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A Study on Stock Market Volatility of Selected Multinational Companies

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ABSTRACT

Investors interested in the stock market will likely examine stock price movements since the market is constantly fluctuating. There are several methods for analyzing percentage price changes it might be a necessary procedure or a technical procedure both approaches have the same goal to buy at a lower price and sell at a higher price to maximize returns on investment the study assesses the performance of multinational companies stocks to determine the required rate of return and risk of a specific stock based on market risk elements and other economic factors.

Keywords: Stock Exchange, Volatility of share prices, Relative Strength Index, Rate-of-Change, Money Flow Index, William % R, Commodity Channel Index

1. OBJECTIVES OF THE STUDY

- To analyze the risk and return of selected Multinational Companies.
- To examine the Volatility of share prices of Multinational Companies.
- To analyze over-bought and over-sold.

2. INTRODUCTION

The stock market, also known as an equity marketplace, is a location where stocks are issued and sold through exchanges or over-the-counter markets. It is one of the most crucial components of a market economy because it gives companies access to capital and gives investors a stake in a company that they can profit from depending on how well the firm does in the future. Equity markets serve as a focal point for stock buyers and sellers. The equity market is one of the most crucial sectors of the economy, accounting for a significant portion of GDP. The equity market is one of the most crucial sectors of the economy, contributing significantly to a country's financial development. Before deciding whether or not to buy or sell inventory in the market, investors studied the behavior.

3. REVIEW OF LITERATURE:

Debasish Maitra and Saumya Ranjan Dash (2017)[1], Conducted a study on "Sentiment and stock market volatility revisited: A time–frequency domain approach" to examine the relationship between investor sentiment and stock return volatility in the context of the Indian stock market. The empirical analysis for examining the sentiment and volatility relationship focuses on the wavelet approach to carry out the time-frequency domain analysis. The results reveal that there is a weak conditional correlation between sentiment and volatility.

Premachandran (2016)[2], conducted a study on the "Volatility and Return of Indian Banking sector index" and also analyzed the risk and return of 12 banks listed in Bank Nifty. The study covers a period of one year starting from the first of April 2015 to the 31st of March 2016. Daily returns, Beta, and standard deviation were the tools used for analysis to measure the volatility in stock prices. The findings of the study revealed that the beta values of all the selected sample banks were greater than one, except for HDFC bank which infers that the bank stocks are more highly volatile than the market.

Dr. P Vikkreaman and P Varadharajan (2009)[6] analyzed the equity of selected companies in the automobile industry from 2004 to 2007. They use Beta and Alpha techniques for analyzing the risk and return of automobile companies. The calculation of the return indicator and systematic risk provide a clear understanding of the investment decisions of these companies.

Sameer Yadav (2017)[7], conducted" A Study on Indian Stock market" Volatility is a statistical measure of the dispersion of returns for a given security or Market Index. Commonly, the higher the volatility greater the risk associated with the security. Volatility estimation is important for several reasons associated with different people in the market. Developed markets continue to provide over a long period with higher returns constituting low volatility. The Indian market has started becoming more informational and more efficient compared to developed countries. The study would facilitate the reader to understand the past, current and future aspects of the Indian Stock Market.

4. RESEARCH METHODOLOGY

 Source of Data

The study is based on secondary data collected from

- Bombay Stock Exchange (BSE),
- NSE - National Stock Exchange of India
- Moneycontrol.com and
- The firm's internal records and publications.
- Yahoo! Finance
- Investing.com

TOOLS FOR ANALYSIS:

The tools and techniques used in the analysis are

- Relative Strength Index (RSI)
- Rate-of-Change (ROC)
- Money Flow Index (MFI)
- William % R
- Commodity Channel Index (CCI)

5. CALCULATION

5.1 RELATIVE STRENGTH INDEX (RSI)

The relative strength index (RSI) is a momentum indicator that measures the magnitude of recent price changes to determine whether a stock or other asset is overbought or oversold. The RSI is represented as an oscillator (a line graph that moves between two extremes) with a range of 0 to 100. Values of 70 or higher on the RSI indicate that a security is becoming overbought or overvalued and may be primed for a trend reversal or corrective price pullback. An RSI reading of 30 or less indicates that the market is oversold or undervalued.

Formula for RSI

$RSI = 100 - 100 / 1 + avg\ gain/avg\ los$s
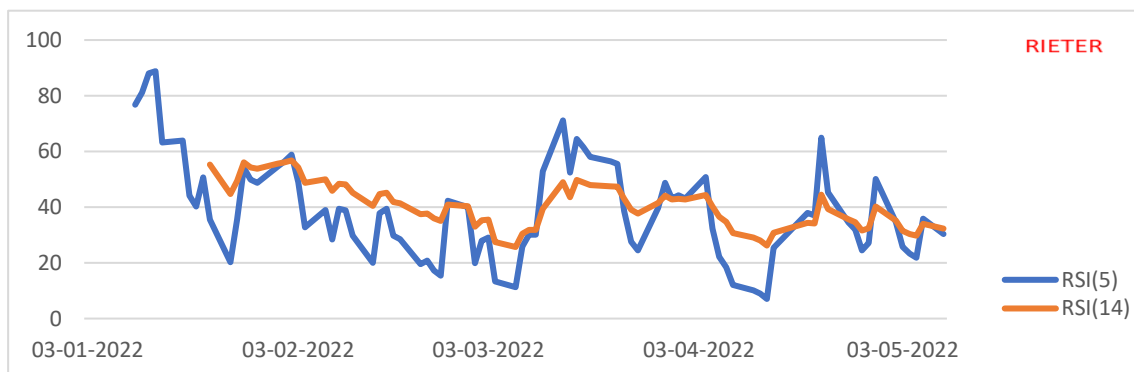
5.1.1 ANALYSIS AND INTERPRETATION

Figure 1: RSI Analysis of RIETER

- RIETER - The RSI 5 has crossed below the RSI 14 which indicates the oversold level during the month of May. Therefore, a buy signal is generated.
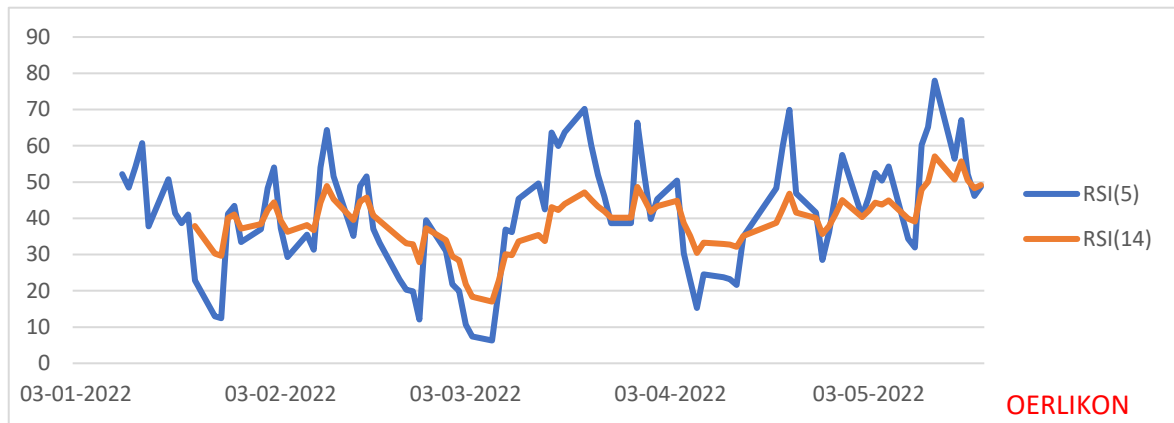

