Creating Support-Resistance Levels Using BOLL and Predicting Future Market Trend: A Study of Current Scenario of Larsen & Toubro

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Abstract: The study is focused over understanding and predicting the trend of the sample stock taken in the study. The study involves Bollinger bands which helps to identify the volatility of the stock by the calculation of the moving averages and RSI (Relative Strength Index) which shows the nature of the stock in terms of bearishness or bullishness. The study includes the recent stock data of 8 months L&T through which the stock volatility and nature could be identified using the technical tools. The study interprets the support levels and resistance levels of the stock by the medium of technical analysis.

Keywords: Bollinger bands, moving average, relative strength index, resistance level, support level, technical analysis.

I. Introduction

The evolution of L&T into the country's largest engineering and construction organization is among the most remarkable success stories in Indian industry. L&T is a technology, engineering, construction and manufacturing company. It is one of the largest and most respected companies in India's private sector. It was founded in Bombay (Mumbai) in 1938 by two Danish engineers (Henning Holck-Larsen and Soren Kristian Toubro) taking refuge in India, as well as an Indian financing partner. Both of them were strongly committed to developing India's engineering capabilities to meet the demands of industry. The company has business interests in engineering, construction, manufacturing goods, information technology and financial services, and also has an office in the Middle East and other parts of Asia.More than seven decades of a strong, customer-focussed approach and the continuous quest for world-class quality have enabled it to attain and sustain leadership in all its major lines of business. L&T has an international presence, with a global spread of offices. A thrust on international business has seen overseas earnings grow significantly. It continues to grow its global footprint, with offices and manufacturing facilities in multiple countries. The company's businesses are supported by a wide marketing and distribution network, and have established a reputation for strong customer support.

L&T believes that progress must be achieved in harmony with the environment. A commitment to community welfare and environmental protection are an integral part of the corporate vision. In response to changing market dynamics, L&T has gone through a phased process of redefining its organisation model to facilitate growth through greater levels of empowerment. The new structure is built around multiple businesses that serve the needs of different industries.

Larsen &Toubro remains the undisputed number one infrastructure company in India. Nobody could have summarised its role in nation building better than P Chidambaram, who called it India's only national sector company (on the company's 70th anniversary when he was the Union Finance Minister). That was in 2007. Today, L&T continues to build on its reputation by maintaining an all-round growth across the infrastructure segments where it operates. The recently concluded fiscal has been quite good for the company.

As a company statement said, 'various cost optimisation initiatives launched by the Company, aided by lower input costs, led to an improvement in the profitability of both project and product businesses'. With well-capitalised balance sheet coupled with robust execution mechanism, a wide array of capabilities, integrated operations, strong portfolio of assets and a colossal order book of over Rs1,30,000 crore makes Larsen & Toubro a proxy to India's infrastructure story and Construction Week's top pick in the sector.

The group continues to hold a unique place in the Indian E&C space as a diversified and leading engineering player, with exposure in the areas of power, defence, nuclear and equipment. During 1QFY2012, it posted decent numbers and stands tall on an order backlog of Rs1,36,172 crore. Its order inflow for 1QFY2012 stood at Rs16,190 crore, up 3.6% year-on-year. Similarly, over 90% of its order book came from the domestic sector, while Middle East barely accounted for 6%. The share of the public sector orders in Q1FY12 order book compared to Q1FY11 declined from 47% to 38%, while the private order backlog rose from 40% to 45%.

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In 2014, L&T ranked 500 on Forbes list of 2000 world's largest and most powerful public companies based on revenues, profits, assets and market value.54 Indian companies made it to the prestigious list, and L&T is the highest ranked company in the engineering and construction section and 10th among all Indian public and private sectors.

II. Literature Review

Technical analysis depends on historical and time-series data. These strategists believe that market timing is critical and opportunities can be found through the careful averaging of historical price and volume movements and comparing them against current prices. Technicians also believe that there are certain high/low psychological price barriers such as support and resistance levels where opportunities may exist. They further reason that price movements are not totally random, however, technical analysis is considered to be more of an art form rather than a science and is subject to interpretation.

