

# A Study on Futures and Options in Derivatives

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## Abstract

Examining the processes that influence risk and return profiles for market players, this research probes the complicated world of futures and options markets. This study takes a holistic view of the topic, delving into market behavior studies, quantitative models, and historical data to provide a detailed picture of how financial market options and futures work. Part one of the research delves into the theory of futures and options, explaining how these derivative products work. It delves into the ways these monetary instruments help hedgers manage risk, investors make speculative bets, and arbitrageurs use them strategically. Futures and options are both distinguished from one another in the research, with the study elaborating on the specific features and consequences of each. In the future, the study will examine the volatility patterns and risk-adjusted returns of several asset classes' futures and options markets. The research intends to find patterns and outliers that have affected the risk-reward environment for market players by looking at case studies and past market occurrences. Option pricing models and their use in analyzing market expectations and implied volatility are further explored in the paper. The study investigates the effect of market mood on option pricing and uses empirical analysis to assess how well option pricing models capture market dynamics.

**Keywords:** Intrinsic value, Hedging

## Introduction

The worth of a derivative depends on the value of an underlying asset; it is a kind of financial instrument. The value of one or more underlying assets determines the future purchase or sale of an item in a derivative contract. These trades are made on the stock market trading platforms. In this diversified portfolio, you may find stocks and bonds with sugar crude, soyabean, cotton, coffee, the rupee's value vs the dollar, and a whole lot more besides.

Using a derivative in isolation is pointless. Its main asset is the foundation upon which its importance rests. Some examples of derivatives include futures, options, swaps, collars, floors, and forwards, among many more. Options and futures contracts account for the vast majority of derivatives.

For eons, traders and manufacturers have protected themselves from the inevitable swings in commodity prices by hedging their bets on the derivatives market. The demand for products based on financial instruments such as bonds, currencies, stocks, and stock indexes has now surpassed that of commodities markets, even though commodities markets were the original engine of expansion in India's derivatives market.

Silver, spices, coffee, cotton, oil, and gold are just few of the goods that India has a long history of dealing in on the black market. Prior to the morarji desai government's restriction on forward contracts, trading in the derivatives market was lawful. Teji and mandi were the names for the unstructured trading

forms used for stock derivatives. The ability to trade futures contracts for different commodities on different platforms is something that has just recently emerged. Markets for oil and cotton are located in Mumbai, whereas those for soy beans are in Bhopal, pepper is in Kochi, coffee is in Bangalore, and so forth.

The Bombay and National stock exchanges launched Sensex and Nifty futures trading in June 2000. In June 2001, the options market for the Sensex and Nifty were introduced. In July, options trading on 31 major stocks started, and in November, futures trading on the same 31 equities started. The number of equities traded on NSE derivatives is increasing; there are now 41.

To protect themselves from the risk of losing money due to changes in commodity prices, investors may only utilize commodity-related derivatives for almost 300 years after they were first created. As a result of the instability in the financial markets after 1970, financial derivatives gained prominence.

The value of financial derivatives is derived from financial assets themselves. Any valuable object, including currency, stocks, bonds, etc., may be considered an asset. Futures, options, swaps, and forward rate agreements are all examples of derivatives. Futures and options are the most frequently traded instruments, as we have already shown. However, by the 1990s, these products' proportion of derivatives product transactions had increased to about two-thirds, thanks to their meteoric rise in popularity. The number of instruments available, the complexity of agreements, and the volume of transactions in the financial derivatives market have all increased at an unprecedented rate. One kind of index-linked derivative that has lately become more popular, particularly among institutional investors, is futures and options on stock indexes. Their high correlation with famous indexes and diverse portfolios, together with their ease of use, make them ideal for even inexperienced investors.

### **Different Derivatives**

- Forwards: We will go into more depth later on, but options, forwards, and futures are the most frequent types of derivatives transactions. This article will provide a quick rundown of the most common types of derivatives contracts.
- Future Contract: The forward contract is an instance of a customized contract in which the parties agree to pay a certain amount now in return for a payment at a specified future date. Two parties may enter into an agreement to purchase or sell an item at a future date and price via a futures contract. Because of its standardization and exchange trading, futures contracts are considered a subset of forward contracts.
- Option Contract: Two distinct kinds of option contracts exist:

#### **Contrast between put and call options**

An underlying asset's call option price and quantity may be specified for a future date, but the buyer is only obligated to purchase the asset at that price and quantity if the option is purchased before the expiration date. The buyer is granted the right, but not the responsibility, to purchase the underlying asset at a defined price and on or before a specific date, unlike with a call option. Most options traded on options exchanges have a maximum maturity of nine months, and the usual holding time for options is one year. Warrants, which are option contracts with long maturities, have grown in popularity among traders as of late.

- Baskets: Option baskets are based on underlying asset portfolios. A moving average or a basket of assets could serve as the underlying asset. Stock index basket options are one kind of basket option.

- **SWAPs** : Swaps involve the covert exchange of future cash flows based on an agreed-upon formula between two parties. It is possible to think of them as a collection of forward contracts. For instance, in an interest rate swap, all parties involved agree to use the same currency, allowing them to trade just the cash flows associated with interest.

By exchanging one set of finances for another set of currencies, two or more parties may engage in what is known as a currency swap. This impacts the interest as well as the principle.

### Research Gap

Researchers contributed much on Finding out how common biases like loss aversion and overconfidence affect traders' choices in the options and futures markets. One possible way to get insight into market dynamics is to learn how psychological variables impact risk management and trading tactics. Determining which futures and options hedging techniques work best in developing market situations. When doing so, it is important to take into account variables such as liquidity restrictions and regulatory regimes, as well as the specific difficulties and possibilities encountered by market players in these areas. Analyzing how well dynamic hedging methods respond to changing market circumstances. Assessing the efficacy of strategies that modify holdings in response to changing volatility, market tendencies, or macroeconomic variables is one such approach.

### Objectives of the Study

- To know about the Derivative market in India
- To study the mechanism of the Future Contract and Option Contract
- To analyze the risk and return of selected contracts of Futures and Options
- To evaluate the risk management strategies with the help of Derivatives

### Scope of the Study

The study is conducted with the selected futures and Option contracts for the period of three months contract values.

