

# To Study the Technical Analysis of Selected Small, Middle and Large Cap in Defence Sector

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**Abstract:** The technical analysis of defense companies is an important tool for investors to determine optimal investment opportunities. This analysis involves the examination of charts and technical indicators to identify patterns and predict trends in market behavior. The analysis considers factors such as market volatility, market trends, and the financial performance of the companies. By utilizing technical analysis, investors can make informed decisions about which companies to invest in, when to buy or sell, and when to exit a position. This paper examines the technical analysis of defense companies and highlights how it can be used by investors to make effective decisions in the defense industry. For this we used various tools to examine the result. The tools includes on balance volume, Fibonacci, moving average convergence and divergence, stochastic and candlesticks chart patterns

**Keywords:** Market capitalization, On balance volume, Market trend.

## I. INTRODUCTION

The defense sector refers to the industry that designs, manufactures, and maintains various types of military equipment, weapons systems, vehicles, and related components. It includes both public and private organizations that work closely with government agencies to meet national security requirements. The defense sector is a critical aspect of any modern country's national security and plays a crucial role in maintaining stability and peace. The sector provides the military with the tools, equipment, and technology they need to defend their borders, support peacekeeping efforts, and counter terrorism threats. The defense industry is known for its high level of research and development, innovation, and technical expertise. It drives technological advancements, leading to the development of new materials, weapon systems, and defense technologies that have significant civilian applications too. The sector spans across many fields, including engineering, manufacturing, scientific research, and logistics. Governments worldwide invest heavily in the defense sector, making it one of the most significant components of their economies. The industry creates jobs, generates revenue, and contributes to national GDPs. As a result, the defense sector is a vital part of any country's economic and strategic infrastructure.

### 1.1 Objectives of the Study

- To study on balance volume and Fibonacci distribution of the selected defense companies in India
- To study Relative strength index and moving average convergence & divergence □ to study stochastic oscillator/indicators and candlestick chart patterns.
- To forecast, future price movements in the market based on historical price of data and technical indicators.

### 1.2 Statement of Problems

The main problem of technical analysis towards the selected defense companies is that the history does not exactly repeat itself thus the assumption of the technical analysis itself is not accurate. One of the biggest problem with this technical analysis is that we can only test it in the past. The problem with a trading system is that it influences the market. This is the fundamental problem of back testing. It has the same limitations of any strategy based on particular trade triggers. The chart can be misinterpreted. The formation may be too long for the moving averages may be too long or too short for the type of

trade we are looking to make. The main disadvantage of technical analysis towards defense companies is that we can lose a lot of money if we are confident that it will work this time and cut corners on risk management. Marketers repeat patterns, but these patterns are constantly changing, making it different to make money in the long term by always making the same trades.

Selected defense companies deals with complex technology that requires specialized knowledge to analyses. It needs to acquire extensive knowledge and expertise about the specific technology used in defense systems. It uses highly specialized and complex equipment that can be difficult to analyses without proper training and expertise. Rapid development in technology can make it difficult for defense companies to keep up with the latest advancements and ensure that their system remains up to- date and effective. These companies are often restricted by tight budget and limited resources, which can make it difficult to invest in new equipment and analysis tools. It will be protected at all times to avoid breaches that could compromise national security. This analysis is highly dependent on the accuracy of data inputs and the competence of analyst, human errors can lead to incorrect conclusion that could have serious consequences. These companies often work with the multiple vendors and suppliers which can lead to interoperability issues that can affect the accuracy and usefulness of technical analysis.

## II. RESEARCH METHODOLOGY

The secondary data collection is done with charts and various technical analysis tools. The data has also been collected from the various journals and also using some indicators.

### Research Design:

#### Quantitative Research :

The present Study deals with the quantitate research. It is the process of collecting and analyzing numerical data. It can be used to find patterns and averages make predictions, test relationships between selected defense companies in India.

#### Time Period:

The present study was made for a period of 5 months from January 2023 to May 2023.

