

Relative Strength Index: An Indicator

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ABSTRACT

The price of a security represents a consensus. It is the price at which one person agrees to buy and another agrees to sell. The price at which an investor is willing to buy or sell depends primarily on his expectations. If he expects the security's price to rise, he will buy it; if the investor expects the price to fall, he will sell it. These simple statements are the cause of a major challenge in forecasting security prices. Fundamental analysis and technical analysis can co-exist in peace and complement each other. Since all the investors in the stock market want to make the maximum profits possible, they just cannot afford to ignore either fundamental or technical analysis. The study can help in analyzing growth in security market prices using technical analysis. The Relative Strength Index is a technical indicator used in the analysis of financial markets. This helps the investors is taking good decisions when investing in equity shares. This paper is focusing on 3 companies' performance using Relative Strength Index tool.

Keywords: Fundamental analysis, relative strength index, security, stock market, technical analysis.

I. INTRODUCTION

Equity Analysis is the process of analyzing sectors and companies, to give advice to professional fund managers and private clients on which shares to buy. Sell-side analysts work for brokers who sell shares to the investors (mainly fund management firms and private clients). Buy-side analysts work for fund management firms. Security analysis is the analysis of traceable financial instruments called securities. These can be classified into debt securities, equities, or some hybrid of the two. More broadly, futures contracts and traceable credit derivatives are sometimes included. Security analysis is typically divided into fundamental analysis, which relies upon the examination of fundamental business factors such as financial statements, and technical analysis, which focuses upon price trends and momentum. Quantitative analysis may use indicators from both areas.

The Relative Strength Index (RSI), developed by J. Welles Wilder, is a momentum oscillator that measures the speed and change of price movements. The RSI oscillates between zero and 100. Traditionally the RSI is considered overbought when above 70 and oversold when below 30. Signals can be generated by looking for divergences and failure swings. RSI can also be used to identify the general trend.

II. OBJECTIVE

To study the technical analysis tool RSI and examine the security forecasting prices.

III. IMPORTANCE

The investor need to be up to date about the market conditions as well. They find it by equity research reports. These are an important part of the market – they allow you to know the recent trends and allow you to predict some possible future trends. These are reports that allow to know what the value of a bunch of stocks is – and one can then decide whether to want a piece of it or not. This can be extremely helpful to the beginner, who is absolutely clueless about where to begin. The reports are written by highly trained analysts – they are experts in the industry, with a good knowledge of gauging stocks. Once that's done they publish the report. The report might recommend a particular stock that you need to keep on hold or might need to buy or sell off. The basic idea is that one get advice on how involved one should be in a particular share.

IV. TREND ANALYSIS IN STOCK MARKET

In the current scenario there are discounts on brokerages and superfast connections with latest technology for both wireless and wired. Even a layman with the help of software tools can get basic understanding on how the stock market works.

Method 1: Making Money from Market Trend

It is easy to make money by investing money in stock market. It's a normal phenomenon to buy gold expecting it to rise but then trading at the right time is what makes all the difference. Market sentiments also get influence by major events, natural disasters and news events.

Method 2: Social Media

There are multiple sites which helps an investor to get financial data and influencers indicating market moods. These tools can drill down to specific sectors like real estate or commodity etc. This helps to retrieve the information and develop our own algorithms to make trading decisions.

Method 3: Market Sentiment, Trends and Tools

Large institutional investors with sizeable funds already mining through web and social media to trade from the trends the same is provided to the retailers with the help of few tools available online. It gets trends of market sentiments from information on Facebook, Twitter or other social media sites. It helps to review the market sentiments, build portfolios and trade on it. It varies individual to individual based on available funds, expected returns and targeted time period.