Figure 2: RSI Analysis of OERLIKON

- OERLIKON - The RSI 5 has crossed the RSI 14 which indicates the overbought during the month of May. Therefore, a sell signal is generated.
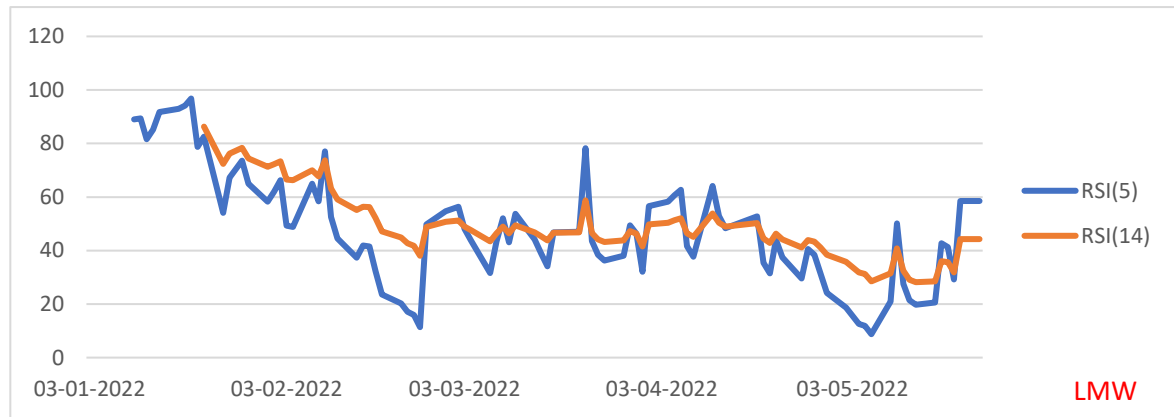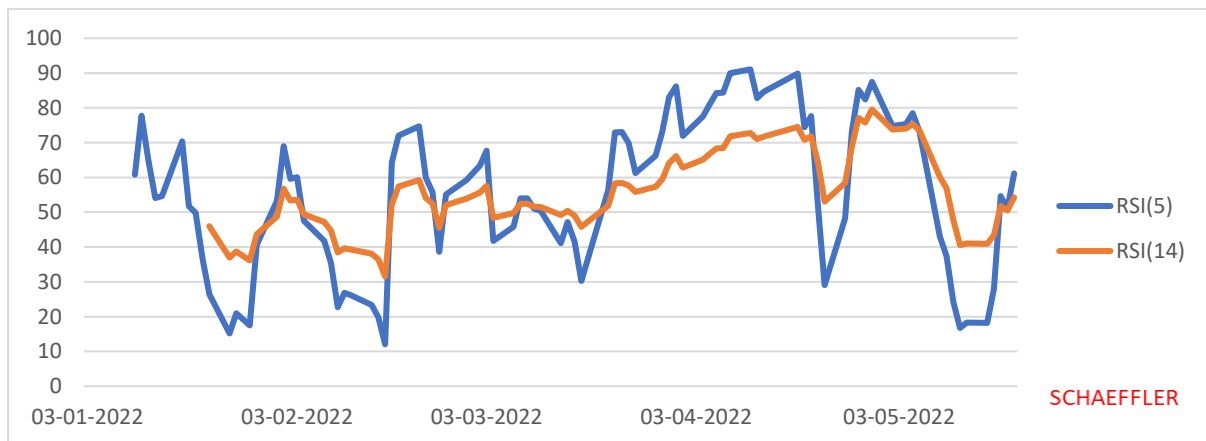

Figure 3: RSI Analysis of LMW

- LMW- The RSI 5 has crossed the RSI 14 which indicates the oversold during the month of May. Therefore, a buy signal is generated.

Figure 4: RSI Analysis of SCHAEFFLER

- SCHAEFFLER - The RSI 5 has crossed below RSI 14, indicating the oversold during May. Therefore, a buy signal is generated.
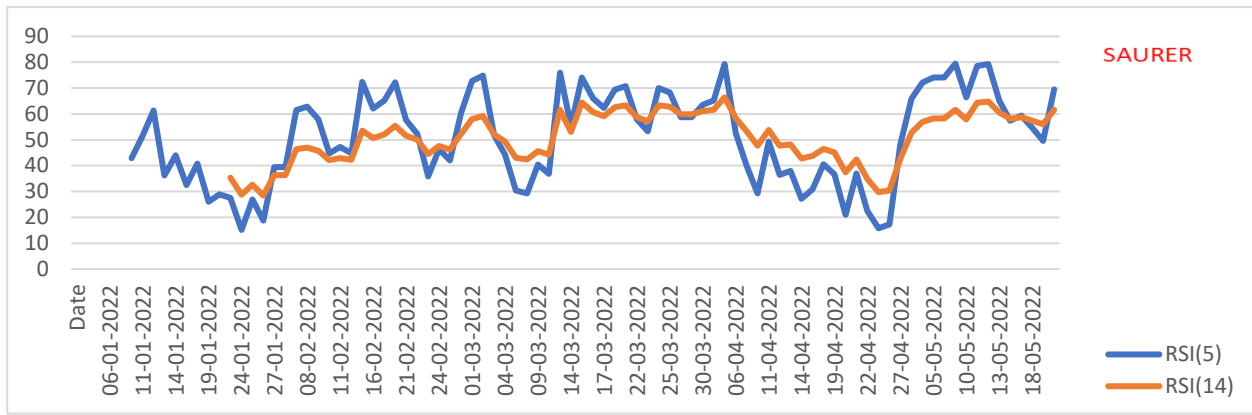
Figure 5: RSI Analysis of SAURER

- SAURER - The RSI 5 has crossed below RSI 14, indicating the oversold during May. Therefore, a buy signal is generated.

5.2 MONEY FLOW INDEX

The Money Flow Index (MFI) is a momentum indicator that tracks the flow of money into and out of a security over a given period. It is similar to the Relative Strength Index (RSI), but it also takes volume into account, whereas the RSI only takes price into account. The MFI is calculated by adding positive and negative Money Flow values (see Money Flow) and then dividing the total by the Money Ratio. The Money Ratio is then normalized to become an MFI oscillator.

