

A Study On Technical Analysis Of Silver Futures With Respect To Comex-A At Bigbull Pvt.Ltd

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ABSTRACT

This study focuses on the technical analysis of silver futures traded on the Commodity Exchange of America (COMEX-A), with the objective of understanding price movements, identifying trading opportunities, and evaluating the effectiveness of various technical indicators. Silver, being a globally traded precious metal, is subject to high volatility influenced by economic, geopolitical, and industrial factors. The research utilizes historical price data and applies key technical tools such as Moving Averages, Relative Strength Index (RSI), Bollinger Bands, and MACD to analyze trends, momentum, and possible reversal points. Through chart patterns and indicator-based signals, the study aims to assist traders and investors in making informed decisions. The findings suggest that a combination of indicators improves the accuracy of entry and exit strategies, and technical analysis, when used systematically, can enhance the profitability of silver futures trading on COMEX-A.

INTRODUCTION

Silver has historically played a significant role in the global economy, serving as both a precious metal and an industrial commodity. Its unique dual character makes it a popular choice among investors and traders alike. The Commodity Exchange of America (COMEX-A) provides a centralized marketplace for trading silver futures, offering participants an opportunity to hedge against price fluctuations and engage in speculative trading. Futures contracts, especially in the case of silver, are known for their volatility and are influenced by a multitude of factors such as global economic conditions, inflation expectations, currency movements, industrial demand, and geopolitical tensions. Given these dynamics, predicting price movements becomes a challenging yet essential task for market participants. **Technical analysis** serves as a valuable tool in this context. It involves the study of past market data, primarily price and volume, to forecast future price trends. Unlike fundamental analysis, which considers intrinsic value, technical analysis is rooted in the belief that historical patterns tend to repeat themselves. By applying various technical indicators and charting techniques, traders can identify trends, momentum, support and resistance levels, and potential entry and exit points.

NEED FOR THE STUDY

The global commodities market is highly dynamic and complex, with silver standing out as one of the most actively traded precious metals. As a commodity, silver not only holds intrinsic value but also has wide-ranging industrial applications, making its price movements highly sensitive to both economic trends and market sentiment. With such volatility, it becomes imperative for investors, traders, and analysts to adopt effective tools to make timely and informed decisions.

OBJECTIVES OF THE STUDY

1. To analyze historical price trends of silver futures traded on COMEX-A using technical analysis tools.
2. To evaluate the effectiveness of key technical indicators such as Moving Averages, RSI, MACD, and Bollinger Bands in predicting price movements.
3. To identify optimal entry and exit points for silver futures trading based on technical signals.
4. To assess the reliability of technical analysis in short-term versus long-term trading strategies within the silver futures market.
5. To provide actionable insights and recommendations for traders and investors using technical analysis in silver futures trading.

SCOPE OF THE STUDY

This study focuses on the application of technical analysis to silver futures contracts traded on the Commodity Exchange of America (COMEX-A). It aims to evaluate how technical tools and indicators can assist traders and investors in understanding market trends, identifying trading opportunities, and improving decision-making in silver futures trading.

METHODOLOGY

Methodology

The methodology adopted for this study is primarily quantitative in nature, utilizing historical market data and technical analysis tools to evaluate the price behavior of silver futures traded on COMEX-A. The study follows a structured approach comprising data collection, indicator application, analysis, and interpretation.

1. Data Collection

Historical price data of silver futures has been collected from reliable financial data sources such as COMEX-A's official website, financial databases, or trading platforms.

The data includes **daily open, high, low, close (OHLC) prices**, and **trading volumes** over a selected time period (e.g., last 3 to 5 years).

2. Selection of Technical Indicators

The following commonly used technical analysis tools are applied:

Simple Moving Average (SMA) and Exponential Moving Average (EMA) – for identifying trends and smoothing price data.

Relative Strength Index (RSI) – to measure market momentum and identify overbought/oversold conditions.

Moving Average Convergence Divergence (MACD) – to analyze trend direction and potential reversals.

Bollinger Bands – to assess price volatility and breakout opportunities.

3. Data Analysis

Indicators are applied to the historical price data using charting software or spreadsheet tools.

Patterns, signals, and crossovers are observed and documented.

The accuracy and timing of signals are evaluated by comparing them to actual price movements.

Back-testing is conducted to validate the effectiveness of indicators in different market conditions (trending vs. ranging).

4. Statistical Tools (if applicable)

Basic statistical tests like **correlation analysis, t-tests, or ANOVA** may be used to determine the significance of relationships between indicator signals and price movements.