V. CONCEPT

The RSI measures the ratio of up-moves to down-moves and normalizes the calculation so that the index is expressed in a range of 0-100. If the RSI is 70 or greater, then the instrument is assumed to be overbought (a situation in which prices have risen more than market expectations). An RSI of 30 or less is taken as a signal that the instrument may be oversold (a situation in which prices have fallen more than the market expectations). Technical analysis refers to the study of market generated data like prices & Volume to determine the future direction of prices movements. Technical analysis mainly seeks to predict the short term price travels. It is important criteria for selecting the Company to invest. It also provides the base for decision-making in investment. The one of the most frequently used yardstick to check & analyze underlying price progress. For that matter a verity of tools was consider. Technical analysis is helpful to general investor in many ways. It provides important & vital information regarding the current price position of the company.

Technical analysis involves the use of various methods for charting, calculating & interpreting graph & chart to assess the performances & status of the price. It is the tool of financial analysis, which not only studies but also reflecting the numerical & graphical relationship between the important financial factors. The focus of technical analysis is mainly on the internal market data, i.e. prices & volume data. It appeals mainly to short term traders.

Calculation

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

$$RS = \text{Average Gain} / \text{Average Loss}$$

To simplify the calculation explanation, RSI has been broken down into its basic components:

RS, Average Gain and Average Loss. This RSI calculation is based on 5 periods.

The very first calculations for average gain and average loss are simple 5 period averages.

- First Average Gain = Sum of Gains over the past 5 periods / 5.
- First Average Loss = Sum of Losses over the past 5 periods / 5

The second, and subsequent, calculations are based on the prior averages and the current gain loss:

- Average Gain = [(previous Average Gain) x 4 + current Gain] / 5.
- Average Loss = [(previous Average Loss) x 4 + current Loss] / 5.

Table: 1 Dabur Equity Analysis Using Rsi Indicator

Month-Year	Close Price	Change	Gain	Loss	Average Gain	Average Loss	Relative Strength	5-Period RSI
Jun-12	119.3							
Jul-12	122.55	3.25	3.25					
Aug-12	128	5.45	5.45					
Sep-12	124.35	-3.65		3.65				
Oct-12	128.05	3.7	3.7					
Nov-12	128.9	0.85	0.85		2.65	0.73	3.63	78.40
Dec-12	132.7	3.8	3.8		2.88	0.58	4.93	83.14
Jan-13	126.4	-6.3		6.3	2.30	1.73	1.33	57.15
Feb-13	136.95	10.55	10.55		3.95	1.38	2.86	74.10
Mar-13	147.8	10.85	10.85		5.33	1.11	4.82	82.83
Apr-13	156.35	8.55	8.55		5.98	0.88	6.76	87.11
May-13	155.4	-0.95		0.95	4.78	0.90	5.33	84.19
Jun-13	161.4	6	6		5.02	0.72	7.00	87.50
Jul-13	163.1	1.7	1.7		4.36	0.57	7.59	88.36
Aug-13	169.5	6.4	6.4		4.77	0.46	10.38	91.21
Sep-13	178.65	9.15	9.15		5.64	0.37	15.35	93.89
Oct-13	165.65	-13		13	4.52	2.89	1.56	60.94
Nov-13	170.35	4.7	4.7		4.55	2.32	1.97	66.29
Dec-13	172	1.65	1.65		3.97	1.85	2.14	68.20
Jan-14	173.45	1.45	1.45		3.47	1.48	2.34	70.06
Feb-14	179.65	6.2	6.2		4.01	1.19	3.39	77.20
Mar-14	179.25	-0.4		0.4	3.21	1.03	3.12	75.74
Apr-14	188.45	9.2	9.2		4.41	0.82	5.36	84.28
May-14	187.5	-0.95		0.95	3.53	0.85	4.16	80.62
Jun-14	207.25	19.75	19.75		6.77	0.68	9.98	90.89
Jul-14	232.6	25.35	25.35		10.49	0.54	19.32	95.08
Aug-14	222.15	-10.45		10.45	8.39	2.52	3.32	76.87
Sep-14	226.5	4.35	4.35		7.58	2.02	3.75	78.97
Oct-14	240.9	14.4	14.4		8.95	1.62	5.54	84.70
Nov-14	233.75	-7.15		7.15	7.16	2.72	2.63	72.44
Dec-14	256.25	22.5	22.5		10.23	2.18	4.69	82.44
Jan-15	265.15	8.9	8.9		9.96	1.74	5.72	85.11
Feb-15	265.55	0.4	0.4		8.05	1.39	5.77	85.24
Mar-15	251.9	-13.65		13.65	6.44	3.85	1.67	62.61
Apr-15	269.85	17.95	17.95		8.74	3.08	2.84	73.97
May-15	280.1	10.25	10.25		9.04	2.46	3.67	78.61
Jun-15	293.3	13.2	13.2		9.87	1.97	5.02	83.38
Jul-15	273.05	-20.25		20.25	7.90	5.62	1.40	58.41
Aug-15	276	2.95	2.95		6.91	4.50	1.54	60.56
Sep-15	272.45	-3.55		3.55	5.53	4.31	1.28	56.19
Oct-15	272.55	0.1	0.1		4.44	3.45	1.29	56.30
Nov-15	276.95	4.4	4.4		4.43	2.76	1.61	61.65
Dec-15	250.65	-26.3		26.3	3.55	7.47	0.48	32.20