### Research Methodology

The research comprised the following steps:

1. **Random scrip selection:** The scrip is chosen using the provided data. Companies selected for the research include TCS, SAIL, Tata Motors, PNB Bank, and SBI Life.
2. **Data collection:** The data pertains to the contract period that begins in December 2023 and ends in January 2024. Organizations like TCS, SAIL, Tata Motors, PNB Bank, and SBILife are part of the selected data.
3. **Analysis:** In order to analyse the collected data, one may consult the national stock market's graphs and tabulations, which show the profitability positions of the option and futures contracts.

### Literature Review

**Derivative Market in India – Futures and Options by Mr. Venkatesha, (June 2022)** : Derivatives are a useful tool for managing risk since their value depends on the underlying asset. One such underlying asset is an index, but it might also be a stock, a bond, currency, interest, etc. Banks, securities companies, enterprises, and investors all participate in risk hedging to receive cheaper funding and make

a profit via derivatives. Even more rapid expansion of derivatives is anticipated in the future. Without actually swapping a principal asset or commodity, one may use financial derivatives to shift certain financial risks (such as interest rate risk, currency risk, credit risk, stock and commodity price risk, etc.) to a third party that is better able to manage or absorb these risks.

**Introduction of Futures and Options on a Stock Index and their impact on the trading volume and volatility: Empirical Evidence from the DJIA Components by Mohammad G. Robbani and Rafiqul Bhuyan (Sep 2004):** According to this research, market volatility has increased since the introduction of futures and options trading for the Dow Jones Industrial Average (DJIA) index. Participants in the market, especially those engaged in capital extraction by trading the stocks that make up the DJIA index. According to the analysis, the underlying stocks should have higher required rates of return due to the greater volatility. This study will help investors find the target company's price, which is important since investors are constantly looking for a stock with a decent return and minimal risk.

**A Study on Financial Derivatives (Futures & Options) with reference to ICICI Bank by Dr. T. Sreelatha, (July 2018):** The derivatives market—which encompasses forwards, futures, and options—was born out of the need for risk-averse economic players to hedge against uncertainty resulting from fluctuations in asset prices. Derivatives are a useful tool for managing risk since their value depends on the underlying asset. The price of underlying assets is determined by market participants' expectations of future events in a well-structured derivatives market. Derivatives trading has become more important to the global economy in the last few years. The increasing popularity of investing in stocks, both at home and abroad, fascinates me. Much research in industrialized nations has focused on how listed futures and options affect the volatility of the underlying cash market. Not many investors are conversant with India's derivative market since it is still in its early stages; so, SEBI should endeavor to educate the investing public.

**The Impact of Maturity on Futures and Options with reference to national Stock Exchange: An Exploratory study (2019):** When it came to trading individual equities in 2007, the National Stock Exchange was where it was at. Since then, the Indian stock futures market has expanded greatly. New products such as options and futures have emerged to lessen the impact of potential stock price fluctuations on bettors. Stock, index, and futures price contracts that expire monthly, bimonthly, or quarterly commonly occur on the last Thursday of the month. Option and futures research has taken off after the National Stock Exchange introduced the Nifty Index Option and the Bank Nifty Weekly Option contracts. According to popular belief, options with longer maturities are more susceptible to the risk of a shift in the economic environment than options with shorter maturities. The significance of studying the effects of maturity date on futures and options is shown by all of the above. Because of this, the present study aims to provide a thorough literature review using this paradigm.

**A Study of Derivatives Market (with reference to Futures and Options) by Priti Jain Vilas (April 2023):** Find the gap between the derivative market's potential and the amount of knowledge and interest among investors in taking advantage of it. Even while investment and saving rates are on the rise, many people aren't taking advantage of the potential presented by derivatives, an underappreciated asset class. The two most common types of derivatives that I have studied are options and futures. Not only that, but I have researched the products' risk and return profiles, as well as the investment aims and outcomes of their users. Analyzes the gap between the potential of the derivatives market and the ability of investors to profit from it. In order to have a better understanding of the derivatives market, its practical approach, and its implementation, it is helpful to examine the fashion and retail industry, the financial services and

IT business, and three industries within each of these three sectors.

**Research on Futures Markets: Issues, Approaches and Empirical Findings by Steven C. Blank (July 1989) :** With an exclusive emphasis on agricultural markets, this paper summarizes the existing literature on futures and options. The key grounds of contention revolve on the social and economic significance of markets to firms. Issues that have not been adequately addressed are given more attention, sometimes by proposing ideas that contradict accepted knowledge. The bulk of the research presents these marketplaces as contributing positively to society and carrying out beneficial corporate operations, notwithstanding many critiques of present theory and empirical methodology.

**Data Analysis**

Date	Close	Strike Price	Close Price - Strike Price	Lot Size	Call Money Margin
01-Dec-23	3,567.50	3500	67.50	6750	-
04-Dec-23	3,573.60	3500	73.60	7360	-
05-Dec-23	3,585.00	3500	85.00	8500	-
06-Dec-23	3,665.45	3500	165.45	16545	-
07-Dec-23	3,674.10	3500	174.10	17410	-
08-Dec-23	3,685.50	3500	185.50	18550	-
11-Dec-23	3,685.00	3500	185.00	18500	-
12-Dec-23	3,727.65	3500	227.65	22765	-
13-Dec-23	3,658.55	3500	158.55	15855	-
14-Dec-23	3,735.10	3500	235.10	23510	-
15-Dec-23	3,919.55	3500	419.55	41955	-
18-Dec-23	3,912.00	3500	412.00	41200	-
19-Dec-23	3,876.10	3500	376.10	37610	-
20-Dec-23	3,843.00	3500	343.00	34300	-
21-Dec-23	3,858.40	3500	358.40	35840	-
22-Dec-	3,886.25	3500	386.25	38625	-