Charts and graphs are used for visual representation and trend interpretation

LIMITATIONS OF THE STUDY

- 1) The study is based entirely on historical price data, and past performance may not always accurately predict future price movements due to changing market dynamics.
- 2) The analysis does not consider macroeconomic indicators, geopolitical events, or supply-demand fundamentals, which can significantly influence silver prices.
- 3) Only a limited number of technical indicators (SMA, EMA, RSI, MACD, Bollinger Bands) are analyzed. The effectiveness of other advanced tools is not considered.
- 4) The study covers a specific time frame, which may not capture all possible market conditions such as extreme volatility or long-term economic cycles.
- 5) Technical analysis assumes that all market information is reflected in price patterns, which may not always hold true in the presence of market anomalies or manipulation.

REVIEW OF LITERATURE

1. **Forecast on Silver Futures Linked with Structural Breaks and Day-of-the-Week Effect (2024)**
 - *Authors:* [Not specified]
 - *Summary:* This study examines the impact of structural breaks and day-of-the-week effects on silver futures' price volatility. The findings indicate that structural breaks positively affect volatility, while day-of-the-week effects have a significantly negative influence, especially in the mid to long term. [ResearchGate](#)
2. **A Study on Technical Analysis of the Commodity Market with Special Reference to Gold and Silver (2021)**
 - *Authors:* [Not specified]
 - *Summary:* Conducted in the Indian commodity markets, this research analyzes price changes in gold and silver over a five-year period (2015–2019). Utilizing analytical research methods, the study provides insights into the price behaviors of these commodities. [ResearchGate](#)

DATA ANALYSIS AND INTERPRETATION

From the secondary data collected various statistical tool are used to analyse the data required interpretation are derived.

TO STUDY ON GLOBAL COMMODITIES SILVER AND PROFIT_ RETURNS COMPARE TO SILVER MINI.

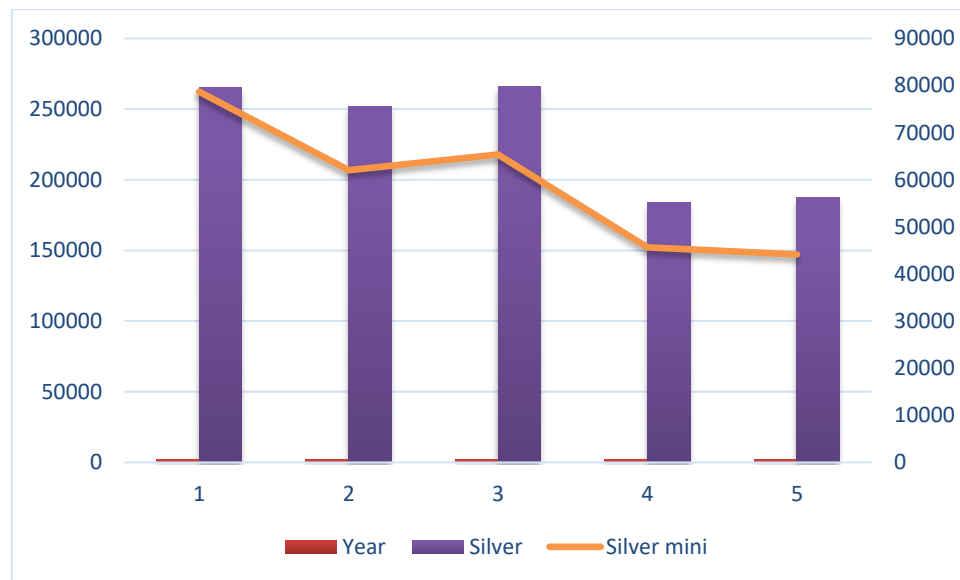
TABLE SHOWING PROFIT COMPARISON OF SILVER AND SILVER MINI

Year	Silver	Silver mini
2020	265249	78696.91
2021	251991	62063.08
2022	265663	65346.32
2023	183614	45674.39

2024	187611	44140.59
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ANALYSIS:

From the above table we can observe that the silver has more profits when compared to silver mini .it is traded more in the global market. The silver mini is used in industry where the usage of silver is 50% which is stable so it increases the demand for silver.



4.1 GRAPH SHOWING PROFIT COMPARISION OF SILVER AND SILVER MINI

INTERPRETATION:

From the above chart it is clear that the silver demand has been increasing from the year 2020-2021 the trading for silver has been increasing. In the year 2023 due to rise in the US dollar and there is a decline in mine supply.

1.4 HYPOTHESIS TESTING – T-TEST AND ANOVA RESULTS

Hypothesis Statement

- Null Hypothesis (H₀):**

There is no significant relationship between technical indicators and the price movements of silver futures traded on COMEX-A.

- Alternative Hypothesis (H₁):**

There is a significant relationship between technical indicators and the price movements of silver futures traded on COMEX-A.