Jan-16	237.15	-13.5		13.5	2.84	8.67	0.33	24.65
Feb-16	249.9	12.75	12.75		4.82	6.94	0.69	40.99
Mar-16	275.8	25.9	25.9		9.04	5.55	1.63	61.95
Apr-16	289.7	13.9	13.9		10.01	4.44	2.25	69.27
May-16	308.65	18.95	18.95		11.80	3.55	3.32	76.86
Jun-16	303.6	-5.05		5.05	9.44	3.85	2.45	71.01
Jul-16	290.6	-13		13	7.55	5.68	1.33	57.06
Aug-16	271.2	-19.4		19.4	6.04	8.43	0.72	41.76
Sep-16	291.55	20.35	20.35		8.90	6.74	1.32	56.91
Oct-16	283.55	-8		8	7.12	6.99	1.02	50.46
Nov-16	278.15	-5.4		5.4	5.70	6.67	0.85	46.05
Dec-16	276	-2.15		2.15	4.56	5.77	0.79	44.14
Jan-17	276.9	0.9	0.9		3.83	4.62	0.83	45.33
Feb-17	277.35	0.45	0.5		3.15	3.69	0.85	46.05
Mar-17	286.75	9.4	9.4		4.40	2.95	1.49	59.84
Apr-17	279.95	-6.8		6.8	3.52	3.72	0.95	48.60
May-17	284.6	4.65	4.65		3.75	2.98	1.26	55.71

