

Investment Strategy Optimization through Fundamental and Technical Analysis: A study of Stock Price Movement of Engineering Sector

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Abstract: Investment decisions by the investors can be based on both fundamental and technical analysis. The performance of a security that represents a company can be said to depend on the performance of a company itself. Fundamental analysis examines the economic environment, industry and company performances before making any investment decisions. While fundamental analysis is an important aspect, some analysts believe more in technical approach of analysing a security. Technical analysis helps in predicting the future prices of securities based on their historical price and volume movements. It also helps in identifying the trend reversals at an early stage to formulate buy or sell strategy. This paper aims at fundamental and technical analysis of NSE listed Engineering sector large and midcap companies. The tool used for fundamental analysis is financial ratios and for technical analysis includes Bollinger bands with candlestick charts. The paper concludes that after selecting best performing securities through fundamental analysis, they are technically analysed and finally found that some securities are technically stronger than the others.

Keywords: Fundamental analysis, Technical analysis, Bollinger band, Engineering sector, Investment decisions.

I. Introduction

Stock market is difficult to predict thus, investors come across two ways to analyse and predict shares future values. First analytical approach is Fundamental analysis which attempts to find out the true value of securities which is based on the forecast and analysis of dividends and earnings that can be expected from the firm. Second approach is Technical analysis, a method of examining the past price and volume movements of securities to forecast future price movements. Based on these analyses, investors adopt the strategy of buying, holding or selling the securities at the current market prices.

The Indian Engineering sector is one of the biggest and diverse sectors that have witnessed a remarkable growth over the last few years driven by increased investments in infrastructure and industrial production. The engineering sector, being closely linked with the manufacturing and infrastructure sectors, is of strategic value to India's economy. India exports its engineering goods mostly to the US and Europe, which generally accounts for over 60 per cent of the total exports. Engineering exports for the period of FY18 were US\$ 76.20 billion as compared to US\$ 65.23 billion in the same period previous year. In the Union Budget 2018-19, the Indian government has allocated US\$ 92.22 billion for the infrastructure sector. Allocation to the defence sector has raised to US\$ 45.57 billion under Union Budget 2018-19. In accumulation, Make in India policy is being carefully pursued to achieve greater self-sufficiency in the area of defence equipment including air-craft. As with the increased growth in engineering sector, potential investors looking forward to invest in securities of engineering sector companies.

This study is an attempt to fundamentally and technically analyse the stock prices of engineering sector companies so that it would be helpful for the investors to make optimal investment strategy in particular securities.

II. Literature Review

To predict the stock value that proved credibility in both emerging and developed markets, Ahmed. S. Wafi, Hassan, Adel Mabrouk (2015) attempted to reach better stock valuation model, Residual Income Model (RIM) out of other models of financial analysis approach as this model doesn't require financial efficiency for its application. Sudheer, V. (2015) did analytical study on different scrips to identify whether they are technically strong or not using techniques Moving Average Convergence Divergence (MACD) so as to assist investment decisions in Indian stock market. Dr. M. Muthu Gopalakrishnan, Mr. Akarsh P K (2017) conducted a study on equity analysis of automobile industry that will help the potential investors in taking informed and rational investment decision. From the analysis, it is found that among all other companies Mahindra & Mahindra Ltd is the best company to invest because its beta value is less than one (0.9082). Pushpa BV, Sumithra C.G, Madhuri Hegde (2017) investigated through their paper that using technical analysis investors identify trend reversal of stock prices at an earlier stage to formulate buy-hold-sell strategies. Narasimhan Jegadeesh and Sheridan Titman (2018) documented that strategies which buy stocks that

have performed well in the past and sell stocks that have performed poor generate significant positive returns over 3 to 12 month holding periods. They found that the profitability of these strategies is not because of their systematic risk or delayed stock price reactions to common factors. However, part of the unusual returns generated in the first year after portfolio development dissipates in the following two years. A related pattern of returns around the earnings announcements of past winners and losers is also documented. The study of above literatures concludes that the study of both fundamental and technical analysis of different scrips has not done so far, which is showed through this paper because technical analysts must have knowledge of company's financial performance which can be possible through fundamental analysis so that they can recommend potential investors optimum stock to invest in and get maximum return using their investment strategies.