23					
26-Dec-23	3,860.40	3500	360.40	36040	-
27-Dec-23	3,867.70	3500	367.70	36770	-
28-Dec-23	3,858.05	3500	358.05	35805	-
29-Dec-23	3,849.20	3500	349.20	34920	-
01-Jan-24	3,863.40	3500	363.40	36340	-
02-Jan-24	3,824.55	3500	324.55	32455	-
03-Jan-24	3,732.65	3500	232.65	23265	-
04-Jan-24	3,716.05	3500	216.05	21605	-
05-Jan-24	3,771.85	3500	271.85	27185	-
08-Jan-24	3,716.95	3500	216.95	21695	-
09-Jan-24	3,730.20	3500	230.20	23020	-
10-Jan-24	3,752.90	3500	252.90	25290	-
11-Jan-24	3,772.40	3500	272.40	27240	-
12-Jan-24	3,902.00	3500	402.00	40200	-
15-Jan-24	3,911.60	3500	411.60	41160	-
16-Jan-24	3,866.00	3500	366.00	36600	-
17-Jan-24	3,894.95	3500	394.95	39495	-
18-Jan-24	3,912.30	3500	412.30	41230	-
19-Jan-24	3,973.00	3500	473.00	47300	-
20-Jan-24	3,896.90	3500	396.90	39690	-
23-Jan-24	3,881.70	3500	381.70	38170	-
24-Jan-24	3,878.45	3500	378.45	37845	-
25-Jan-24	3,828.50	3500	328.50	32850	-
29-Jan-24	3,828.40	3500	328.40	32840	-
30-Jan-24	3,826.90	3500	326.90	32690	-
31-Jan-24	3,835.40	3500	335.40	33540	-

Total 12,605.15 1260515

Initial Amount		100000
Minimum		80000
Intrinsic Value	12,605.15 x 100	1260515
Strike Price	3500 x 100	350000



**Interpretation**

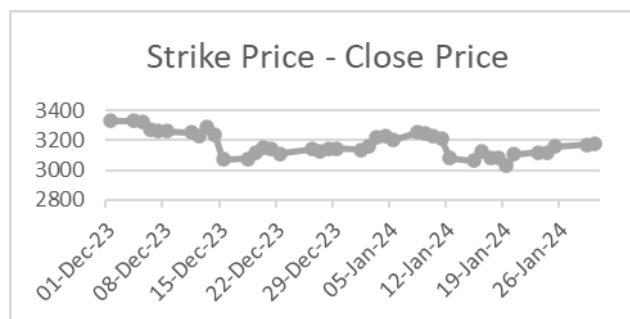
In the above contract TCS Future Contract should deposit an initial amount of Rs. 100000 at the clearing house. In that amount TCS should maintain Rs. 80000 as minimum amount in the clearing house. There is no deficit in the above contract so the contract is beneficiary to TCS because in the above case. TCS intrinsic value (Rs. 1260515) is greater than the strike value Rs. 350000, therefore the future contract can be made. Hence it is beneficial to the buyer. The highest profit in the above contract is 473 i.e. on 19<sup>th</sup> Jan 2024.

**TCS Call Option**

Date	Strike Price	Close Price	Strike Price - Close Price	Lot Size	Call Money Margin
01-Dec-23	3500	170.4	3329.6	332960	-
04-Dec-23	3500	167.5	3332.5	333250	-
05-Dec-23	3500	177.95	3322.05	332205	-
06-Dec-23	3500	225.5	3274.5	327450	-
07-Dec-23	3500	231.8	3268.2	326820	-
08-Dec-23	3500	238.85	3261.15	326115	-
11-Dec-23	3500	247.2	3252.8	325280	-
12-Dec-23	3500	268.1	3231.9	323190	-
13-Dec-23	3500	209.95	3290.05	329005	-
14-Dec-23	3500	263.15	3236.85	323685	-
15-Dec-23	3500	428	3072	307200	-
18-Dec-23	3500	423.25	3076.75	307675	-
19-Dec-23	3500	384	3116	311600	-
20-Dec-23	3500	351.55	3148.45	314845	-
21-Dec-23	3500	356.8	3143.2	314320	-
22-Dec-23	3500	387.55	3112.45	311245	-
26-Dec-23	3500	358.2	3141.8	314180	-
27-Dec-23	3500	370.8	3129.2	312920	-
28-Dec-23	3500	359.65	3140.35	314035	-
29-Dec-23	3500	352.75	3147.25	314725	-
01-Jan-24	3500	365.1	3134.9	313490	-
02-Jan-24	3500	339.25	3160.75	316075	-

03-Jan-24	3500	275	3225	322500	-
04-Jan-24	3500	267	3233	323300	-
05-Jan-24	3500	297.4	3202.6	320260	-
08-Jan-24	3500	245	3255	325500	-
09-Jan-24	3500	252.85	3247.15	324715	-
10-Jan-24	3500	270.5	3229.5	322950	-
11-Jan-24	3500	288.2	3211.8	321180	-
12-Jan-24	3500	421	3079	307900	-
15-Jan-24	3500	438.15	3061.85	306185	-
16-Jan-24	3500	376	3124	312400	-
17-Jan-24	3500	418	3082	308200	-
18-Jan-24	3500	420	3080	308000	-
19-Jan-24	3500	472.3	3027.7	302770	-
20-Jan-24	3500	392.5	3107.5	310750	-
23-Jan-24	3500	380	3120	312000	-
24-Jan-24	3500	383	3117	311700	-
25-Jan-24	3500	339.95	3160.05	316005	-
29-Jan-24	3500	327.1	3172.9	317290	-
30-Jan-24	3500	325	3175	317500	-
31-Jan-24	3500	339.1	3160.9	316090	-
Total			133395	13339500	

Initial Amount	100000	
Minimum	80000	
Intrinsic Value	133395 x 100	13339500
Strike Price	3500 x 100	350000



### Interpretation

In the above contract we can see that the strike price of the TCS call option is 3500, where the highest closing price is 472.3 i.e. on 19<sup>th</sup> January 2024, for the period of two months. Where in this contract the highest profit is 3332.5 on 4<sup>th</sup> December 2023. So the option contract is beneficiary to the option buyer.