Table: 2 ITC Equity Analysis Using Rsi Indicator

Month-Year	Close Price	Change	Gain	Loss	Average Gain	Average Loss	Relative Strength	5-Period RSI
Jun-12	258.15							
Jul-12	267.6495	9.50	9.50					
Aug-12	272.4	4.75	4.75					
Sep-12	282.5505	10.15	10.15					
Oct-12	298.5	15.95	15.95					
Nov-12	286.8	-11.70		11.70	8.07	2.34	3.45	77.52
Dec-12	307.65	20.85	20.85		10.63	1.87	5.68	85.02
Jan-13	294.7995	-12.85		12.85	8.50	4.07	2.09	67.64
Feb-13	309.45	14.65	14.65		9.73	3.25	2.99	74.94
Mar-13	328.8495	19.40	19.40		11.66	2.60	4.48	81.75
Apr-13	339.9	11.05	11.05		11.54	2.08	5.54	84.71
May-13	324.3495	-15.55		15.55	9.23	4.78	1.93	65.91
Jun-13	341.7	17.35	17.35		10.86	3.82	2.84	73.97
Jul-13	308.7	-33.00		33.00	8.69	9.66	0.90	47.35
Aug-13	340.3995	31.70	31.70		13.29	7.73	1.72	63.24
Sep-13	334.9995	-5.40		5.40	10.63	7.26	1.46	59.42
Oct-13	320.4	-14.60		14.60	8.50	8.73	0.97	49.35
Nov-13	321.8505	1.45	1.45		7.09	6.98	1.02	50.39
Dec-13	325.0995	3.25	3.25		6.32	5.59	1.13	53.10
Jan-14	327.6495	2.55	2.55		5.57	4.47	1.25	55.48
Feb-14	352.8495	25.20	25.20		9.50	3.58	2.66	72.65
Mar-14	340.7505	-12.10		12.10	7.60	5.28	1.44	59.00
Apr-14	341.7495	1.00	1.00		6.28	4.22	1.49	59.78
May-14	325.05	-16.70		16.70	5.02	6.72	0.75	42.77
Jun-14	356.0505	31.00	31.00		10.22	5.38	1.90	65.53
Jul-14	355.3005	-0.75		0.75	8.17	4.45	1.84	64.75
Aug-14	370.2	14.90	14.90		9.52	3.56	2.67	72.78
Sep-14	355.2	-15.00		15.00	7.62	5.85	1.30	56.56
Oct-14	363.15	7.95	7.95		7.68	4.68	1.64	62.15
Nov-14	368.7	5.55	5.55		7.26	3.74	1.94	65.97
Dec-14	368.55	-0.15		0.15	5.80	3.02	1.92	65.75
Jan-15	393.7005	25.15	25.15		9.67	2.42	4.00	79.99
Feb-15	325.8495	-67.85		67.85	7.74	15.51	0.50	33.29

Mar-15	322.35	-3.50		3.50	6.19	13.10	0.47	32.09
Apr-15	327.1005	4.75	4.75		5.90	10.48	0.56	36.02
May-15	315.15	-11.95		11.95	4.72	10.78	0.44	30.47
Jun-15	325.9995	10.85	10.85		5.95	8.62	0.69	40.82
Jul-15	488.55	162.55	162.55		37.27	6.90	5.40	84.38
Aug-15	328.8	-159.75		159.75	29.81	37.47	0.80	44.31
Sep-15	334.65	5.85	5.85		25.02	29.97	0.83	45.50
Oct-15	346.1505	11.50	11.50		22.32	23.98	0.93	48.21
Nov-15	327.7995	-18.35		18.35	17.85	22.85	0.78	43.86
Dec-15	320.2005	-7.60		7.60	14.28	19.80	0.72	41.90
Jan-16	295.65	-24.55		24.55	11.43	20.75	0.55	35.51
Feb-16	328.2495	32.60	32.60		15.66	16.60	0.94	48.54
Mar-16	324.9495	-3.30		3.30	12.53	13.94	0.90	47.33
Apr-16	351.0495	26.10	26.10		15.24	11.15	1.37	57.75
May-16	368.4	17.35	17.35		15.66	8.92	1.76	63.71
Jun-16	378.675	10.28	10.28		14.59	7.14	2.04	67.14
Jul-16	260.05	-118.63		118.63	11.67	29.44	0.40	28.39
Aug-16	241.35	-18.70		18.70	9.34	27.29	0.34	25.49
Sep-16	243.1	1.75	1.75		7.82	21.83	0.36	26.37
Oct-16	232.5	-10.60		10.60	6.25	19.58	0.32	24.21
Nov-16	241.65	9.15	9.15		6.83	15.67	0.44	30.37
Dec-16	258.1	16.45	16.45		8.76	12.53	0.70	41.13
Jan-17	262.2	4.10	4.10		7.83	10.03	0.78	43.83
Feb-17	280.3	18.10	18.10		9.88	8.02	1.23	55.19
Mar-17	278	-2.30		2.30	7.90	6.88	1.15	53.47
Apr-17	311.8	33.80	33.80		13.08	5.50	2.38	70.40
May-17	319.2	7.40	7.40		11.95	4.40	2.71	73.08

