



AN INVESTIGATION INTO THE INDIAN DERIVATIVES MARKET

CMA Sujata Singh

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Abstract

The derivatives market plays a crucial role in the economic development of a country. The objective of this study is to examine the impact of financial derivatives, specifically futures and options, on market volatility. Financial derivatives, including futures and options, have gained immense popularity in the world of finance and are widely used globally. This growth has been so rapid that it is now referred to as the derivatives revolution. In India, the development and growth of the derivatives market has been particularly pronounced. This study focuses on exploring the use of futures and options in the Indian stock market and aims to provide insights and recommendations to investors on how they can maximize their profits in the derivative markets.

Assistant Professor, Department of Commerce and Management, Kalinga University (C,G)
sujata.singh@kalingauniversity.ac.in

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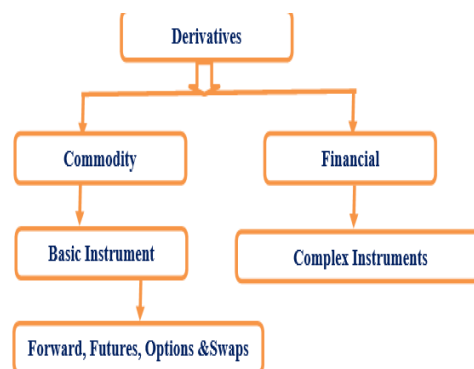
Introduction:

Derivatives are complex financial instruments that are derived from the value of an underlying asset. This underlying asset could be a stock, commodity, currency, interest rate, or stock market index. The value of the derivative is dependent on the value of the underlying asset, and as the price of the underlying changes, so does the value of the derivative. Derivatives serve the purpose of reducing financial risks by providing price commitments for future dates. Without an underlying asset, derivatives have no value. For instance, the value of a gold futures contract is based on the price of the underlying asset, which is gold. The prices in the derivatives market are determined by the spot or cash market price of the underlying.

Indian Derivative Market

SEBI established a 24-member committee, led by Dr. L. C. Gupta, on November 18, 1996 to lay the groundwork for introducing derivatives trading in India. The committee submitted its report on March 17, 1998, suggesting that derivatives should be considered securities and therefore subject to the same regulatory framework as securities trading. Following this, SEBI formed another group, led by Professor J.R. Verma, to further explore the operational details of derivatives trading. This group submitted its report in October 1998, outlining the margining system, initial margin methodology, membership criteria, deposit requirements, and real-time monitoring of positions. BSE and NSE were granted permission by SEBI to launch equity derivatives trading in June 2000, starting with index futures based on the Nifty and Sensex. Index options trading began in June 2001 and options on individual stocks started in July 2001, followed by futures contracts on individual stocks in November 2001. The Metropolitan Stock Exchange of India introduced derivative products in February 2013. The derivatives market in India has a rich history dating back to 1875, when the Bombay Cotton Trading Association began future trading. India was one of the largest futures trading industries in the world by 1900, but after independence, the government banned cash settlement and options trading in 1952. This ban was lifted in 2000, thanks to the creation of the National Electronics Commodity Exchange. The

National Stock Exchange, an electronic trading exchange, was established in 1993, while the Bombay Stock Exchange was already fully functional for over 100 years.



Categorisation of Derivatives

Commodity derivatives: Commodity derivatives are financial instruments that provide an opportunity for investors to gain from changes in the price of a specific commodity, without actually owning it. By purchasing a derivatives contract, the investor obtains the option to trade the commodity at a predetermined price at a later date. It is possible for the investor to either purchase or sell the commodity through the contract.

Financial derivative: A financial derivative is an agreement between multiple parties, where the value of the contract is determined by a specific underlying financial asset or group of assets. This could be a security, such as a bond or stock, a commodity, a currency, an interest rate, or an index of the market.

Forwards: A forward is a type of OTC derivative that allows two parties to agree to purchase or sell an underlying asset at a specified price at a future date. The specifics of the contract are determined by mutual agreement between the parties involved.

Futures: Futures are a type of exchange-traded contract for the future purchase or sale of a specific underlying asset. The agreement outlines the details of the transaction, including the date and price, and is made through a formal process on a stock exchange. The specifications for the contract are determined by the exchange.