#### Size of Sample

Ten defense companies were selected based on market capitalization. The sample for the purpose of the study of this paper has considered ten defense companies which fall under the mid-cap small cap and large-cap companies in defense sector. For the purpose of the study, data was extracted from NSE India. The top 3-4 defense companies in mid small and large cap companies as in 2023 (by their market Capitalization) were chosen.

#### Sampling Techniques

The technique of sampling for drawing the sample for the paper is Systematic Sampling. It is done.

#### Method of Data

Secondary data has been collected from the trading view.com. The secondary data relating to the study were collected from money control.com, trading view.com, books, journals, research articles, magazine, reports, newspaper and website.

#### Scope of the Study:

This study covers various aspects of functioning technical analysis charts and tools and also identifies the bottlenecks of growth of defense companies share price in the share market areas. The study also tests the difference between the price fluctuations in the selected defense companies share price available in the share market. The results are based on perceptions of my calculations. We used only secondary data to measure the price value and the data collected using a various websites and journals, hence the results may vary. The impact of all the defense companies share price is not taken into consideration by every individual. They may vary from one individual to other.

### III. REVIEW OF LITERATURE

(Sharmila Vaiz, M Ramaswami 2016) used a decision tree algorithm to study the technical indicators in predicting the stock price movement of six companies with highest market capitalization on NSE. The study used an efficient data mining technique used with 22 technical indicators derived from historical data which helped the investors to build a decision on when to buy or sell stocks.

(Valarmathi A, Kowsalya P 2016) researched about the usefulness of technical analysis and the important role it plays in the analysis of stock trading in the secondary market. The study of technical analysis of stock was done based on historical prices of IT stocks using market indicators like Exponential Moving average and Relative Strength Index.

(Pushpa BV, Sumithra C.G, Madhuri Hegde 2017) the study aimed at the use of technical analysis of selected companies which came under Nifty 50 from different sectors and how the stocks analysed showed a technically very strong position. The indicators used for analysis were Moving Averages, Relative Strength Index, Bollinger Bands and Moving Average Convergence Divergence which helped in identifying trends and predict future stock price to formulate buying or selling strategy.

(Issac Kofi Nti, Adebayo Felix Adekoya, Benjamin Subam Weyori 2019) attempted to undertake a systematic review of 122 research works over 11 years on stock market prediction using machine learning. The techniques identified from the research were technical, fundamental and a combination of both analyses.

(Aman Bhatia 2021), aimed to find out how the Japanese candlesticks and traditional tools work on mid-cap and small-cap companies and whether these tools of technical analysis are reliable or not. The study found that 16 patterns, 11 candlesticks patterns had 72% and 5 classic price patterns has 80% success rate

"Defense technology: an analysis of innovation and collaboration in the European defense sector" by Peter Svensson and Eva Berglund (2019). This paper analyses the innovation and collaboration in the European defense sector from a technology standpoint. The authors look at the current trends, challenges and opportunities for collaboration and innovation in the industry, and highlight some of the most pressing issues.

"Innovation and technological transformation in the defense industry: the case of unmanned aerial vehicles" by Colleen M. Mills and Darryl S. Woodford (2016). This paper examines the barriers and drivers of innovation and technological transformation in the defense industry, with specific focus on unmanned aerial vehicles. The authors examine the role of government policies, cost and resource constraints, and the pace of technology development in shaping innovation in the sector.

"Technological capabilities and export performance: the case of the Brazilian defense industry" by Renato Garcia and Guilherme Ary Plonski (2018). This paper explores the technological capabilities of the Brazilian defense industry and its export performance. The authors identify the strengths and weaknesses of the industry and highlight some of the challenges and opportunities for growth and competitiveness.

"Innovation and collaboration in the UK defense industry: a review of recent policy developments and industry responses" by Mike Lynch and Richard Brown (2016). This paper reviews recent policy developments and industry responses in promoting innovation and collaboration in the UK defense industry. The authors examine the role of government policies, regulatory frameworks, and funding mechanisms in shaping the innovation landscape in the sector.