Formula for MFI

Money Flow Index=100−100/1+Money Flow Ratio

5.2.1 ANALYSIS AND INTERPRETATION
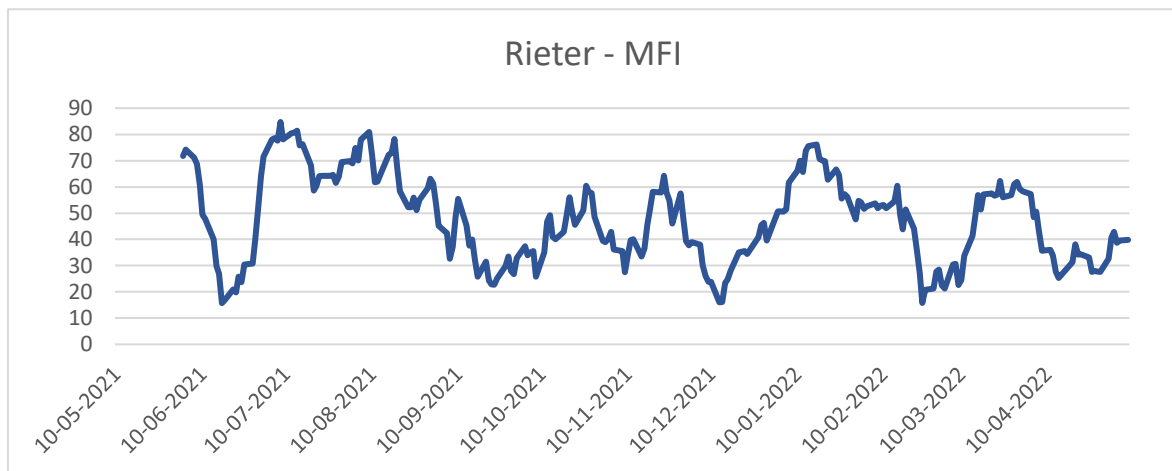
Figure 6: MFI Analysis of RIETER

- RIETER - A bullish scan indicates that the MFI has crossed 20 from below meaning the MFI has exited the oversold region and it shows a buy position of Rieter shares.
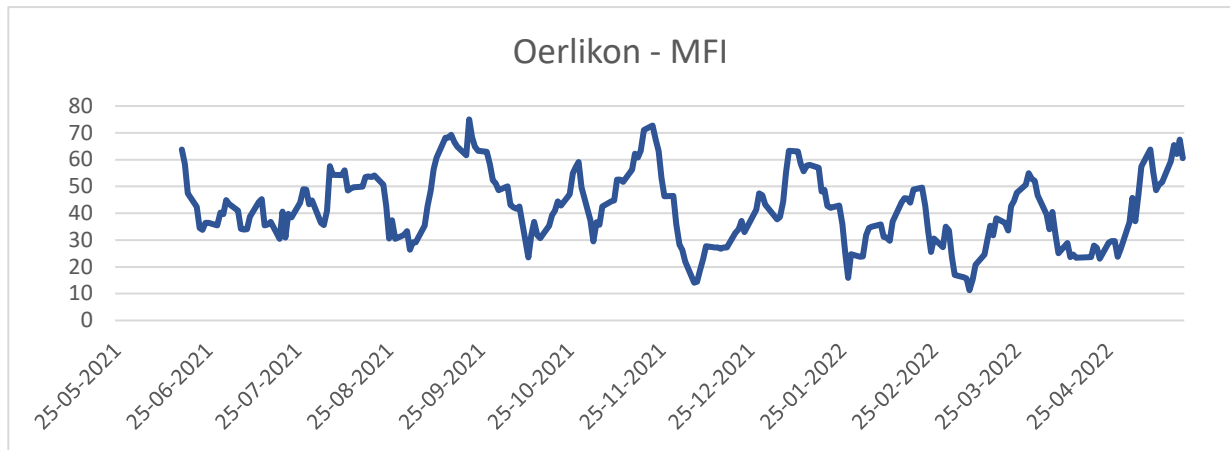
Figure 7 : MFI Analysis of OERLIKON

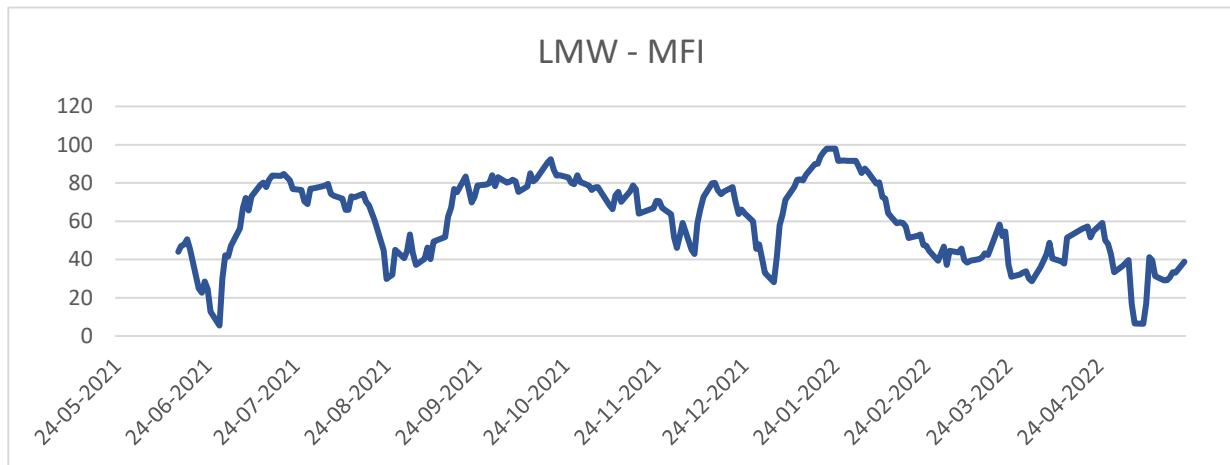- OERLIKON – A Netural scan which indicates MFI is between 20-80.

Figure 8: MFI Analysis of LMW

- LMW- A bullish scan that indicates that the MFI has crossed 20 during May Month, and it is a buy position.
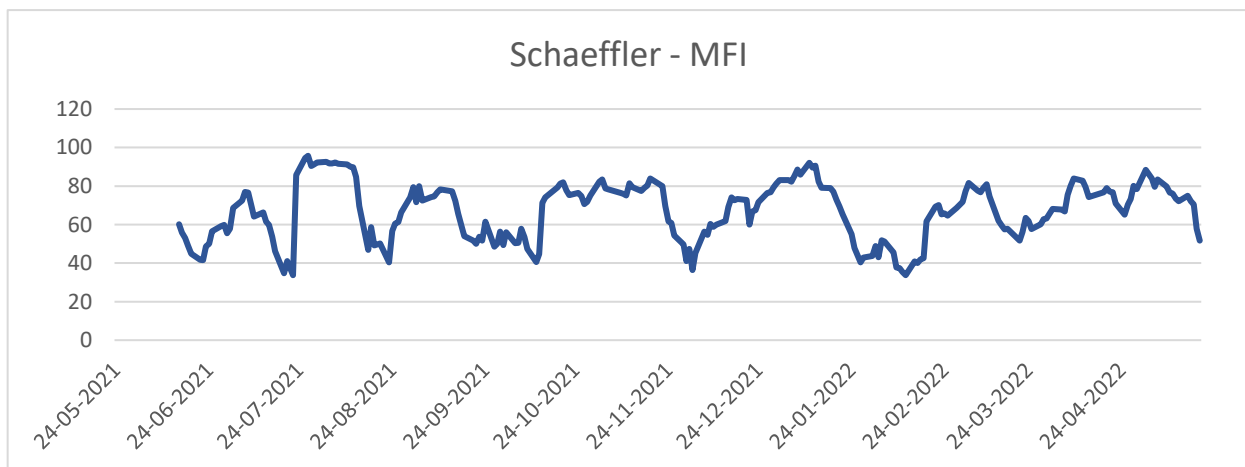