III. Research Methodology

3.1 Research Design

The Descriptive research design is being used in this research as the quantitative data is used to analyse the characteristic of each stock whether it is in uptrend or downtrend which is helpful for investor to buy that company's particular stock or not.

3.2 Objectives of study

- To study the relevance of fundamental and technical analysis in Indian stock market.
- To carry out the fundamental and technical analysis of NSE listed Engineering sector large and mid-cap companies' securities.
- To suggest the potential investors in making investment decisions in selected securities.

3.3 Methods of data collection

The research is fully based on secondary data and hence, the data is collected from NSE India and various books, journals and websites.

3.4 Statistical tools used:

For technical analysis, Bollinger bands are used as a technical indicator with candlestick charts.

3.5 Duration of the study

This study is carried out for two months (from July, 2018 to September 2018). However, to get better estimation of portfolio of stocks, it can be extended up to many months.

3.6 Sample size

NSE- listed all large and mid- market cap engineering sector companies (10) has taken for this study.

IV. Analysis and Interpretation

4.1 Fundamental analysis

Fundamental analysis is performed to find out which stocks are performing better than other so as to make their portfolio. Below are the steps to be followed in fundamental analysis-

Table 1: NSE listed engineering sector large and mid-cap companies

S.No.	COMPANY NAME	P/E RATIO
1.	QUESS CORP LIMITED	60.81
2.	SKIPPER LIMITED	14.50

3.	MCNALLY BHARAT ENGINEERING LIMITED	-ve
4.	ACTION CONSTRUCTION EQUIPMENTS LIMITED	30.60
S.No.	COMPANY NAME	P/E RATIO

5.	SHRIRAM EPC LIMITED	-ve
6.	PRAJ INDUSTRIES LIMITED	45.94
7.	GMM PFAUDLER LIMITED	47.26
8.	SANGHVI MOVERS LIMITED	-ve
9.	ELECON ENGINEERING COMPANY LIMITED	81.94
10.	WINDSOR MACHINES LIMITED	37.81

Step 1: Calculate Industrial P/E Ratio

Industrial P/E Ratio = (Sum Of All Individual P/E Ratios) / No. of Companies = 45.55

Step 2: Classification of stocks

- **Undervalued Stocks:** Whose P/E Ratio < Industrial P/E Ratio
- **Overvalued Stocks:** Whose P/E Ratio > Industrial P/E Ratio

Table 2: Undervalued and Overvalued Stocks

1.	QUESS CORP LIMITED	60.81 (O)
2.	SKIPPER LIMITED	14.50 (U)
3.	MCNALLY BHARAT ENGINEERING LIMITED	-ve (REJECTED)
4.	ACTION CONSTRUCTION EQUIPMENTS LIMITED	30.60 (U)
5.	SHRIRAM EPC LIMITED	-ve (REJECTED)
6.	PRAJ INDUSTRIES LIMITED	45.94 (O)
7.	GMM PFAUDLER LIMITED	47.26 (O)
8.	SANGHVI MOVERS LIMITED	-ve (REJECTED)
9.	ELECON ENGINEERING COMPANY LIMITED	81.94 (O)
10.	WINDSOR MACHINES LIMITED	37.81 (U)

Note: Undervalued Stocks (U), Overvalued Stocks (O), Stocks Whose P/E Either Negative OR More Than 100 Are Rejected.