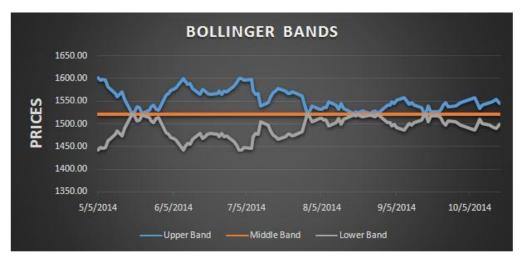
Objectives of the Study

The main objectives of this study are: -

- **1.** To identify the inherent technical strength and weaknesses of a particular scrip with the help of Relative Strength Index (RSI).
- **2.** To identify the trend reversals and their support and resistance levels with the help of Bollinger Bands(BOLL) to formulate the buying and selling strategy.
- 3. To determine the point of buy and sell decision by investor with the help of Support and Resistance levels.
- 4. To estimate the direction of market price of shares on the NSE with the help of BOLL as it will show the real volatile conditions of the market.

Data Analysis

Bollinger Bands are a kind of trading envelope. They are lines plotted at an interval around a moving average. Bollinger Bands consist of a moving average and two standard deviations charted as one line above and one line below the moving average. The line above is two standard deviations added to the moving average. The line below is two standard deviations subtracted from the moving average. Traders generally use them to determine overbought and oversold zones, to confirm divergences between prices and indicators, and to project price targets. The wider the bands are, the greater the volatility is. The narrower the bands are, the lesser the volatility is. The moving average is calculated on the close.



Relative Strength Index

Relative Strength Index is a powerful indicators that signals buying and selling opportunities ahead of the market. It is intended to chart the current and historical strength or weakness of a stock or market based on the closing prices of a recent trading period. It is a technical momentum indicator that compares the magnitude of recent gains to recent losses in an attempt to determine overbought and oversold conditions of an asset. The RSI ranges from 0 to 100. An asset is deemed to be overbought once the RSI approaches the 70 level, meaning that it may be getting overvalued and is a good candidate for a pullback. Likewise, if the RSI approaches 30, it is an indication that the asset may be getting oversold and therefore likely to become undervalued. It was discovered by the findings of calculation that if the final figure which stated RSI (Relative Strength Index) was less than 30, then it will represent the bullish condition of stock. On the other hand if RSI indicates calculated figure more than 70, then in that case the stock is bearish.



III. Data Interpretation And Findings

After computed all the collected data, the following analysis can be done: -

- The data for L&T for the tenure of 7 months is taken for the study. As per the graphs we can infer that from 18/05/2014 the RSI of L&T crossed 70 bar indicating bearishness and then constantly rose up above till 13/06/2014 on the other hand the Bollinger bands of L&Tindicate that both the upper band and the lower band meet to the middle band indicating very low volatility of the stock for the date 18/05/2014, then they start rising again and again meet on 23/05/2014.
- From 23/05/2014 the gap between the upper and lower band again starts to rise constantly till it reaches its high on 09/06/2014, indicating the most volatile day of the stock. When we see RSI of the stock for the day 09/06/2014 it is already above 70, showing 82 RSI value and still maintaining bearish nature.
- From 09/06/2014 the distance between the upper and lower band starts to decrease diminishingly indicating volatility going down. This trend is short lived and the upper band and lower band again move apart creating volatility again of the stock on 02/07/2014. The distance between the two consecutive bands remain the same till 07/07/2014 indicating heavy volatility of the stock for the time period of 02/07/2014 till 07/07/2014 in the whole study span.
- RSI of the date 02/07/2014 is at 56 point indicating lowering of bearish condition of stock. Over the time period of 02/07/2014 till 07/07/2014 the RSI has went up to the value 69 on 04/07/2014 and then had come back to 55 RSI on 07/07/2014.
- ➤ After 07/07/2014 the two bands again started coming closer making the stock less volatile till 11/07/2014, then again the upper and lower band started to move apart creating the stock volatile.
- Then from the data we understand that from 18/07/2014 the bands suggest volatility is decreasing marginally till28/07/2014.
- In the meantime the RSI for 07/07/2014 was 65 which suggest bearish condition and over 11/07/2014, RSI valued to 38 which suggest that stock was pushed to bullish path over this time period.
- On 18/07/2014 the RSI is noted 47 which suggest a likely equilibrium and on 28/07/2014 RSI is noted as 44, by this we understand that in this time span the stock has been comparatively stable, though the RSI fell marginally.
- The bands start merging again from 28/07/2014 and touching completely on 30/07/2014 indicating negligent volatility of the stock.
- Again bands started to move apart a little and reached over a high point on 01/08/2014, after this point bands tended to fall marginally to meet each other but ultimately both the bands moved apart from their position on 08/08/2014 which suggest that during time period of 01/08/2014 till 08/08/2014 stock was ranging up and down in terms of its volatility but still maintaining its low volatility. The RSI's during these dates for 01/08/2014 was 35 and for 08/08/2014 was 11, which suggest that stock was pushed aggressively to the bullish state.
- The bands after 08/08/2014 again started merging and rising on 13/08/2014 while maintaining low volatility rate, after this time period the upper and lower bands remained almost touching to each other till 28/08/2014 suggesting negligent volatility during this time period. The RSI's during this time period on 13/08/2014 was 22 and on 28/08/2014 was 53, which is indicating that the stock in this time period again went to near equilibrium from a bullish state.
- The bands from 28/08/2014 went apart again till 08/09/2014 and then again start coming closer and met at 16/09/2014 reaching to negligible volatility. The RSI's during this time period for 08/09/2014 was 74 and