Figure 9: MFI Analysis of SCHAEFFLER

- SCHAEFFLER –   A bearish scan indicates the MFI has crossed 80 from above during May month, with the 88.34 overbought regions from above indicating a sell position.
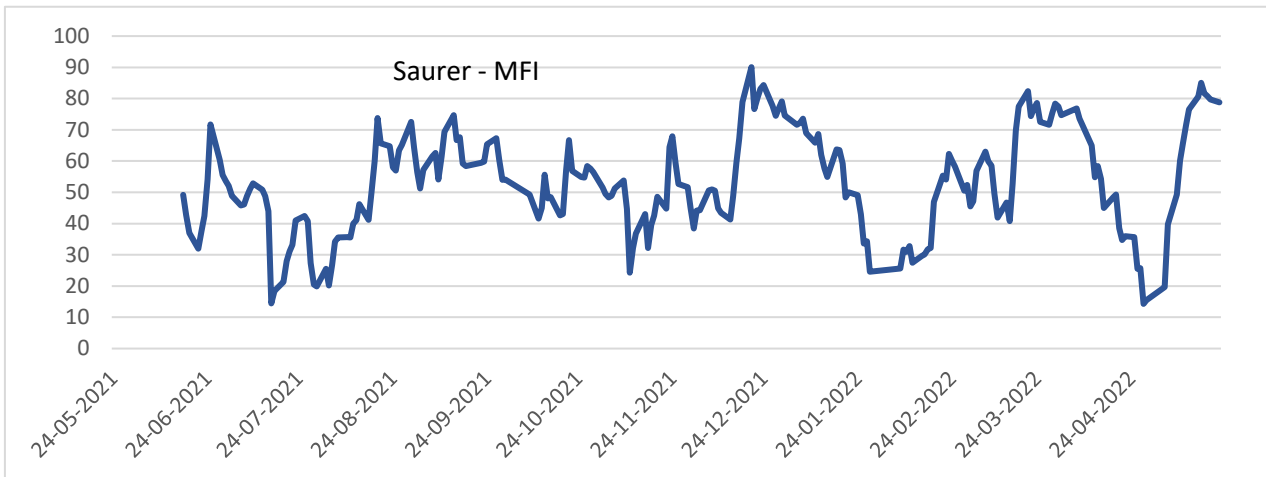
Figure 10: MFI Analysis of SAURER

- SAURER - A bearish scan that indicates the MFI has crossed 80 from above during May month, with the 84.93 overbought regions from above indicating a sell position.

5.3 WILLIAM %R :

Williams%R is the inverse of the Fast Stochastic Oscillator and is a momentum indicator. Overbought readings range from 0 to -20. Oversold readings range from -80 to -100.

Williams%R reflects the level of the close relative to the highest high for the period under consideration. This is a bound oscillator that oscillates between 0 and -100. As a result, the Fast Stochastic Oscillator and Williams%R produce identical lines, with the only difference being the scaling. By multiplying the raw value by -100, Williams%R corrects for inversion.

Formula for WILLIAM%R

Williams $\%R$=Highest High - Close / Highest High - Lowest Low

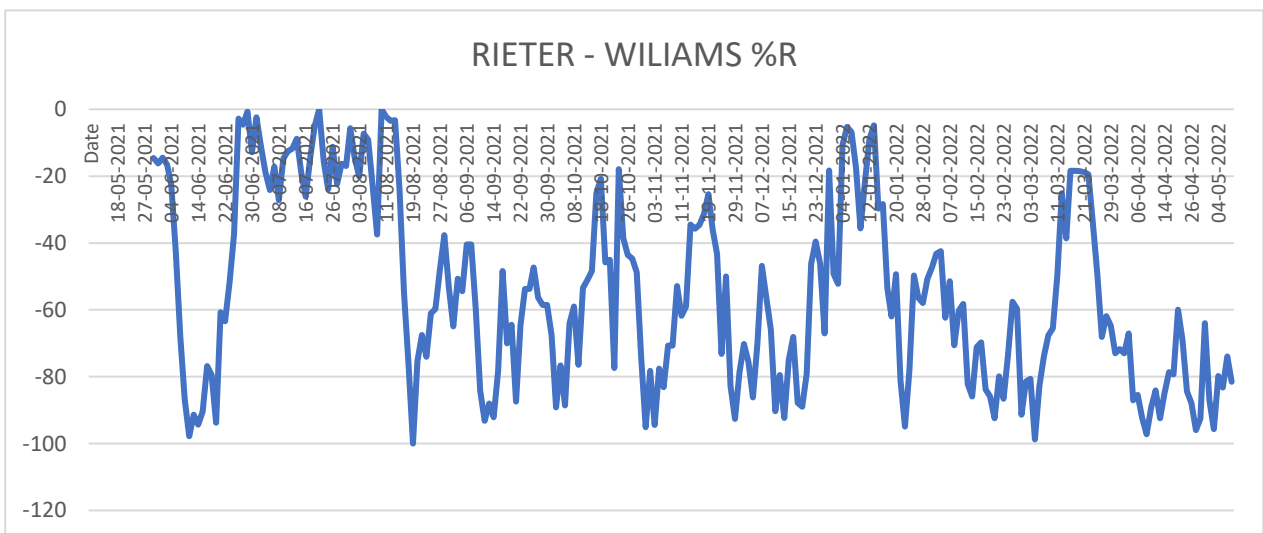### 5.3.1 ANALYSIS AND INTERPRETATION

Figure 11: Williams%R Analysis of RIETER

- RIETER - The indicator is between -80 and -100 the price is oversold in the month of May and oversold means the price is at the lower end of its recent range.
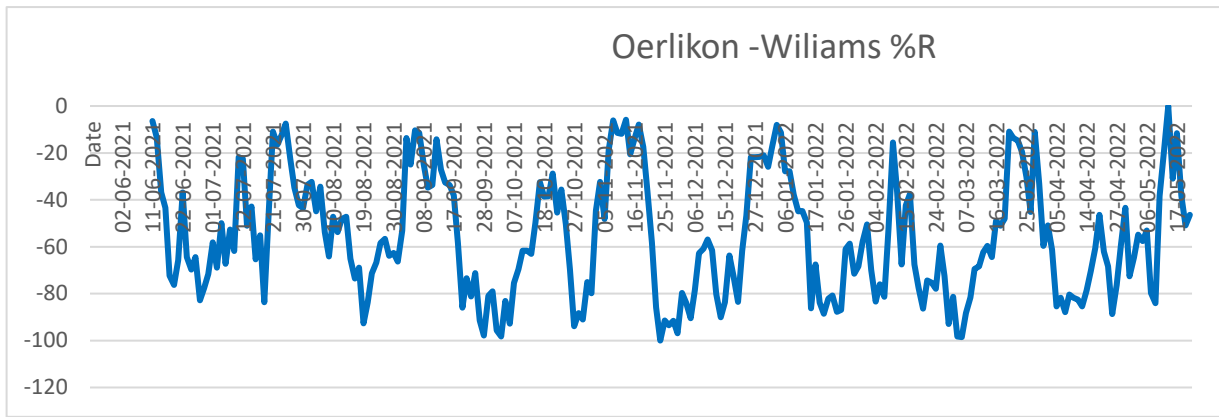
Figure 12: Williams%R Analysis of OERLIKON