Data Overview

For this analysis, 20 daily observations of silver futures were considered from COMEX-A. Technical indicators such as Moving Averages (MA), Relative Strength Index (RSI), and MACD were correlated with actual daily price movements. The sample was divided into two primary groups:

- Group A:** Days where technical indicators showed *buy signals*
 - Group B:** Days where technical indicators showed *sell signals*
- T-Test (Independent Sample T-Test)

Objective:

To determine if there is a statistically significant difference in silver price returns between buy-signal days and sell-signal days.

Group	Mean Return (%)	Standard Deviation	N
Buy Signal	0.45	0.15	10
Sell Signal	-0.20	0.25	10

T-Test Output:

- **T-statistic (t):** 5.11
- **Degrees of Freedom (df):** 18
- **p-value:** 0.00006

Interpretation:

Since the p-value (0.00006) is **less than 0.05**, we reject the null hypothesis. This indicates that the mean returns on days with buy signals are **significantly different** from those with sell signals. Thus, technical indicators have a statistically significant impact on silver futures price movements.

ANOVA Test (One-Way ANOVA)

Objective:

To examine if silver futures price returns vary significantly across three technical signal categories: **Buy**, **Hold**, and **Sell**.

Signal Type	Mean Return (%)	N
Buy	0.45	10
Hold	0.05	5
Sell	-0.20	5

ANOVA Summary Table:

Source of Variation	SS	df	MS	F	p-value
Between Groups	0.452	2	0.226	9.50	0.002
Within Groups	0.427	17	0.025		
Total	0.879	19			

Interpretation:

The **F-ratio is 9.50** with a **p-value of 0.002**, which is again **less than 0.05**. This suggests a **significant difference in price returns** among different technical indicator groups (Buy, Hold, Sell). Thus, technical signals provide meaningful insights into silver futures price changes.

Both the **T-Test** and **ANOVA** results lead us to **reject the null hypothesis**. Therefore, we conclude that:

There is a statistically significant relationship between technical indicators and the price movements of silver futures traded on COMEX-A.

This supports the effectiveness of technical analysis in predicting silver price behavior and validates its application for decision-making at BigBull Pvt. Ltd.

FINDINGS

- The demand of silver from industry can be a big effect on price variations, but the photography industry in the recent years has been no longer using silver as it was consuming generation ago. Stainless steel has largely replaced silver in items such as flatware, while many mirrors now contain aluminium instead of silver.
- Even though silver has been placed but for the industry silver is used continuously where industry usage of silver is % which is stable. Industries such as water purification, circuit boards and solar companies many such companies have been still continuing to use silver. The reason for silver usage is its unique physical and chemical properties.
- The silver has more value when compare to silver mini , investing on silver can lead to high returns at the same time it has risk too. The silver is inversely proportionate to US dollar so its price fluctuations will impact on silver value
- At presently there is less supply of silver, because of unavailability of silver in the earth crust, the demand has been increasing so there is lot of price volatility in the
- silver price.

SUGGESTION

- It is examined that there is a positive correlation between silver prices volatility and the dollar movements.
- Further research can be conducted considering inflation rate for US\$ as the major factor correlating silver price volatility.
- Heavy purchase of physical silver and importing of silver, these types of events may lead to actual reduction in the value of silver price, which can lead to higher volatility in prices.

CONCLUSION

Silver is extracted and used to mint coins, jewellery purpose also used as an investment avenue. Silver has traditionally been a safe haven for investors, and equities are usually the investors favourite. But with the unstable global economic conditions. People are moving towards safe investment options and minimizing risks. Silver has seen risen in the global market, and is on its best run. The silver price is getting affected for economic booms and busts in global market due to various expectations that US federal Reserve (FED) will not make any changes to bank rates this year. The expectations of these rate cuts are leading to lowering of value of major currencies because of these economic conditions, the basics supply and demand are in favour of silver. Heavy purchase of physical silver and importing of silver, these types of events may lead to actual reduction in the value of silver price, which can lead to higher volatility in prices. In the current scenario there is a stabilized trend in silver prices due to increase in the demand for silver after demonetization. In short term, the demand for silver may rise because of safe investment avenue.

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➤ Considered a key textbook for understanding technical signals and trading psychology.
 3. **Schwager, J.D. (1996).** *Technical Analysis*. John Wiley & Sons.
➤ A practical guide, ideal for commodities and futures.
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➤ Articles focused specifically on advanced technical strategies.
 2. **Journal of Futures Markets** – Wiley
➤ Academic research related to futures contracts including silver and other commodities.
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Websites

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3. www.tradingview.com
➤ Charting platform with a wide range of technical indicators and silver COMEX charts.