STEP 3: Findout Value Pick

A value stock is a security trading at a lower price than what the company's performance may otherwise signify. Investors in value stocks attempt to capitalize on inefficiencies in the market, since the price of the underlying share may not match the company's performance. Only undervalued stocks are used for determining value pick stocks. When either revenue or profit or both of given undervalued stocks for current year are higher than the previous year, select those stocks as value picked otherwise reject them.

Table 3: List of Value Stocks

COMPANY NAME	REVENUE (IN Rs. Cr)		PROFIT (IN Rs. Cr)		STATUS
	(TOP LINE)		(BOTTOM LINE)		
	2016	2017	2016	2017	
SKIPPER LIMITED	1480.49	1702.96 ↑	95.13	111.50 ↑	SELECTED
ACTION CONST	613.89	729.48 ↑	8.81	19.64 ↑	SELECTED
WINDSOR	276.38	291.15 ↑	14.32	13.93 ↓	SELECTED

Step 4: Find out Growth Pick

Growth stock is a security of companies with strong anticipated growth potential. A balanced diversified portfolio will have both value stocks and growth stocks. These portfolios are referred to as a blended portfolio. Now to discover growth stock/pick, we need to find out PEG Ratio (P/E TO GROWTH RATIO) of each overvalued stock and select only those stocks whose PEG ratio must be between 0 and 1.

$$\text{PEG RATIO} = (\text{P/E RATIO}) / \text{EPS GROWTH}$$

COMPANY NAME	EPS		PEG RATIO	STATUS
	2016	2017		
QUESS CORP	7.45	7.34	-ve	REJECTED
GMM PFAUDLER	12.56	19.31	0.87	SELECTED
PRAJ IND	3.75	2.63	-ve	REJECTED

ELECON ENGG	3.96	1.88	-ve	REJECTED
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Table 4: Finding of Growth Stock

Step 5: Financial Ratios And Ranking

Table 5: Financial Ratios and Ranking

COMPANY NAME	CURRENT RATIO	QUICK RATIO	DEBT TO EQUITY RATIO	INVENTORY TURNOVER RATIO	SUMMING UP RANKS	FINAL RANKS
ACTION CONST	1.10 (3)	0.88 (3)	0.32 (2)	7.05 (1)	(9)	(1)
SKIPPER	0.95 (4)	1.15 (1)	0.85 (3)	4.99 (3)	(11)	(4)
WINDSOR	1.43 (2)	1.14 (2)	1.03 (4)	6.06 (2)	(10)	(3)
GMM PFAUDLER	1.59 (1)	0.84 (4)	0 (1)	4.96 (4)	(10)	(2)

Current ratio: The higher the current ratio, the more capable the company is of paying its obligations, as it has a larger proportion of asset value relative to the value of its liabilities. However, a high ratio (above 3) does not necessarily indicate that a company is in a state of financial well-being either.

Quick ratio: Higher the ratio, better the result. However, a high ratio (above 3) does not necessarily indicate that a company is in a state of financial well-being either.

Debt to equity ratio: The D/E ratio indicates how much debt a company is using to finance its assets relative to the value of shareholders' equity. Lower ratio, better the result.

Inventory turnover ratio: Inventory turnover is a ratio showing how many times a company has sold and replaced inventory during a period. The company can divide the days in the period by the inventory turnover formula to calculate the days it takes to sell the inventory on hand. It is calculated as-

$$\text{Sales} / \text{Average inventory}$$

Higher ratio, better the result.

Ranking: Now when we have value pick and growth pick stocks list, we'll see which stock is performing better than the other and for that we have to rank them on priority basis. The ranking is done by comparing the important financial ratios of the sector in which the companies are lying. The final highest ranked scrip (say, rank 1) is the one in which investor should definitely invest to get maximum return and least risk while in the lowest ranked scrip, they should invest carefully. Also, from table 5, one can see that Windsor and GMM Pfaudler scrips both have same final ranking which can confuse investors where to invest out of these two securities. Here comes the technical analysis approach.