- OERLIKON – The indicator is between 0 and -20 the price is overbought in the month of May and overbought means the price is near the highs of its recent range.
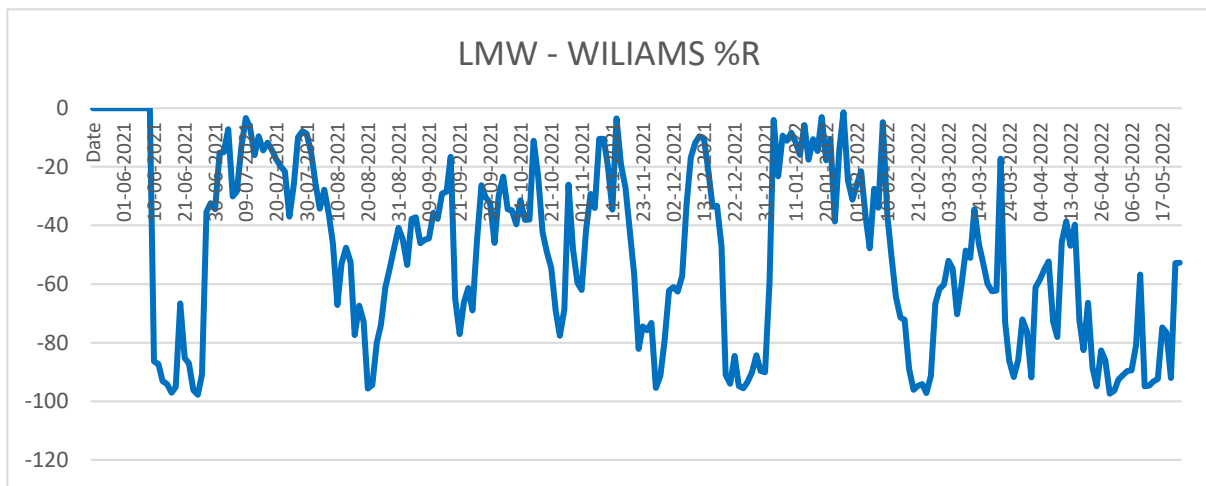

Figure 13: Williams%R Analysis of LMW

- LMW- The Indicator is above -50 signals that are a Bullish trend in the trading.
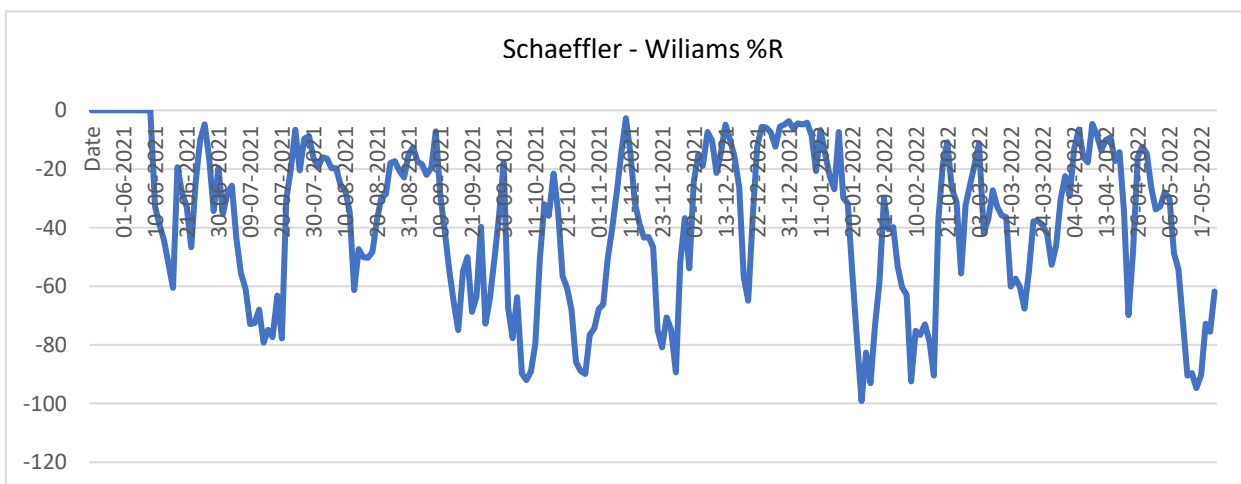

Figure 14: Williams%R Analysis of SCHAEFFLER

- SCHAEFFLER – The indicator is between -80 and -100 the price is oversold in the month of May and oversold means the price is at the lower end of its recent range.
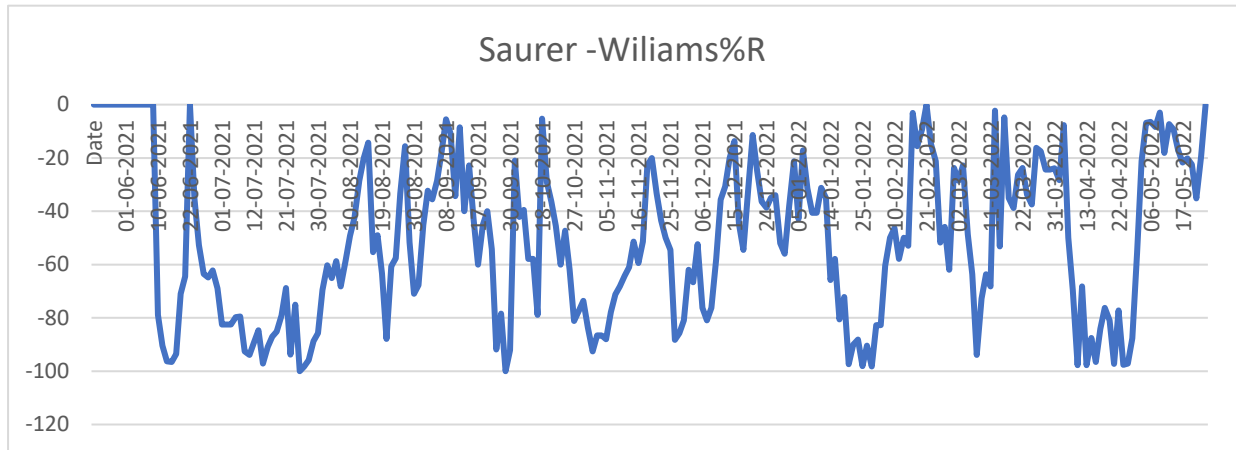
Figure 15: Williams%R Analysis of SAURER

- SAURER - The indicator is between 0 and -20 the price is overbought in the month of May and overbought means the price is near the highs of its recent range.

5.4 RATE OF CHANGE (ROC)

The Rate-of-Change (ROC) indicator, which is also referred to as simply Momentum, is a pure momentum oscillator that measures the percent change in price from one period to the next. The ROC calculation compares the current price with the price "n" periods ago. The plot forms an oscillator that fluctuates above and below the zero line as the Rate-of-Change moves from positive to negative. As a momentum oscillator, ROC signals include centreline crossovers, divergences, and overbought-oversold readings. These crossovers can be used to identify the overall trend. Identifying overbought or oversold extremes comes naturally to the Rate-of-Change oscillator.

Formula for ROC

ROC = [(Today's Closing Price – Closing Price n periods ago) / Closing Price n periods ago] x 100

In general, prices are rising as long as the Rate-of-Change remains positive. Conversely, prices are falling when the Rate-of-Change is negative.