### TCS Put Option

Date	Close price	Strike price	Close Price - Strike price	Lot Size	Call Money Margin
01-Dec-23	101.5	3500	-3398.5	-339850	319850



04-Dec-23	99.35	3500	-3400.7	-340065	340065
05-Dec-23	91.15	3500	-3408.9	-340885	340885
06-Dec-23	66.8	3500	-3433.2	-343320	343320
07-Dec-23	62.9	3500	-3437.1	-343710	343710
08-Dec-23	58.85	3500	-3441.2	-344115	344115
11-Dec-23	52.9	3500	-3447.1	-344710	344710
12-Dec-23	45.2	3500	-3454.8	-345480	345480
13-Dec-23	66.25	3500	-3433.8	-343375	343375
14-Dec-23	46.4	3500	-3453.6	-345360	345360
15-Dec-23	18.15	3500	-3481.9	-348185	348185
18-Dec-23	17.15	3500	-3482.9	-348285	348285
19-Dec-23	21.55	3500	-3478.5	-347845	347845
20-Dec-23	25.85	3500	-3474.2	-347415	347415
21-Dec-23	24.2	3500	-3475.8	-347580	347580
22-Dec-23	19.15	3500	-3480.9	-348085	348085
26-Dec-23	20.85	3500	-3479.2	-347915	347915
27-Dec-23	18.4	3500	-3481.6	-348160	348160
28-Dec-23	19.2	3500	-3480.8	-348080	348080
29-Dec-23	19.4	3500	-3480.6	-348060	348060
01-Jan-24	23.5	3500	-3476.5	-347650	347650
02-Jan-24	28.95	3500	-3471.1	-347105	347105
03-Jan-24	45.85	3500	-3454.2	-345415	345415
04-Jan-24	45.7	3500	-3454.3	-345430	345430

05-Jan-24	33.6	3500	-3466.4	-346640	346640
08-Jan-24	41.05	3500	-3459	-345895	345895
09-Jan-24	39.1	3500	-3460.9	-346090	346090
10-Jan-24	32.1	3500	-3467.9	-346790	346790
11-Jan-24	26.75	3500	-3473.3	-347325	347325
12-Jan-24	12.75	3500	-3487.3	-348725	348725
15-Jan-24	12.15	3500	-3487.9	-348785	348785
16-Jan-24	14.05	3500	-3486	-348595	348595
17-Jan-24	13.2	3500	-3486.8	-348680	348680
18-Jan-24	11.5	3500	-3488.5	-348850	348850
19-Jan-24	8.95	3500	-3491.1	-349105	349105
20-Jan-24	10.15	3500	-3489.9	-348985	348985
23-Jan-24	10.55	3500	-3489.5	-348945	348945
24-Jan-24	10.2	3500	-3489.8	-348980	348980
25-Jan-24	10.75	3500	-3489.3	-348925	348925
29-Jan-24	9.7	3500	-3490.3	-349030	349030
30-Jan-24	8.7	3500	-3491.3	-349130	349130
31-Jan-24	7.55	3500	-3492.5	-349245	349245
Total				-145648	-14564800

Initial Amount 100000  
 Minimum 80000  
 Intrinsic Value -145648 x 100 -14564800  
 Strike Price 3500 x 100 350000



**Interpretation**

From the above TATA TEA put option contract the intrinsic values are negative so it is undervalued to the holder. From the beginning of the contract the intrinsic value are negative only. Where the strike price remains constant (Rs.720) then the closing price of these contracts as not crossed the strike price. The highest closing price of this contract is Rs.66.85 on 8<sup>th</sup> Oct 2008.so the contract is undervalued. In the above TCS Put Option contract the intrinsic Values are negative so it is undervalued to the holder. From the beginning of the contract the intrinsic value is negative only. Where the strike value remains

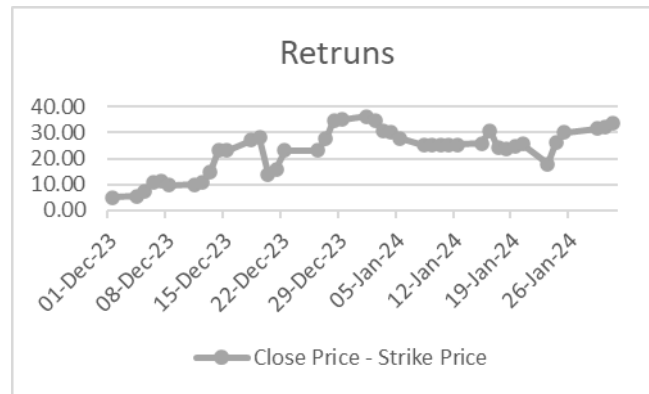
constant (Rs. 3500) then the closing price of these contract is not crossed the strike price. The highest closing price of this contract is Rs. 101.50 i.e. on 1<sup>st</sup> December 2023.

## SAIL Future Contract

Date	Close	Strike Price	Close Price - Strike Price	Lot Size	Call Money Margin
01-Dec-23	95	90	5.00	500	-
04-Dec-23	95.5	90	5.50	550	-
05-Dec-23	97.4	90	7.40	740	-
06-Dec-23	101.1	90	11.10	1110	-
07-Dec-23	101.5	90	11.50	1150	-
08-Dec-23	99.7	90	9.70	970	-
11-Dec-23	99.9	90	9.90	990	-
12-Dec-23	101	90	11.00	1100	-
13-Dec-23	105	90	15.00	1500	-
14-Dec-23	113.05	90	23.05	2305	-
15-Dec-23	113.25	90	23.25	2325	-
18-Dec-23	117	90	27.00	2700	-
19-Dec-23	118	90	28.00	2800	-
20-Dec-23	104.05	90	14.05	1405	-
21-Dec-23	106	90	16.00	1600	-
22-Dec-23	113.15	90	23.15	2315	-
26-Dec-23	113.15	90	23.15	2315	-
27-Dec-23	117.55	90	27.55	2755	-
28-Dec-23	124.75	90	34.75	3475	-
29-Dec-23	125.05	90	35.05	3505	-
01-Jan-24	126.25	90	36.25	3625	-
02-Jan-24	124.6	90	34.60	3460	-
03-Jan-24	120.85	90	30.85	3085	-
04-Jan-24	120.05	90	30.05	3005	-
05-Jan-24	117.85	90	27.85	2785	-
08-Jan-24	115.15	90	25.15	2515	-
09-Jan-24	115.25	90	25.25	2525	-
10-Jan-24	115.5	90	25.50	2550	-
11-Jan-24	115.5	90	25.50	2550	-
12-Jan-24	115.5	90	25.50	2550	-
15-Jan-24	115.75	90	25.75	2575	-
16-Jan-24	120.8	90	30.80	3080	-
17-Jan-24	114.1	90	24.10	2410	-
18-Jan-24	113.9	90	23.90	2390	-
19-Jan-24	114.8	90	24.80	2480	-
20-Jan-24	115.7	90	25.70	2570	-
23-Jan-24	108.05	90	18.05	1805	-