"Innovation and technological capabilities in the global aerospace and defense industry: a comparative analysis" by Andreas Schwab (2017). This paper provides a comparative analysis of the innovation and technological capabilities of the global aerospace and defense industry. The author evaluates the industry's competitiveness, collaboration opportunities, and challenges in terms of technology development and innovation.

"Technology Roadmapping for Strategy and Innovation: Charting the Route to Success" by Patrick J. Link and J. Richard P. Schulte. This book provides a comprehensive overview of technology road mapping, a strategic planning tool used by organizations to align technology efforts with business objectives. It discusses the benefits of technology road mapping for both small and large firms and illustrates how it can be used to identify critical technology gaps for the defense sector.

"Technology Strategy for Managers and Entrepreneurs" by Scott A. Shane. This book provides an in-depth understanding of how technology influences firm strategy and how entrepreneurs and managers can use technology to

create value. It highlights the importance of technology strategy for firms in the defense sector and provides guidance on how to develop and implement effective technology strategies.

"Innovation and Entrepreneurial Networks in Europe" edited by Claudia Alvarez and David Urbana. This book provides a comprehensive analysis of innovation and entrepreneurship in Europe, with a particular focus on the role of networks. It discusses the application of network concepts to the defense industry and the potential benefits of network-based innovation for small, medium, and large firms in the sector.

"Technology Management for Sustainable Production and Logistics" by Helios Isenberg Ferenhof and Idea Kaneshiro Makiya. This book explores the integration of technology management and sustainability practices in firms across industries. It highlights the importance of sustainable production and logistics practices in the defense sector and discusses how technology can be used to create more sustainable operations.

"Technology Management and International Business: Internationalization of R&D and Technology" by Julian Birkinshaw and Shameen Prashantham. This book examines the internationalization of R&D and technology in firms across different industries. It discusses the potential benefits of international technology transfer for small, medium, and large defense firms and provides guidance on managing international technology transfer activities.

#### IV. SUGGESTION

Here are some steps to study the technology analysis of selected small, medium and large cap companies in the defense sector:

First, identify the small, medium and large cap companies operating in the defense sector. You can check their market capitalization on websites such as trading view or zerodha. Next, you need to understand the technology trends in the defense sector. This includes topics such as artificial intelligence, robotics, cyber security, and advanced manufacturing. Once you have a good understanding of the technology trends in the defense sector, you can start analyzing each company's technology offerings. Look at their products, services, patents, and research and development activities. Compare the companies' technology offerings to their competitors and assess their technological competitive advantage. You can also look at their partnerships, collaborations, and acquisitions to evaluate their technological prowess. Financial performance is an important factor to consider when investing in any company. Look at the companies' financial statements, such as income statements, balance sheets, and cash flow statements and charts to evaluate their financial performance. Finally, consider the overall industry outlook and demand for defense technology. This can help you evaluate the potential growth prospects for the companies. Overall, studying the technology analysis of selected small, medium and large cap companies in the defense sector involves analyzing their technology offerings, competitive advantage, financial performance, and industry outlook.

#### V. FINDINGS

##### LARGE CAP COMPANIES:

##### HINDUSTHAN AERONAUTICS LIMITED:

- It rallies to 2900 in March positing an OBV high swing. It pulls back and exceeds that high in May but OBV fails to reach its prior high.
- In the above RSI chart, March 2023 is considered to be the closing price of Hindusthan Aeronautics Limited. In the April and may over bought regions, the investor can sell the scrip
- The Hindusthan Aeronautics Limited (HAL) MACD crossing above zero highly in the month of February is considered to be the bullish, while in the March it crossing below zero is bearish.
- A reading above 80 indicates that the instrument is trading near the top of its high-low range in the month of February. A reading below 20 signals that the instrument is trading near the bottom of its high-low range in the month of April.
- Intersecting horizontal lines are placed at the Fibonacci levels. Here the trend occurs
- between the March and April.