on 16/09/2014 was 51 which indicates that the stock was in near equilibrium on 28/08/2014 and rose to bearish stage on 08/09/2014 and then came back to near equilibrium stage on 16/09/2014.

- The bands after 16/09/2014 went apart a bit on 18/09/2014 and then again touched each other till 22/09/2014 and then again started getting apart till 25/09/2014, suggesting again rise in volatility after a short span of negligible volatility. The RSI's during this time period for 18/09/2014 was 57 and for 22/09/2014 was 42 and for 25/09/2014 was 25, this data clearly indicates that stock is moving very aggressively to bullish state in a short span of time.
- The bands after 25/09/2014 tend to meet and then tend to move apart again reaching on 07/10/2014 and then again start to meet on 09/10/2014, then again the upper and lower band move apart till 16/10/2014, by this we interpret that the stock is going up and down in terms of its volatility. The RSI's of this time period for 07/10/2014 was 26 and for 09/10/2014 was 46 and for 16/10/2014 was 32, by this data we analyse that the stock is not stable and from bullish condition on 07/10/2014, and then it goes to near equilibrium on 09/10/2014 an then again comes to bullish state on 16/10/2014.

IV. Conclusion

From the study of the data and its analysis we are in a position to conclude that though L&T stock has been volatile many times during the span of study, the most volatile time span recorded was from 02/07/2014 to 07/07/2014 and the least from 18/08/2014 to 28/08/2014 showing the least or negligible volatility .The RSI's also have been widely ranging from 11 on 08/08/2014 to 87 on 10/06/2014 in the study data, but the analysis show a relation between Bollinger bands and RSI's in relation to the stocks support levels and resistance levels. The data interpretation tells that the times of heavy bullishness or bearishness of the stock, the stock is recorded volatile during those periods. From the data we also find that the stock went less volatile when the RSI's were pushing towards the equilibrium points. The findings clearly show how the stock's nature has been over the time period's data taken for the study, showing clear support levels and resistance levels predicted by the study.

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ANNEXURE

Table 1: Showing BOLL & RSI analysis of Larsen & Toubro

Date	Open	High	Low	Close	SD	UB	МВ	LB	RSI	Result
01/04/2014	1273.1	1290	1254	1279.05						
02/04/2014	1290	1310	1275.05	1300.45						
03/04/2014	1295.1	1297.95	1254.6	1290.1						
04/04/2014	1288.9	1288.9	1266.8	1277.1						
07/04/2014	1276.3	1294.75	1267.2	1284.35						
09/04/2014	1289	1308.8	1277.45	1298.05						
10/04/2014	1296.25	1327.25	1294.05	1314.25						
11/04/2014	1306.15	1308.4	1290.05	1298.5						
15/04/2014	1290.65	1311.6	1276	1297.85						
16/04/2014	1291.35	1294.9	1256	1259.9						
17/04/2014	1260.55	1276.9	1242	1268.95						
21/04/2014	1272	1325	1272	1322.55						
22/04/2014	1325	1355	1317.05	1346.55						
23/04/2014	1365	1388.5	1351.2	1376.35					69.25	SELL
25/04/2014	1374.9	1378.15	1345	1349.9					62.69	SELL
28/04/2014	1350	1363.9	1325	1328.5					55.02	HOLD
29/04/2014	1335	1341.75	1307.55	1321.4					55.67	HOLD

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