24-Jan-24	116	90	26.00	2600	-
25-Jan-24	120.05	90	30.05	3005	-
29-Jan-24	121.5	90	31.50	3150	-
30-Jan-24	122	90	32.00	3200	-
31-Jan-24	123.45	90	33.45	3345	-
Total			973.70	97370	

Initial Amount	100000
Minimum	80000
Intrinsic Value	973.70 x 100 97370
Strike Price	90 x 100 9000



### Interpretation

In the above contract Sail Future Contract should deposit an initial amount of Rs. 100000 at the clearing house. In that amount Sail should maintain Rs. 80000 as minimum amount in the clearing house. There is no deficit in the above contract so the contract is beneficiary to Sail because in the above case. Sail intrinsic value (Rs. 97370) is greater than the strike value Rs. 9000, therefore the future contract can be made. Hence it is beneficial to the buyer. The highest profit in the above contract is 126.25 i.e. on 1<sup>st</sup> Jan 2024.

### SAIL Call Option

Date	Strike Price	Close Price	Strike Price - Close Price	Lot Size	Call Money Margin
01-Dec-23	90	8.55	81.45	8145	-
04-Dec-23	90	8.95	81.05	8105	-
05-Dec-23	90	10.15	79.85	7985	-
06-Dec-23	90	12.85	77.15	7715	-
07-Dec-23	90	12.45	77.55	7755	-
08-Dec-23	90	11.75	78.25	7825	-
11-Dec-23	90	13.8	76.2	7620	-
12-Dec-23	90	13.1	76.9	7690	-
13-Dec-23	90	15.75	74.25	7425	-
14-Dec-23	90	22.75	67.25	6725	-
15-Dec-23	90	23.2	66.8	6680	-

18-Dec-23	90	26.9	63.1	6310	-
19-Dec-23	90	22.7	67.3	6730	-
20-Dec-23	90	16.1	73.9	7390	-
21-Dec-23	90	20.8	69.2	6920	-
22-Dec-23	90	24.3	65.7	6570	-
26-Dec-23	90	24.95	65.05	6505	-
27-Dec-23	90	26.75	63.25	6325	-
28-Dec-23	90	34	56	5600	-
29-Dec-23	90	34.75	55.25	5525	-
01-Jan-24	90	35.75	54.25	5425	-
02-Jan-24	90	34	56	5600	-
03-Jan-24	90	30.15	59.85	5985	-
04-Jan-24	90	29.7	60.3	6030	-
05-Jan-24	90	28	62	6200	-
08-Jan-24	90	25.35	64.65	6465	-
09-Jan-24	90	25.2	64.8	6480	-
10-Jan-24	90	26	64	6400	-
11-Jan-24	90	24.5	65.5	6550	-
12-Jan-24	90	25.8	64.2	6420	-
15-Jan-24	90	25.5	64.5	6450	-
16-Jan-24	90	30.3	59.7	5970	-
17-Jan-24	90	23.95	66.05	6605	-
18-Jan-24	90	23.85	66.15	6615	-
19-Jan-24	90	24.85	65.15	6515	-
20-Jan-24	90	25.65	64.35	6435	-
23-Jan-24	90	19.6	70.4	7040	-
24-Jan-24	90	25.7	64.3	6430	-
25-Jan-24	90	29.7	60.3	6030	-
29-Jan-24	90	30.95	59.05	5905	-
30-Jan-24	90	31.7	58.3	5830	-
31-Jan-24	90	33	57	5700	-
		Total		2786.25	278625

Initial Amount	100000		
Minimum	80000		
Intrinsic Value	2786.25 x 100	278625	
Strike Price	90 x 100	9000	



### Interpretation

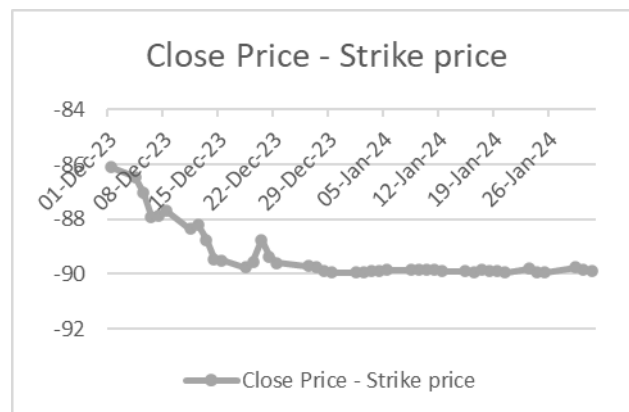
In the above contract we can see that the strike price of the SAIL call option is 90, where the highest closing price is 35.75 i.e. on 1<sup>st</sup> January 2024, for the period of two months. Where in this contract the highest profit is 81.45 on 1<sup>st</sup> December 2023. So, the option contract is beneficiary to the option buyer.