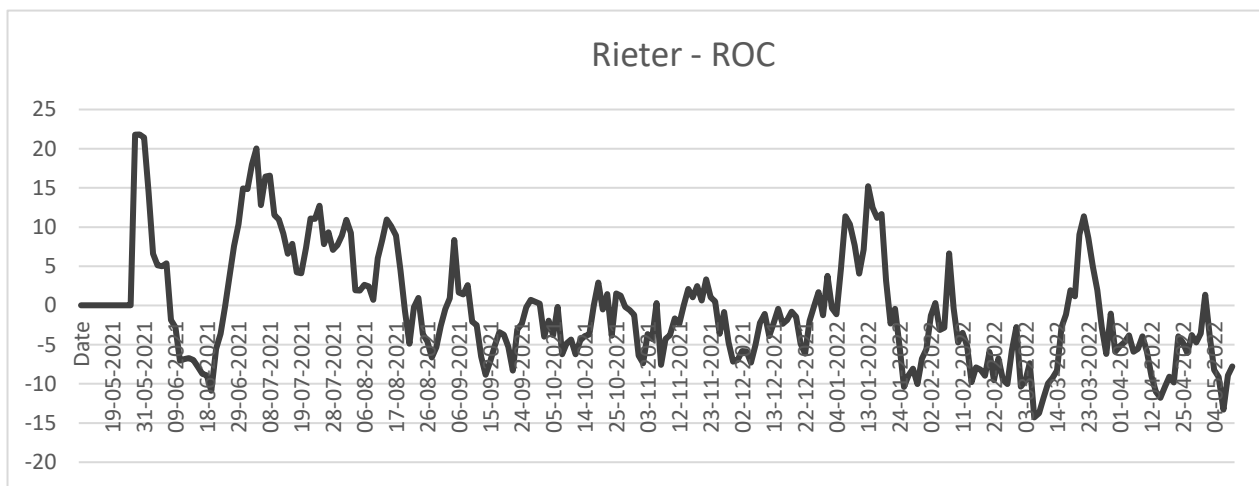### 5.4.1 ANALYSIS AND INTERPRETATION

Figure 16: ROC Analysis of RIETER

- RIETER - The ROC of Rieter remains negative which indicates the prices are falling and it is a downtrend.
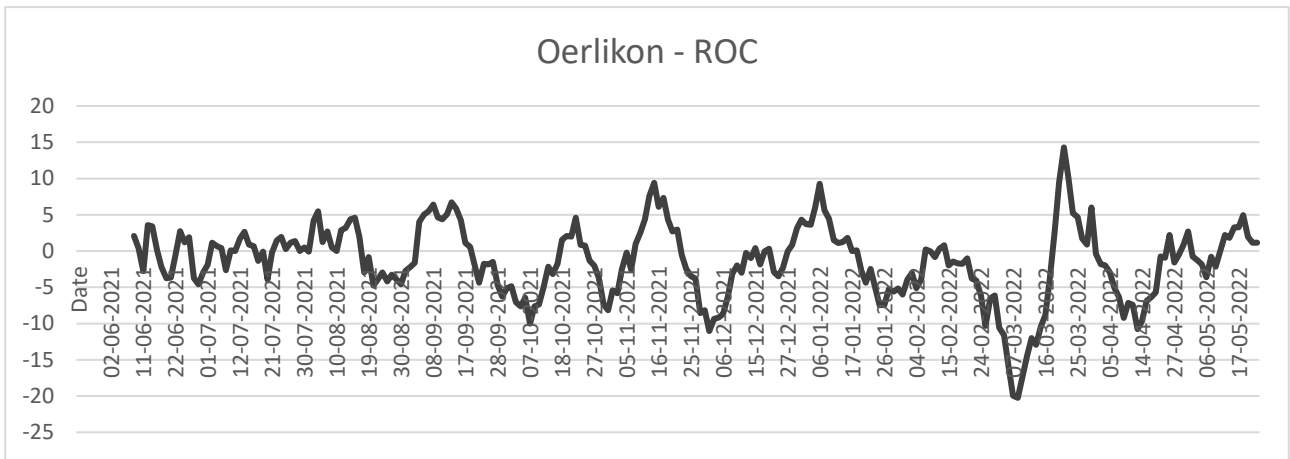
Figure 17: ROC Analysis of OERLIKON

- OERLIKON – ROC of Oerlikon is above 0 during April and May, indicating that prices are increasing, and the trend is upward.
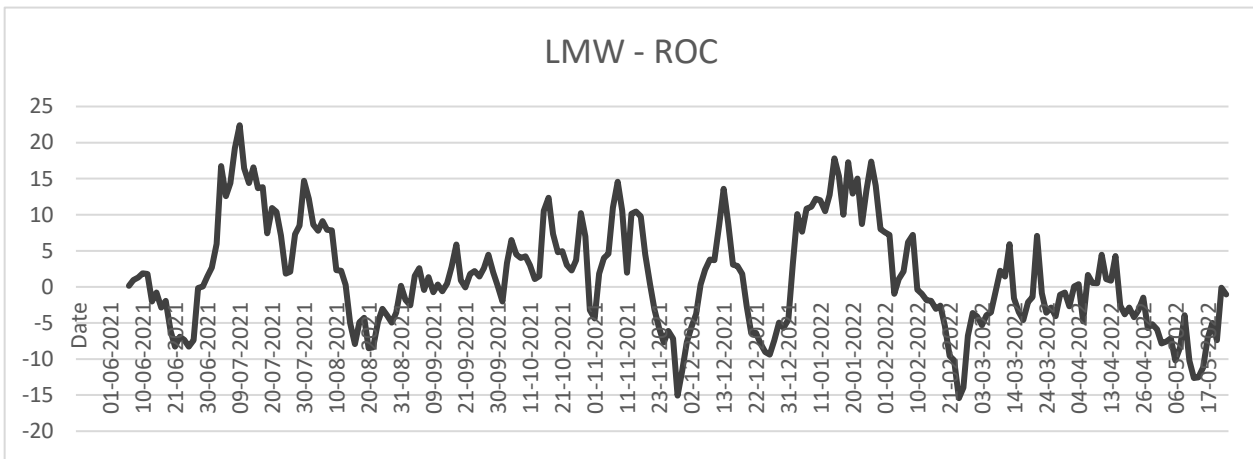

Figure 18: ROC Analysis of LMW

- LMW- The ROC of LMW remains negative below 0 during April and May which indicate the prices are falling and it is a downtrend.
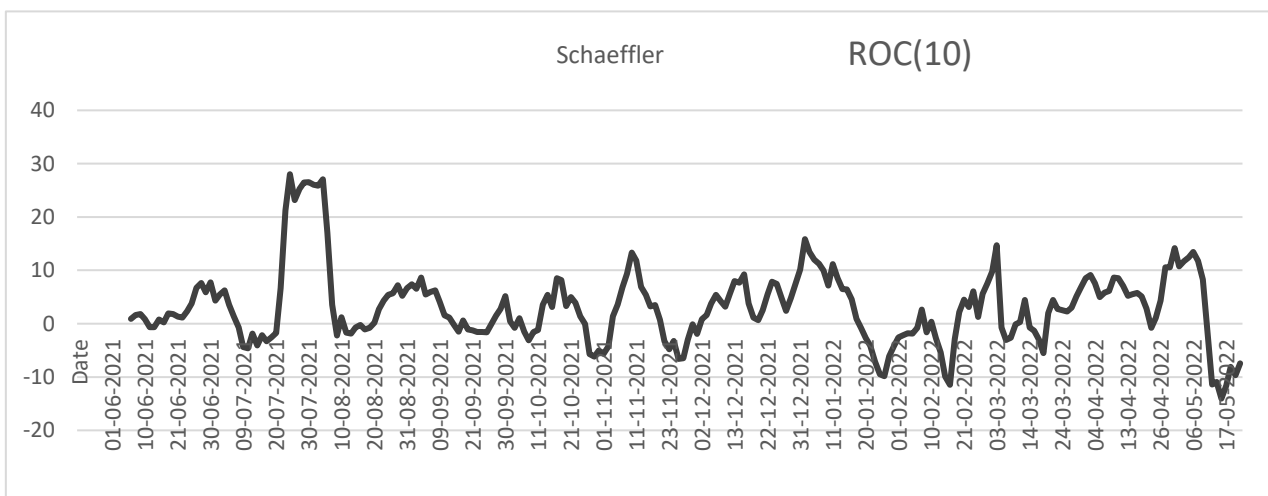