4.2 Technical Analysis: Bollinger band with Candle Stick Charts

Bollinger bands are one of the most popular technical indicators for traders in any financial markets whether investors are trading stocks, bonds or foreign exchange. Bollinger band is a set of lines plotted two standard deviations (positively and negatively) away from the band median of the security's price. It is developed by famous technical trader John Bollinger. Many

traders believe that closer the prices move to the upper band, the more overbought the market and closer the prices move to the lower band, the more oversold the market.

Action Construction Equipments Limited



Fig 1: Candlestick Chart with Bollinger Band indicator of Action Const Scrip

Action Construction chart with Bollinger band technique (from July- till mid-September) indicates that there is a high demand- supply and volatility in the market as the difference between upper band and lower band is huge, hence, it is right time to make buy- sell investment decisions but in the starting of September, there was decrease in volatility as gap between bands got reduce, thus it is advisable not to trade during such period because the wider apart the bands move, the more likely chance of a decrease in volatility in future and greater possibility of exiting the trade. The band gives no indication when the change may take place or in which direction the price could move.

Skipper Limited



Fig 2: Candlestick Chart with Bollinger Band indicator of Skipper Scrip

This chart indicates that the Skipper stock is bearish in nature as there is downtrend in the price movement. Thus, a potential investor can hold its security in Skipper if he has and wait for trend reversal. From the chart, it can be seen that on August 13, the stock price touched below lower Bollinger band, and thought to be oversold, triggered a buy signal because of which after August 13, price started increasing because of demand of Skipper stock in the market. Here, investor can either buy the securities and sell them for short period carefully as the downtrend will repeat because stock is bearish in nature.

Windsor Machines Limited



Fig 3: Candlestick Chart with Bollinger Band indicator of Windsor Scrip

This chart tells that Windsor scrip is bearish in nature and there is need of trend reversal for a short period to get returns from investment. As seen from the chart, in initial days of the August month, upper and lower Bollinger band came very close to each other, indicates highly low volatility in the scrip price movement known as squeeze, which resulted in decrease in trading of this share. But, low volatility indicates a potential sign of future increased volatility and possible trading opportunity. Be careful in case of bearish stock if volatility increases and trend is not reversed then, an investor can't purchase security or investors who have hold securities will not be in a position to sell them as it would not be profitable for them.

GMM Pfadler Limited



Fig 4: Candlestick Chart with Bollinger Band indicator of GMM Pfadler Scrip

This chart depicts that GMM Pfadler scrip is bullish in nature. There was also a scenario of squeeze on August 23 which might be resulted in trend reversal but trend reversal didn't happen and stock price continuously getting increased making the scrip bullish in nature.

V. Findings

Fundamental and technical analysis shows that-

- Out of ten engineering sector stocks, only four stocks are performing well based on their past two year's financial performance.
- Action Const scrip shows high volatility which is good for short term investment or intraday trading purposes.
- GMM Pfadler scrip is bullish in nature and gives high return on investment in long run.

- Skipper and Windsor scrips are bearish in nature, hence, be careful while making any investment strategy for these stocks.
- The same ranking issue of GMM Pfadler and Windsor scrips during fundamental analysis gets resolved through technical analysis- GMM must be on top priority than Windsor scrip.

VI. Suggestions

The investors should be trained to use the fundamental ratios and technical analysis tools since these must help them in their investments to get optimum returns.

- A stock must be tracked for at least one month before investing in it.
- The investor shouldn't consider only fundamental or technical analysis for investing in any company.

VII. Scope of research

Investors can make their own portfolio of shares based on these analyses and be able to get optimum returns accordingly.

VIII. Conclusion

Buying and selling of shares is not an easy task if an investor wants to make money from doing it. For making investments in securities, potential investor must have knowledge of stock market, approaches of analysing the securities fundamentally and technically. Therefore, this research on optimal investment strategy using analytical approaches will help investors to analyse the securities in which they want to invest and be able to get maximum returns from them.

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