### Sail Put Option

Date	Close price	Strike price	Close Price - Strike price	Lot Size	Call Money Margin
01-Dec-23	3.9	90	-86.1	-8610	-
04-Dec-23	3.55	90	-86.45	-8645	-
05-Dec-23	2.95	90	-87.05	-8705	5960
06-Dec-23	2.1	90	-87.9	-8790	8790
07-Dec-23	2.15	90	-87.85	-8785	8785
08-Dec-23	2.3	90	-87.7	-8770	8770
11-Dec-23	1.65	90	-88.35	-8835	8835
12-Dec-23	1.8	90	-88.2	-8820	8820
13-Dec-23	1.25	90	-88.75	-8875	8875
14-Dec-23	0.55	90	-89.45	-8945	8945
15-Dec-23	0.5	90	-89.5	-8950	8950
18-Dec-23	0.25	90	-89.75	-8975	8975
19-Dec-23	0.45	90	-89.55	-8955	8955
20-Dec-23	1.25	90	-88.75	-8875	8875
21-Dec-23	0.65	90	-89.35	-8935	8935
22-Dec-23	0.4	90	-89.6	-8960	8960
26-Dec-23	0.3	90	-89.7	-8970	8970
27-Dec-23	0.25	90	-89.75	-8975	8975
28-Dec-23	0.1	90	-89.9	-8990	8990
29-Dec-23	0.05	90	-89.95	-8995	8995
01-Jan-24	0.05	90	-89.95	-8995	8995
02-Jan-24	0.05	90	-89.95	-8995	8995
03-Jan-24	0.1	90	-89.9	-8990	8990
04-Jan-24	0.1	90	-89.9	-8990	8990

05-Jan-24	0.15	90	-89.85	-8985	8985
08-Jan-24	0.15	90	-89.85	-8985	8985
09-Jan-24	0.15	90	-89.85	-8985	8985
10-Jan-24	0.15	90	-89.85	-8985	8985
11-Jan-24	0.15	90	-89.85	-8985	8985
12-Jan-24	0.1	90	-89.9	-8990	8990
15-Jan-24	0.1	90	-89.9	-8990	8990
16-Jan-24	0.05	90	-89.95	-8995	8995
17-Jan-24	0.15	90	-89.85	-8985	8985
18-Jan-24	0.1	90	-89.9	-8990	8990
19-Jan-24	0.1	90	-89.9	-8990	8990
20-Jan-24	0.05	90	-89.95	-8995	8995
23-Jan-24	0.2	90	-89.8	-8980	8980
24-Jan-24	0.05	90	-89.95	-8995	8995
25-Jan-24	0.05	90	-89.95	-8995	8995
29-Jan-24	0.25	90	-89.75	-8975	8975
30-Jan-24	0.15	90	-89.85	-8985	8985
31-Jan-24	0.1	90	-89.9	-8990	8990
Total			-3751.1	-375110	

Initial Amount		100000
Minimum		80000
Intrinsic Value	$-3751.1 \times 100$	-375110
Strike Price	$90 \times 100$	9000



### Interpretation

In the above SAIL Put Option contract the intrinsic Values are negative so it is undervalued to the holder. From the beginning of the contract the intrinsic value is negative only. Where the strike value remains constant (Rs. 90) then the closing price of these contract is not crossed the strike price. The highest closing price of this contract is Rs. 3.90 i.e. on 1<sup>st</sup> December 2023

## Tata Motors Future Contract

Date	Close	Strike Price	Close Price - Strike Price	Lot Size	Call Money Margin
01-Dec-23	718	800	-82.00	-8200	-
04-Dec-23	719.45	800	-80.55	-8055	-
05-Dec-23	722.55	800	-77.45	-7745	4000
06-Dec-23	736.4	800	-63.60	-6360	6360
07-Dec-23	735	800	-65.00	-6500	6500
08-Dec-23	728.35	800	-71.65	-7165	7165
11-Dec-23	731.55	800	-68.45	-6845	6845
12-Dec-23	729.75	800	-70.25	-7025	7025
13-Dec-23	735.4	800	-64.60	-6460	6460
14-Dec-23	735.6	800	-64.40	-6440	6440
15-Dec-23	747	800	-53.00	-5300	5300
18-Dec-23	744.4	800	-55.60	-5560	5560
19-Dec-23	742.2	800	-57.80	-5780	5780
20-Dec-23	716.9	800	-83.10	-8310	8310
21-Dec-23	722.6	800	-77.40	-7740	7740
22-Dec-23	737.05	800	-62.95	-6295	6295
26-Dec-23	733.65	800	-66.35	-6635	6635
27-Dec-23	752.45	800	-47.55	-4755	4755
28-Dec-23	765.05	800	-34.95	-3495	3495
29-Dec-23	793.1	800	-6.90	-690	690
01-Jan-24	801.45	800	1.45	145	-
02-Jan-24	795.7	800	-4.30	-430	285
03-Jan-24	791.05	800	-8.95	-895	895
04-Jan-24	807	800	7.00	700	-
05-Jan-24	800.75	800	0.75	75	-
08-Jan-24	799.75	800	-0.25	-25	25
09-Jan-24	810.25	800	10.25	1025	-
10-Jan-24	818.35	800	18.35	1835	-
11-Jan-24	823.35	800	23.35	2335	-
12-Jan-24	824.3	800	24.30	2430	-
15-Jan-24	821.35	800	21.35	2135	-
16-Jan-24	825.45	800	25.45	2545	-
17-Jan-24	813	800	13.00	1300	-
18-Jan-24	827.9	800	27.90	2790	-
19-Jan-24	831.5	800	31.50	3150	-
20-Jan-24	825.3	800	25.30	2530	-
23-Jan-24	804.3	800	4.30	430	-
24-Jan-24	814.9	800	14.90	1490	-
25-Jan-24	814.45	800	14.45	1445	-
29-Jan-24	847.3	800	47.30	4730	-



30-Jan-24	864.35	800	64.35	6435	-
31-Jan-24	886.4	800	86.40	8640	-

Total -805.40 -80540

Initial Amount		100000
Minimum		80000
Intrinsic Value	-805.40 x 100	-80540
Strike Price	800 x 100	80000



**Interpretation**

In the above contract Tata Motors Future Contract should deposit an initial amount of Rs. 100000 at the clearing house. In that amount TCS should maintain Rs. 80000 as minimum amount in the clearing house. There is a deficit in the above contract so the contract is not beneficiary to Tata Motors in the above case. Tata Motors intrinsic value (Rs. -80540) is less than the strike value Rs. 80000, therefore the future contract can be made. Hence it is beneficial to the buyer. The highest profit in the above contract is 86.40 i.e. on 31<sup>st</sup> Jan 2024.