Figure 19: ROC Analysis of SCHAEFFLER

- SCHAEFFLER – ROC of Saurer is above 0 during May and falls gradually, indicating that prices are increasing, and the trend is upward.
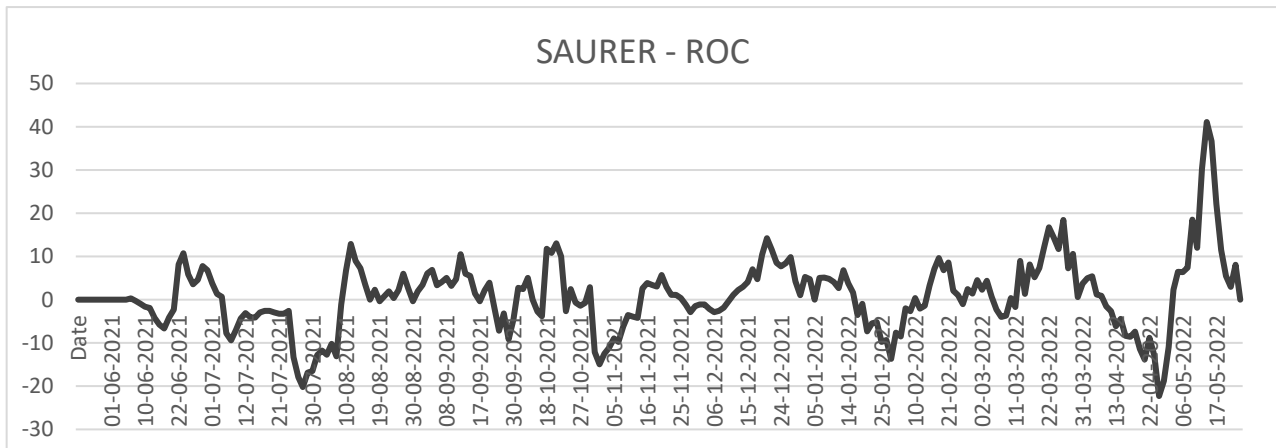
Figure 20: ROC Analysis of SAURER

- SAURER - ROC of Saurer is above 0 during May and falls gradually, indicating that prices are increasing, and the trend is upward.

5.5 COMMODITY CHANNEL INDEX

The Commodity Channel Index (CCI) measures the current price level relative to an average price level over a given period. CCI is relatively high when prices are far above their average. CCI is relatively low when prices are far below their average. Using this method, CCI can be used to identify overbought and oversold levels.

The Commodity Channel Index (CCI) is calculated by determining the difference between the mean price of a security and the average of the means over the period chosen. This difference is compared to the average difference over the period. Comparing the differences in the averages allows for the commodity's volatility. The result is multiplied by a constant to ensure that most values fall within the standard range of +/- 100.

Formula For CCI:

CCI = (Typical Price - SMA of TP) / (.015 x Mean Deviation)

Typical Price (TP) = (High + Low + Close)/3

A basic CCI strategy is used to track the CCI for movements above +100, which generates buy signals, and movements below -100, which generates sell or short trade signals.
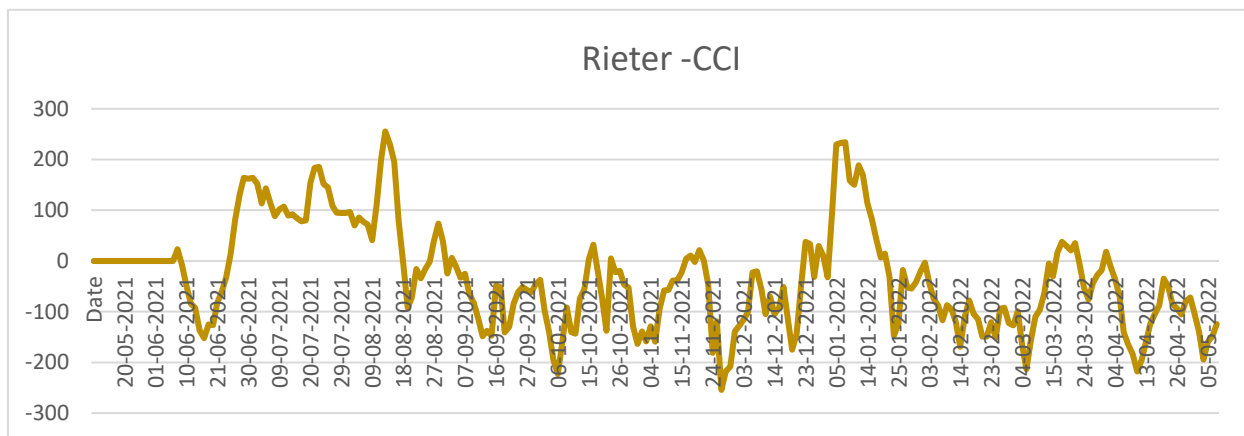
5.5.1 ANALYSIS AND INTERPRETATION

Figure 21: CCI Analysis of RIETER

- RIETER - During the month of May, the CCI for Rieter movement is below -100, which generates sell or short trade signals.
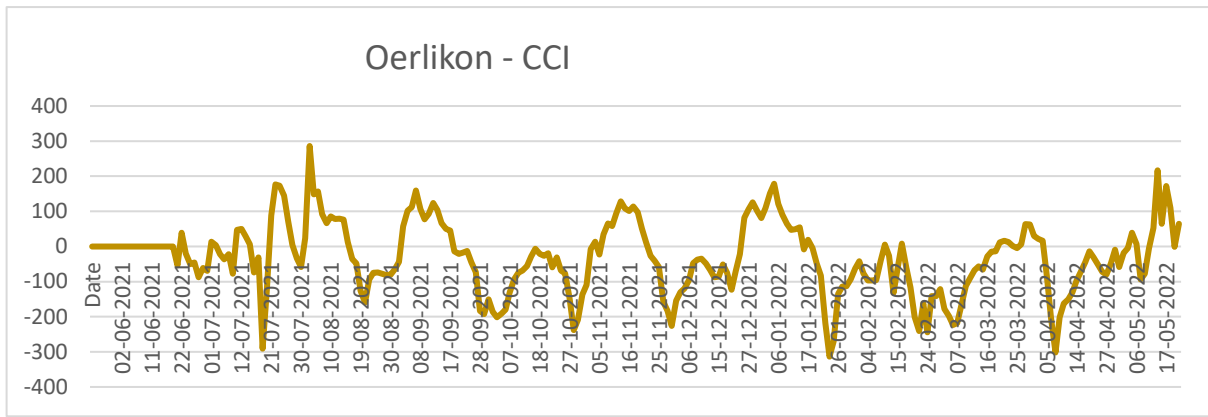
Figure 22 : CCI Analysis of OERLIKON

