

## **Project Overview**

This project is a technical analysis of the S&P 500 and Middlesex Water Company (ticker: MSEX), a company that provides water related services. The analysis is conducted using charts, trends analysis and indicators, and gives recommendations regarding the stock.

## Views on S&P 500

The near future outlook of the S&P 500 is optimistic. The five-year weekly returns (*figure 1*) show the market has been generally on an uptrend. The faster (50-day) moving average (MA) is above the slower (200-day) moving average (MA), which signals the market in the past five years is overall bullish. Although the faster MA line was trending down throughout 2022 and the recent price uptrend has not been confidently confirmed by the volume, there was an inflection point of the slower MA in April 2023 and the most recent data shows that the market is likely to trend upward.



Figure 1: S&P 500 five-year weekly return with 50-day and 200-day MAs

The one-year daily returns (*figure 2*) show the faster MA was under the slower MA but had a crossover around February this year, which potentially marked an end of a market downtrend. The recent price movements have been fluctuating in an ascending channel pattern, which is a bullish signal. Since November 2022, the market has been on an uptrend, and it made some higher lows (late Dec 2022), higher highs (Jan 2023), higher lows (Mar 2023).

On the other hand, the resistance level around 4190 is strong and we have not yet seen a breakout. The weak momentum in the market is echoed in the 14-period RSI, no sign of overbought or oversold, which is reflected in the flat volume movements. Nevertheless, the recent price trend says a bullish market is anticipated.



Figure 2: S&P 500 one-year daily return with 50-day and 200-day MAs

## Analysis of MSEX

Contrary to the recent market trend, recent prices of MSEX have been on a downtrend in the five-year log week returns (*figure 3*) but is likely to trend up. The stock has shown a relatively strong support level around \$74. To predict if the stock is going to rally, we can look at the On Balance Value (OBV). Both the price and OBV were in agreement and declined throughout 2022 until the beginning of 2023. While the price further fell, the OBV is on an incline. This is a sign of positive divergence, which indicates that MSEX'S downtrend may reverse.



Figure 3: MSEX five-year log weekly return w. OBV

In the five-year arithmetic weekly returns (*figure 4*), the longest Volume by Price (VBP) bar indicates that most of the trades happen in the price range of \$85 to \$92, which indicates the support and resistance levels, respectively. The volume movements have been flat since the last spike around late January and early February when the price

closed above \$85. Investors are probably waiting for prices to bounce back above the support level before making an enter decision.



Figure 4: MSEX five-year Arithmetic weekly return w. VBP

In the one-year daily returns (*figure 5*), both the 9-priod and 14 period RSIs indicate signs of oversold during this March and the recent past weeks around May. Depending on the trading strategies, 9-period RSI may be preferred by short-term traders as opposed to 14-period RSI for longer term traders.

In the 9-period RSI, there are visible oversold signs when the price reached around \$73 and \$68, while the signs for oversold when the price climbed to \$90 and \$82 were comparatively weak. This means the current selling momentum will likely have a pullback. The 14-period RSI price movements are smoother compared to the 9-period RSI and the 14-period RSI oversold signals are more visible than overbought signals. The analysis from both RSIs is in agreement with the above analysis that indicated by OBV and VBP – the stock price has a good chance to rally.



Figure 5: MSEX one-year daily return w. 9 and 14 periods RSI

The stock has been experiencing a period of high volatility indicated by the faster (20-day) MA and slower (50-day) MA in the one-year daily returns (*figure 6*). The faster MA keeps fluctuating above and below the slower MA, it shows a sign of no clear short-term trend. However, this fluctuation is not necessarily a sell indication, and the stock may represent a lucrative investment opportunity with relatively high risk to reward ratio.

As of May 5, 2023, the stock was trading at \$73.89, the RSIs show that the stock price is likely to bounce up and the VBP indicates \$85 is a good support level. Let us say an investor is willing to take a risk of \$2, the investor can exit the position if the price drops to \$71.89. However, the risk to reward ratio will be greater than 5 if the price rallies back

to its support level of \$85. The stock provides considerably high rewards relative to the risks.



Figure 6: MSEX one-year daily return w. 20 and 50-day MAs

While the above indicators have shown that the price of MSEX is likely to increase, there are risks to enter the position. The stock has been underperforming compared to the S&P 500 as shown in the one-year daily returns of MSEX relative to the daily returns of S&P 500 (*figure 7*). The market has been leading MSEX since the beginning of 2023 and the ratio between the stock returns relative to the market returns has been decreasing, as shown in the 50-day MA. The MA has been trending downward.

Still, we should analyze the relative strength in conjunction with other indicators to conduct a more thorough and comprehensive analysis.



Figure 7: MSEX:S&P 500 one-year daily return w. 50-day MA

## In Conclusion

Given the above analysis, this report recommends a long position on MSEX for riskseeking investors due to the following reasons:

- The broader market has been performing relatively well and fluctuating in an ascending channel, which is an optimistic sign.
- 2. While MSEX's performance is lagging relative to the market, both the 9-period and 14-period RSIs indicate that MSEX was oversold, and the price may bounce back.
- 3. The OBV shows that the current downtrend is about to diverge.
- 4. The VBP provides a snapshot of a good support level at \$85, which is well above the current trading price.
- 5. The risk to reward ratio is considerably high. If the stock price goes back to its support level, given the willingness to take a risk of \$2, it permits a relatively high reward.