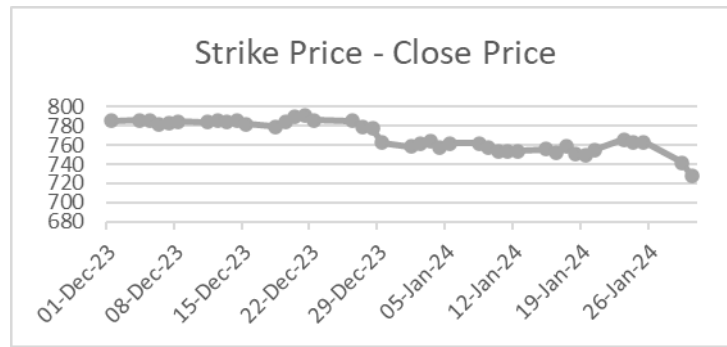
**Tata Motors Call Options**

Date	Strike Price	Close Price	Strike Price - Close Price	Lot Size	Call Money Margin
01-Dec-23	800	14.6	785.4	78540	-
04-Dec-23	800	13.9	786.1	78610	-
05-Dec-23	800	14.45	785.55	78555	-
06-Dec-23	800	17.95	782.05	78205	-
07-Dec-23	800	17.45	782.55	78255	-
08-Dec-23	800	15.1	784.9	78490	-
11-Dec-23	800	16.05	783.95	78395	-
12-Dec-23	800	14.25	785.75	78575	-
13-Dec-23	800	15.25	784.75	78475	-
14-Dec-23	800	14.8	785.2	78520	-
15-Dec-23	800	18.2	781.8	78180	-
18-Dec-23	800	20.75	779.25	77925	-

19-Dec-23	800	15.95	784.05	78405	-
20-Dec-23	800	11	789	78900	-
21-Dec-23	800	9.65	790.35	79035	-
22-Dec-23	800	14.15	785.85	78585	-
26-Dec-23	800	14.7	785.3	78530	-
27-Dec-23	800	20.5	779.5	77950	-
28-Dec-23	800	22.45	777.55	77755	-
29-Dec-23	800	37.6	762.4	76240	-
01-Jan-24	800	41.85	758.15	75815	-
02-Jan-24	800	38.05	761.95	76195	-
03-Jan-24	800	35.45	764.55	76455	-
04-Jan-24	800	41.9	758.1	75810	-
05-Jan-24	800	38.5	761.5	76150	-
08-Jan-24	800	37.9	762.1	76210	-
09-Jan-24	800	42.6	757.4	75740	-
10-Jan-24	800	46.35	753.65	75365	-
11-Jan-24	800	47.2	752.8	75280	-
12-Jan-24	800	46.4	753.6	75360	-
15-Jan-24	800	44.25	755.75	75575	-
16-Jan-24	800	47.6	752.4	75240	-
17-Jan-24	800	41	759	75900	-
18-Jan-24	800	49.9	750.1	75010	-
19-Jan-24	800	50.35	749.65	74965	-
20-Jan-24	800	45.1	754.9	75490	-
23-Jan-24	800	34.25	765.75	76575	-
24-Jan-24	800	36.85	763.15	76315	-
25-Jan-24	800	36.65	763.35	76335	-
29-Jan-24	800	58.4	741.6	74160	-
30-Jan-24	800	72.05	727.95	72795	-
31-Jan-24	800	91.75	708.25	70825	-

Total 32236.9 3223690

Initial Amount		100000
Minimum		80000
Intrinsic Value	32236.9 x 100	3223690
Strike Price	800 x 100	80000



**Interpretation**

In the above contract we can see that the strike price of the TCS call option is 800, where the highest closing price is 91.75 i.e. on 31<sup>st</sup> January 2024, for the period of two months. Where in this contract the highest profit is 790.35 on 19<sup>th</sup> December 2023. So, the option contract is beneficiary to the option buyer.

**Tata Motors Put Options**

Date	Close price	Strike price	Close Price - Strike price	Lot Size	Call Money Margin
01-Dec-23	95.9	800	-704.1	-70410	-
04-Dec-23	95.55	800	-704.45	-70445	-
05-Dec-23	92.9	800	-707.1	-70710	5960
06-Dec-23	83	800	-717	-71700	71700
07-Dec-23	83.15	800	-716.85	-71685	71685
08-Dec-23	88.35	800	-711.65	-71165	71165
11-Dec-23	83.5	800	-716.5	-71650	71650
12-Dec-23	87.25	800	-712.75	-71275	71275
13-Dec-23	83.5	800	-716.5	-71650	71650
14-Dec-23	83.75	800	-716.25	-71625	71625
15-Dec-23	74.65	800	-725.35	-72535	72535
18-Dec-23	75.3	800	-724.7	-72470	72470
19-Dec-23	76.4	800	-723.6	-72360	72360
20-Dec-23	94.35	800	-705.65	-70565	70565
21-Dec-23	91.35	800	-708.65	-70865	70865
22-Dec-23	79.3	800	-720.7	-72070	72070
26-Dec-23	82.7	800	-717.3	-71730	71730
27-Dec-23	67.3	800	-732.7	-73270	73270
28-Dec-23	58.6	800	-741.4	-74140	74140
29-Dec-23	43.7	800	-756.3	-75630	75630
01-Jan-24	39	800	-761	-76100	76100
02-Jan-24	41.1	800	-758.9	-75890	75890
03-Jan-24	41.5	800	-758.5	-75850	75850
04-Jan-24	34.2	800	-765.8	-76580	76580
05-Jan-24	36.2	800	-763.8	-76380	76380
08-Jan-24	37.45	800	-762.55	-76255	76255