- OERLIKON – During the month of May, the CCI for Oerlikon movement is above +100, which generates a buy signal for traders.
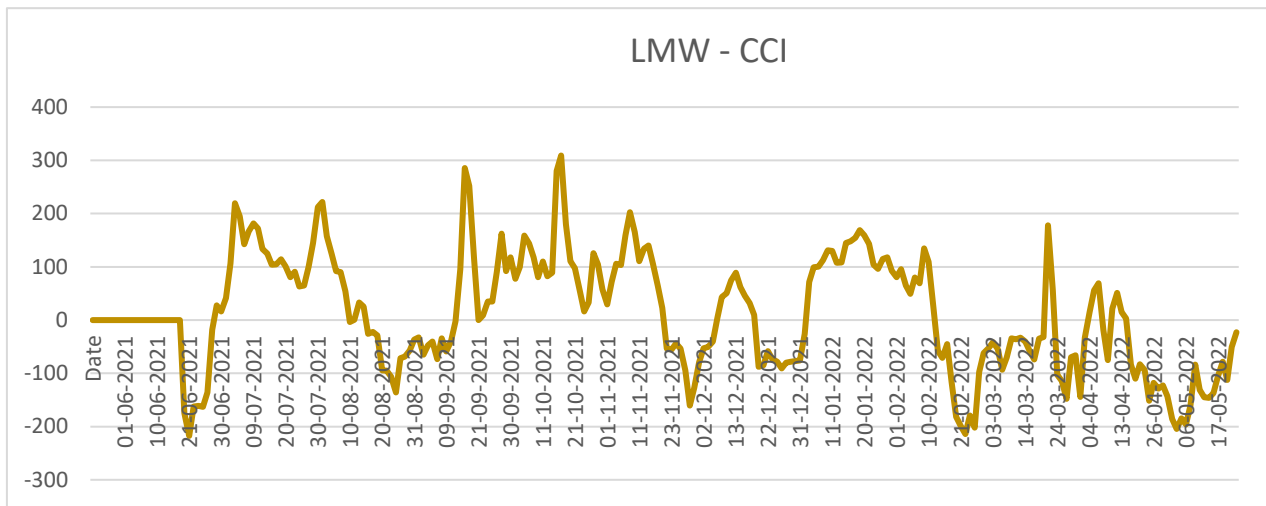

Figure 23: CCI Analysis of LMW

- LMW- During the month of May, the CCI for LMW movement is below -100, which generates sell or short trade signals.
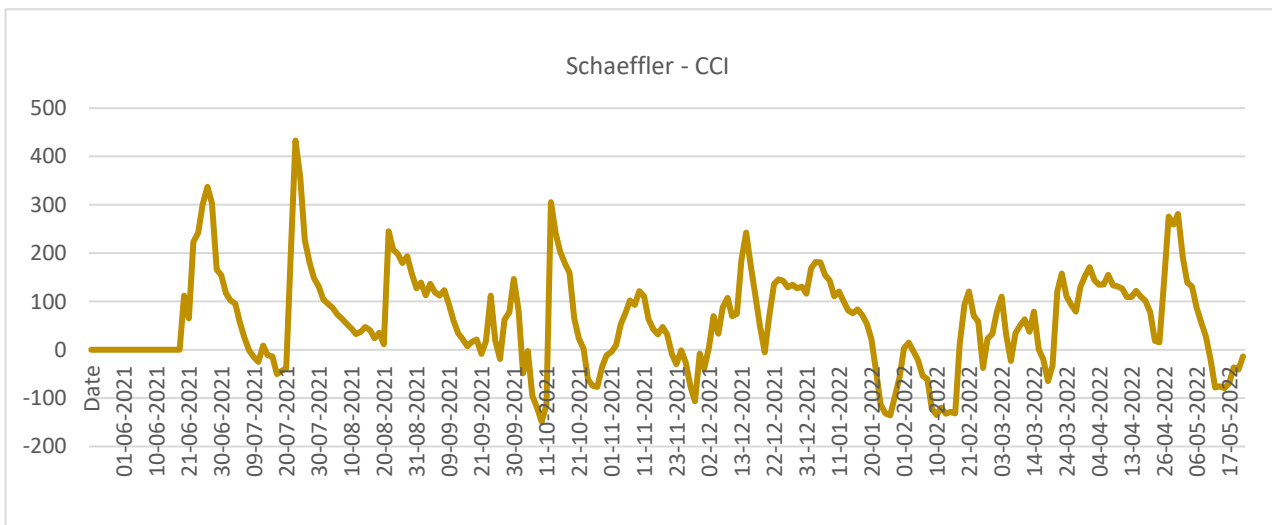

Figure 24: CCI Analysis of SCHAEFFLER

- SCHAEFFLER – During the month of April, the CCI for Schaeffler movement is above +100, which generates a buy signal for traders.
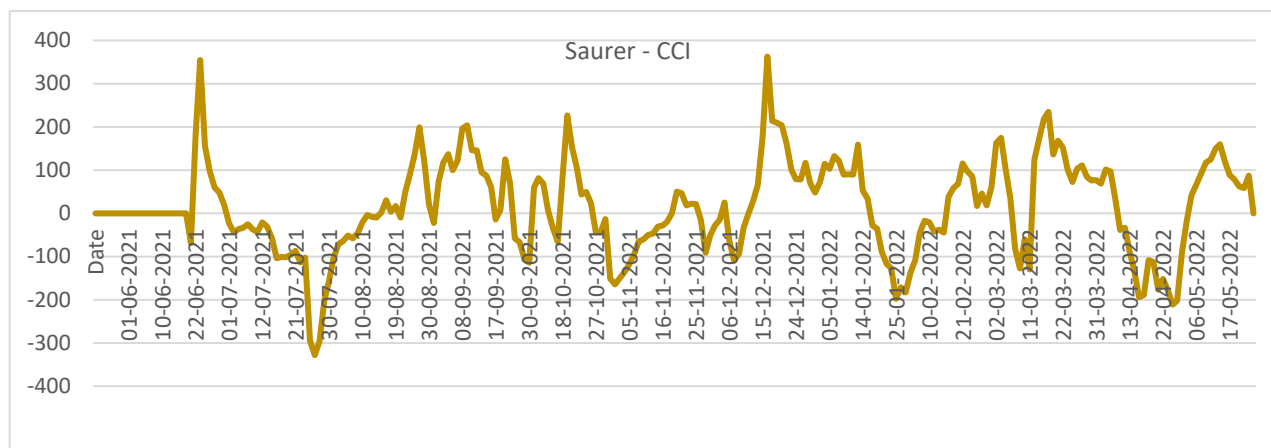
Figure 25: CCI Analysis of SAURER

- SAURER - During the month of April, the CCI for Saurer movement is above +100, which generates a buy signal for traders.

6. FINDINGS

- When compared to other companies RSI of OERLIKON shows a sell signal during the month of May.

- Money Flow Index of LMW shows a buy position which has crossed 20, and it is a bullish scan and neutral position on OERLIKON.

- Whereas the Saurer and Schaeffler have crossed 80 and it indicates an overbought region.

- In the WILLIAMS%R indicator, OERLIKON and SAURER show an overbought position.

- Whereas the other three companies show an oversold position between -80 to -100 under the Williams%R indicator.

- Under ROC, Rieter, and LMW show a downtrend which indicates a fall in price.

- During the month of May Saurer and Schaeffler were in an uptrend, and it started to gradually fall in the end under ROC.

- Oerlikon, Schaeffler, and Saurer show a buy signal for traders during the month of May.

- Under Commodity Channel Index both the companies Rieter and LMW show a sell or short trade signal.

- From the overall analysis Saurer shows a sell position when compared to the other three companies and Rieter shows a Neutral position.

7. REFERENCES:

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