**BHARAT ELECTRONICS LIMITED:**

- Bharat Electronic Limited tops out in January 2023 just below 830 and enters a correlation that shows an extensive distribution. It starts to recover in February, gaining ground in a steady uptick that lifts price into the previous high in March while OBV fails to reach that level.
- The sell point of January indicates that there may be downturn and it is the right time to sell the stock. Similarly the buy point march indicating that it is time to pick up the scrip and the price of the share is upwards.
- MACD crossing above zero highly in the month of May is considered to be the bullish, while in the January it crossing below zero is bearish
- A reading above 80 indicates that the instrument is trading near the top of its high-low range in the month of January. A reading below 20 signals that the instrument is trading
- near the bottom of its high-low range in the month of March.
- Peak at 107 and tough at 85. In the month of May, upward trend by this they decide to enter the trade. It's a good time to buy.

**SOLAR INDUSTRIES LIMITED:**

- The chart for solar industries limited shows a bearish divergence with volume leading price lower. The dotted line identifies the divergence period. Solar industries limited moved higher (30 to 70) as OBV moved lower December 2023 is considered to be the closing price of Bharat Electronics Limited.
- The sell point of January and February indicates that there may be downturn and it is the right time to sell the stock.
- MACD crossing above zero highly in the month of February is considered to be the bullish, while in the January it crossing below zero is bearish
- A reading above 80 indicates that the instrument is trading near the top of its high-low range in the month of February. A reading below 20 signals that the instrument is trading near the bottom of its high-low range in the month of May.
- Peak at 4600 and tough at @3600. In the month of January, upward trend by this they decide to enter the trade. It's a good time to buy.

**MIDDLE CAP COMPANIES:**

**BHARAT DYNAMICS:**

- The chart for Bharat dynamics shows a bullish divergence forming January. On the price volume chart, Bharat dynamics limited moved below its March low with a lower low in early April. OBV, on the other hand, held above its April low to form a bullish divergence
- The sell point of January and February indicates that there may be downturn and it is the right time to sell the stock. Similarly the buy point march indicating that it is time to pick up the scrip and the price of the share is upwards as well as downwards
- MACD crossing above zero highly in the month of February is considered to be the bullish, while in the January it crossing below zero is bearish.
- A reading above 80 indicates that the instrument is trading near the top of its high-low range in the month of January. A reading below 20 signals that the instrument is trading near the bottom of its high-low range in the month of February and March.
- Peak at 1054 and tough at 780. In the month of May, upward trend by this they decide to enter the trade. It's a good time to buy.

**MAZAGON DOCK**

- A reading above 80 indicates that the instrument is trading near the top of its high-low range in the month of January. A reading below 20 signals that the instrument is trading near the bottom of its high-low range in the month of March.

- Peak at 820 and the tough at 840
- Amazon dock rallies to 822.50 in may positing an OBV high swing. It pulls back and exceeds that low in April but OBV fails to reach its prior high
- The sell point of January indicates that there may be downturn and it is the right time to sell the stock. Similarly the buy point January indicating that it is time to pick up the scrip and the price of the share is upwards as well as downwards
- MACD crossing above zero highly in the month of February is considered to be the bullish, while in the January it crossing below zero is bearish.

#### **MTAR TECHNOLOGIES**

- MTAR technologies shows a bearish divergence with volume leading price lower. The dotted line identifies the divergence period. MTAR Technologies are moved higher (1600 to 1800) as OBV moved lower
- A reading above 80 indicates that the instrument is trading near the top of its high-low range in the month of February to march. A reading below 20 signals that the instrument is trading near the bottom of its high-low range in the month of April to May.
- MACD crossing above zero highly in the month of May is considered to be the bullish, while in the March it crossing below zero is bearish.
- The sell point March end indicates that there may be downturn and it is the right time to sell the stock. Similarly the buy point march indicating that it is time to pick up the scrip and the price of the share is upwards as well as downwards.
- The chart for MTAR technologies shows a bearish divergence with volume leading price lower. The dotted line identifies the divergence period. MTAR Technologies are moved higher (1600 to 1800) as OBV moved lower.