09-Jan-24	31.55	800	-768.45	-76845	76845
10-Jan-24	27.1	800	-772.9	-77290	77290
11-Jan-24	22.9	800	-777.1	-77710	77710
12-Jan-24	21.6	800	-778.4	-77840	77840
15-Jan-24	22	800	-778	-77800	77800
16-Jan-24	21.2	800	-778.8	-77880	77880
17-Jan-24	27.3	800	-772.7	-77270	77270
18-Jan-24	21.7	800	-778.3	-77830	77830
19-Jan-24	17.75	800	-782.25	-78225	78225
20-Jan-24	18.75	800	-781.25	-78125	78125
23-Jan-24	29	800	-771	-77100	77100
24-Jan-24	21.35	800	-778.65	-77865	77865
25-Jan-24	21.45	800	-778.55	-77855	77855
29-Jan-24	10.95	800	-789.05	-78905	78905
30-Jan-24	8.45	800	-791.55	-79155	79155
31-Jan-24	5.65	800	-794.35	-79435	79435

Total -31421.4 3142135

Initial Amount 100000  
 Minimum 80000  
 Intrinsic Value -31421.4 x 100 -3142135  
 Strike Price 800 x 100 80000



**Interpretation**

In the above Tata Motors Put Option contract the intrinsic Values are negative so it is undervalued to the holder. From the beginning of the contract the intrinsic value is negative only. Where the strike value remains constant (Rs. 800) then the closing price of these contract is not crossed the strike price. The highest closing price of this contract is Rs. 95.50 i.e. on 1<sup>st</sup> December 2023

## Findings

- TCS Future Contract should deposit an initial amount of Rs. 100000 at the clearing house. In that amount TCS should maintain Rs. 80000 as minimum amount in the clearing house. There is no deficit in the above contract so the contract is beneficiary to TCS because in the above case. TCS intrinsic value (Rs. 1260515) is greater than the strike value Rs. 350000, therefore the future contract can be made. Hence it is beneficial to the buyer. The highest profit in the above contract is 473 i.e. on 19<sup>th</sup> Jan 2024.
- The strike price of the TCS call option is 3500, where the highest closing price is 472.3 i.e. on 19<sup>th</sup> January 2024, for the period of two months. Where in this contract the highest profit is 3332.5 on 4<sup>th</sup> December 2023. So the option contract is beneficiary to the option buyer.
- TCS Put Option contract the intrinsic Values are negative so it is undervalued to the holder. From the beginning of the contract the intrinsic value is negative only. Where the strike value remains constant (Rs. 3500) then the closing price of these contract is not crossed the strike price. The highest closing price of this contract is Rs. 101.50 i.e. on 1<sup>st</sup> December 2023
- Sail Future Contract should deposit an initial amount of Rs. 100000 at the clearing house. In that amount Sail should maintain Rs. 80000 as minimum amount in the clearing house. There is no deficit in the above contract so the contract is beneficiary to Sail because in the above case. Sail intrinsic value (Rs. 97370) is greater than the strike value Rs. 9000, therefore the future contract can be made. Hence it is beneficial to the buyer. The highest profit in the above contract is 126.25 i.e. on 1<sup>st</sup> Jan 2024.
- The strike price of the SAIL call option is 90, where the highest closing price is 35.75 i.e. on 1<sup>st</sup> January 2024, for the period of two months. Where in this contract the highest profit is 81.45 on 1<sup>st</sup> December 2023. So, the option contract is beneficiary to the option buyer.
- SAIL Put Option contract the intrinsic Values are negative so it is undervalued to the holder. From the beginning of the contract the intrinsic value is negative only. Where the strike value remains constant (Rs. 90) then the closing price of these contract is not crossed the strike price. The highest closing price of this contract is Rs. 3.90 i.e. on 1<sup>st</sup> December 2023
- Tata Motors Future Contract should deposit an initial amount of Rs. 100000 at the clearing house. In that amount TCS should maintain Rs. 80000 as minimum amount in the clearing house. There is a deficit in the above contract so the contract is not beneficiary to Tata Motors in the above case. Tata Motors intrinsic value (Rs. -80540) is less than the strike value Rs. 80000, therefore the future contract can be made. Hence it is beneficial to the buyer. The highest profit in the above contract is 86.40 i.e. on 31<sup>st</sup> Jan 2024.
- The strike price of the TCS call option is 800, where the highest closing price is 91.75 i.e. on 31<sup>st</sup> January 2024, for the period of two months. Where in this contract the highest profit is 790.35 on 19<sup>th</sup> December 2023. So, the option contract is beneficiary to the option buyer.
- Tata Motors Put Option contract the intrinsic Values are negative so it is undervalued to the holder. From the beginning of the contract the intrinsic value is negative only. Where the strike value remains constant (Rs. 800) then the closing price of these contract is not crossed the strike price. The highest closing price of this contract is Rs. 95.50 i.e. on 1<sup>st</sup> December 2023

## Suggestions

- Make a strategy to protect your money and reduce the likelihood of losses. Never put all your eggs in one basket without diversifying your holdings and using stop-loss orders.

- Before dealing with any assets, be sure you have a thorough understanding of them. Corporate earnings, economic statistics, and international politics are some of the factors that might affect the markets.
- The intrinsic value of a call option is one if the stock price is more than the strike price; otherwise, it is zero.
- The intrinsic value of a put option is one if there is a positive difference between the strike price and the current stock price, and zero otherwise.
- Consider the theta part of time decay when pricing options. As options approach expiration, their intrinsic value is affected by time decay.
- Consider dividends from underlying stocks and interest rates as they are right now. These may affect the intrinsic value of options, particularly American-style options.
- Find the money, at the money, or out-of-the-money status of an option. It elucidates the current value and potential for future profit.
- To determine the risk-reward profile of the options, compare their intrinsic value to their total premium. Evaluate the premium in relation to the risk it involves.
- Remember to be informed about market sentiment and any news that might impact the value of the asset. During periods of extreme volatility, intrinsic values are more vulnerable to rapid changes

## Conclusion

Trading options and futures successfully requires an understanding of, and ability to evaluate, underlying values. Maintaining a consistent commitment to lifelong learning is essential in the futures and options trading industries. Keeping up with the latest market news, economic statistics, and regulatory developments is crucial. Never forget that internal and external factors, such as investor sentiment, should be included in any intrinsic value research. When trading futures and options, keep in mind that you run the risk of losing money at any given time. Before trading these financial products, you should give serious consideration to your choices and determine ways to lower your risk. Keep your flexibility in the face of ever-changing market circumstances, trade online wherever possible, and seek advice from professionals in the field.

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