different entry and exit signals.

VII. Suggestions

Technical analysis is the complex method of analysis of the stock and therefore proper knowledge is required to be given to the investors for reference. Most of the investors do not use technical analysis before investing because of the lack of knowledge. The research is done based on the understanding of various research papers related to the topic. Most of the research papers were focused on comparing the stocks of the companies. It can be suggested that more research should be conducted focusing on the use of different technical tools in-depth to make the investor understand the concept easily. It can also be suggested to the broking companies to conduct free demo lectures for their clients on technical and fundamental analysis to make them aware of the benefits of it.

VIII. Conclusion

Technical analysis is an advanced technique used by many investors to analyze the stock. The main objective of this study was to understand the benefits of these technical tools for investors. It cannot be concluded that any of the tools gives accurate results as every tool is unique and gives different indications and sometimes, they may go wrong. But it can be concluded that they are useful to avoid losses and gain good profits.

Although these tools used in this study indicated short-term buy and sell signals which gave good returns between 01/01/2020 to 03/07/2020, yet a single technical tool will not help to analyze the accurate future trend. Therefore, Investors should also refer to other aspects like charts, patterns, news, fundamentals of the stock etc. before investing in the stock market.

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