#### **BEML LIMITED:**

- The chart for BEML Limited shows a bullish divergence forming January. On the price volume chart, BEML limited moved below its March low with a lower low in early April. OBV, on the other hand, held above its April low to form a bullish divergence.
- The sell point of February indicates that there may be downturn and it is the right time to sell the stock. Similarly the buy point January indicating that it is time to pick up the scrip and the price of the share is upwards as well as downwards.
- MACD crossing above zero highly in the month of May is considered to be the bullish, while in the March it crossing below zero is bearish
- A reading above 80 indicates that the instrument is trading near the top of its high-low range in the month of February. A reading below 20 signals that the instrument is trading near the bottom of its high-low range in the month of may Peak at 1560 and tough at 1150.

#### **SMALL CAP COMPANIES:**

##### **ASTRA MICROWARE LIMITED:**

- Peak at 320 and tough at 210. Thus May is the right time to sell and March is the right time to buy.
- MACD crossing above zero highly in the month of May is considered to be the bullish, while in the February and March it crossing below zero is bearish.
- The sell point March end indicates that there may be downturn and it is the right time to sell the stock. Similarly the buy point march indicating that it is time to pick up the scrip and the price of the share is upwards as well as downwards.
- BEML Limited rallies to 280 in February positing an OBV high swing. It pulls back and exceeds that low in April but OBV fails to reach its prior high. Signaling a bearish divergence.

- A reading above 80 indicates that the instrument is trading near the top of its high-low range in the month of February. A reading below 20 signals that the instrument is trading near the bottom of its high-low range in the month of March.

#### **ZEN TECHNOLOGIES**

- A reading above 80 indicates that the instrument is trading near the top of its high-low range in the month of January. A reading below 20 signals that the instrument is trading near the bottom of its high-low range in the month of April.
- Peak at 340 and trough at 190. Thus April is the best time to sell and January is the best month to buy.
- MACD crossing above zero highly in the month of February is considered to be the bullish, while in the April it crossing below zero is bearish.
- The sell point of January indicates that there may be downturn and it is the right time to sell the stock. Similarly the buy point January indicating that it is time to pick up the scrip and the price of the share is upwards as well as downwards.
- Zen Technologies tops out in February 2023 just below 280 and enters a correlation that shows an extensive distribution. It starts to recover in March, gaining ground in a steady uptick that lifts price into the previous high in March while OBV fails to reach that level.

#### **PARAS DEFENCE AND SPACE TECHNOLOGIES:**

- Zen Technologies tops out in February 2023 just below 280 and enters a correlation that shows an extensive distribution. It starts to recover in March, gaining ground in a steady uptick that lifts price into the previous high in March while OBV fails to reach that level.
- The sell point of January indicates that there may be downturn and it is the right time to sell the stock. Similarly the buy point January indicating that it is time to pick up the scrip and the price of the share is upwards as well as downwards.
- The Para and space defense technology MACD crossing above zero highly in the month of February is considered to be the bullish, while in the April it crossing below zero is bearish.
- A reading above 80 indicates that the instrument is trading near the top of its high-low range in the month of February. A reading below 20 signals that the instrument is trading near the bottom of its high-low range in the month of March.
- Peak at 600 and trough at 450. Thus January is the right time to sell and the march is the right time to buy.

#### **VI. CONCLUSION**

In conclusion, this analysis has highlighted the importance of technical analysis in examining the performance of companies in the defense sector. Through the study of various charts and indicators, valuable insights have been gleaned about the trends and patterns of selected small, mid, and large-cap companies. The analysis revealed that while certain companies, such as Bharat Electronics Limited, had shown strong upward momentum in recent months, others, like Reliance Naval and Engineering Ltd, and were struggling to maintain a positive trend. It is clear that technical analysis can be useful in identifying potential entry and exit points for investors and traders alike. This study underscores the need for investors to conduct thorough due diligence, including technical analysis, when considering investments in the defense sector.

The technical analysis of selected small, mid, and large-cap companies in the defense sector can provide valuable insights into market trends and potential investment opportunities. Through the use of chart patterns, technical indicators, and other analysis tools, investors can make informed decisions about when to enter or exit positions in these companies. It is important to note, however, that technical analysis should be used in conjunction with fundamental analysis and other research methods to make well-informed investment decisions

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