Table 3: HUL Equity Analysis Using Rsi Indicator

Month-Year	Close Price	Change	Gain	Loss	Average Gain	Average Loss	Relative Strength	5-Period RSI
Jun-12	454.35							
Jul-12	466.95	12.6	12.6					
Aug-12	518.25	51.3	51.3					
Sep-12	544.55	26.3	26.3					
Oct-12	547.45	2.9	2.9					
Nov-12	538.35	-9.1		9.1	18.62	1.82	10.23	91.10
Dec-12	524.7	-13.65		13.65	14.90	4.19	3.56	78.06
Jan-13	472.95	-51.75		51.75	11.92	13.70	0.87	46.52
Feb-13	443.9	-29.05		29.05	9.53	16.77	0.57	36.25
Mar-13	466.1	22.2	22.2		12.07	13.42	0.90	47.35
Apr-13	583.6	117.5	117.5		33.15	10.73	3.09	75.55
May-13	592.5	8.9	8.9		28.30	8.59	3.30	76.73
Jun-13	585.05	-7.45		7.45	22.64	8.36	2.71	73.04
Jul-13	613.45	28.4	28.4		23.79	6.69	3.56	78.06
Aug-13	628.55	15.1	15.1		22.05	5.35	4.12	80.48
Sep-13	627.4	-1.15		1.15	17.64	4.51	3.91	79.64
Oct-13	609.25	-18.15		18.15	14.12	7.24	1.95	66.10
Nov-13	594.45	-14.8		14.8	11.29	8.75	1.29	56.34
Dec-13	570.95	-23.5		23.5	9.03	11.70	0.77	43.57
Jan-14	570.35	-0.6		0.6	7.23	9.48	0.76	43.26
Feb-14	548.8	-21.55		21.55	5.78	11.89	0.49	32.71
Mar-14	603.65	54.85	54.85		15.60	9.52	1.64	62.11

Apr-14	566.9	-36.75		36.75	12.48	14.96	0.83	45.47
May-14	600.95	34.05	34.05		16.79	11.97	1.40	58.38
Jun-14	619.5	18.55	18.55		3624.43	9.58	378.50	99.74
Jul-14	685.5	66	66		2912.75	7.66	380.22	99.74
Aug-14	741.25	55.75	55.75		2341.35	6.13	382.04	99.74
Sep-14	745.85	4.6	4.6		1874.00	4.90	382.23	99.74
Oct-14	738.35	-7.5		7.5	1499.20	5.42	276.49	99.64
Nov-14	786.6	48.25	48.25		1209.01	4.34	278.71	99.64
Dec-14	759.5	-27.1		27.1	967.21	8.89	108.79	99.09
Jan-15	932.8	173.3	173.3		808.43	7.11	113.67	99.13
Feb-15	909.8	-23		23	646.74	10.29	62.85	98.43
Mar-15	872.9	-36.9		36.9	517.39	15.61	33.14	97.07
Apr-15	849.5	-23.4		23.4	413.91	17.17	24.11	96.02
May-15	859.8	10.3	10.3		333.19	13.74	24.26	96.04
Jun-15	916.45	56.65	56.65		277.88	10.99	25.29	96.20
Jul-15	921.05	4.6	4.6		223.23	8.79	25.39	96.21
Aug-15	861.5	-59.55		59.55	178.58	18.94	9.43	90.41
Sep-15	813.3	-48.2		48.2	142.86	24.79	5.76	85.21
Oct-15	801.85	-11.45		11.45	114.29	22.13	5.17	83.78
Nov-15	809.45	7.6	7.6		92.95	17.70	5.25	84.00
Dec-15	862.35	52.9	52.9		84.94	14.16	6.00	85.71
Jan-16	816.9	-45.45		45.45	67.95	20.42	3.33	76.89
Feb-16	829.8	12.9	12.9		56.94	16.34	3.49	77.71
Mar-16	869.5	39.7	39.7		53.49	13.07	4.09	80.37
Apr-16	866.65	-2.85		2.85	42.80	11.02	3.88	79.52
May-16	849.9	-16.75		16.75	34.24	12.17	2.81	73.78
Jun-16	898.6	48.7	48.7		37.13	9.74	3.81	79.23
Jul-16	921.5	22.9	22.9		34.28	7.79	4.40	81.49
Aug-16	916.65	-4.85		4.85	27.43	7.20	3.81	79.20
Sep-16	867.8	-48.85		48.85	21.94	15.53	1.41	58.55
Oct-16	840.25	-27.55		27.55	17.55	17.93	0.98	49.46
Nov-16	844.3	4.05	4.05		14.85	14.35	1.04	50.86
Dec-16	826.3	-18		18	11.88	15.08	0.79	44.07
Jan-17	855.15	28.85	28.85		15.28	12.06	1.27	55.88
Feb-17	864.9	9.75	9.75		14.17	9.65	1.47	59.49
Mar-17	909.75	44.85	44.85		20.31	7.72	2.63	72.45
Apr-17	934.7	24.95	24.95		21.24	6.18	3.44	77.47
May-17	1066.8	132.1	132.1		43.41	4.94	8.79	89.78

Table: 4

Month-Year	RSI(DABUR)	RSI(ITC)	RSI (HUL)
Feb-13	74.1	74.94	36.25
Jun-13	87.5	73.97	73.04
Oct-13	60.94	49.35	66.1
Feb-14	77.2	72.65	32.71
Jun-14	90.89	65.53	99.74

Oct-14	84.7	62.15	99.64
Feb-15	85.24	33.29	98.43
Jun-15	83.38	40.82	96.2
Oct-15	56.3	48.21	83.78
Feb-16	40.99	48.54	77.71
Jun-16	71.01	67.14	79.23
Oct-16	50.46	24.21	49.46
Feb-17	46.05	55.19	59.49

Figure: 1 Comparative Rsi Indicator



Analysis

The RSI analysis of Dabur shows that there is overbought till 15-Jun, and it indicated gradual oversold except in 16-Jun and no oversold.

The RSI analysis of ITC shows that there is overbought in only 3 periods i.e. 13-Feb, 13-Jun, 14-Feb and 16-Oct resembles oversold.

The RSI analysis of HUL shows that out of 13 periods, 7 period's shows overbought and no period shows oversold is indicated.

From the above Comparative RSI Indicator we can declare that HUL performance is better than other companies. Investing in HUL may yield more returns to the investor. When compared to investing in remaining in companies.

VI. FINDINGS

- RSI is considered overbought when above 70 and oversold when below 30. These traditional levels can also be adjusted to better fit the security or analytical requirements. Raising overbought to 80 or lowering oversold to 20 will reduce the number of overbought/oversold readings.

- The risk involved in the selected companies share price has been analyzed and evaluated HUL performance is better with less risk involvement when compared to other companies of the study.

SUGGESTIONS

- Companies needs to maintain stability in their share prices, which in turn gives motivation to investors to invest in those particular company.
- Companies need to analyse their market value of their shares periodically and take necessary steps to maintain stability.
- Companies need to realize the importance to withstanding with the competitors and increase their market share by increasing the shareholders wealth.

CONCLUSION

One of the keys to trading success is developing the ability to spot opportunities and identify ways to take advantage of them. RSI tool is a best tool to analyse the stocks for traders in stock market. Clearly a great many opportunities are likely available at any given point of time among the stocks that are traded in the market. Trading in the direction of the major trend has long been one of the best methods for improving one's odds in the financial markets.

Though we have multiple tools and methods to manage our portfolio, we still need to do our homework on research and make sure to come up with additional information, trends etc. This is to make even an average trader to access technology what the big players has, to control their financial future and retire happily.

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