Options : An option is a type of agreement that gives the holder the ability to purchase or sell the underlying asset at a predetermined price and date, but they are not obligated to do so. The person who buys the option pays a fee known as

the premium, while the person who sells the option, referred to as the writer, receives the premium and is required to sell or buy the underlying asset if the holder decides to exercise their right.

Swaps: A swap is an agreement made between two parties to exchange cash flow in the future according to a prearranged formula. Swaps are, broadly speaking, series of forward contracts. Swaps help market participants manage risk associated with volatile interest rates, currency exchange rates and commodity prices.

Exotic Derivatives: Exotic derivatives are defined as unconventional and intricate derivative agreements that are dependent on the worth of a particular underlying asset or a defined group of assets.

LEAPS: LEAPS, which stands for Long-Term Equity Anticipation Securities, are options with a longer lifespan than conventional options.

These long-term options can be obtained in two forms, call options and put options.

Needs to study

- Constructing a diversified portfolio is made easier for investors with this.
- This research provides investors with information regarding investments in futures, options, and swaps.
- Understanding risk management in derivatives is facilitated by using this.

Objectives of the Study

- Examining the impact of derivatives in the Indian stock market
- Evaluating and contrasting futures, options, and swaps within the derivatives market in India
- Demonstrating the development and effectiveness of futures, options, and swaps.

Data Analysis and Interpretation - TCS Stock Futures

Table -1

DATE	OPEN	HIGH	LOW	CLOSE	SETTLE PRICE	CONTRACTS	TURNOVER(IN LACS)	OI
29-Mar-2019	2025.95	2036.95	2001.05	2014.60	2014.60	11093	55944.77	13977000
28-Mar-2019	1990.85	2030.00	1987.15	2017.00	2017.00	26998	135356.58	14054250
27-Mar-2019	2005.00	2011.90	1979.05	1984.05	1984.05	15025	75019.01	10033250
26-Mar-2019	1995.00	2010.00	1970.00	1997.40	1997.40	17164	85071.66	7617500
25-Mar-2019	2016.00	2022.85	1991.65	1999.30	1999.30	14586	72968.48	4882000
22-Mar-2019	2014.50	2027.80	2001.00	2019.60	2019.60	6117	30823.74	2108750
20-Mar-2019	2051.50	2062.90	2016.00	2030.25	2030.25	20195	11220.25	939000
19-Mar-2019	2035.70	2051.30	2013.00	2044.60	2044.60	1204	6117.22	607000
18-Mar-2019	2076.00	2079.00	2030.05	2041.60	2041.60	682	3496.37	452500
15-Mar-2019	2016.65	2087.70	2016.65	2058.70	2058.70	1551	7998.66	396750
14-Mar-2019	2017.80	2020.00	1997.00	2007.40	2007.40	604	3027.43	209000
13-Mar-2019	2027.50	2034.95	1998.75	2014.60	2014.60	332	1675.01	100250
12-Mar-2019	2026.20	2039.40	2017.80	2029.55	2029.55	143	725.92	86250
11-Mar-2019	2037.65	2046.30	2020.75	2029.70	2029.70	159	806.92	82000
08-Mar-2019	2034.50	2048.70	2026.80	2041.70	2041.70	254	1293.71	80000
07-Mar-2019	2020.00	2041.05	2020.00	2032.85	2032.85	169	856.97	66250
06-Mar-2019	2003.75	2035.00	2001.70	2020.85	2020.85	136	687.56	57000
05-Mar-2019	2007.00	2008.15	1993.50	2002.55	2002.55	93	465.53	57750

Buyer **Seller**

15/03/2019(buying)

2058.70

29/03/2019(closing)

2014.602014.60

Loss = 44.10

Profit = 44.10

Loss = 44.10*250 = 11025

Profit = 44.10*250 = 11025

Interpretation: It can be inferred from Table 4.1 that as the FUTURE (BUY) increases, the profit also rises, while an increase in FUTURE (SELL) results in a loss.

Table -2

Option Market Analysis TCS Stock March Equity Tab

Symbol	Series	Date	Prev Close	Open Price	High Price	Low Price	Last Price	Close Price	VWAP	Total Traded Quantity	Turnover ₹
TCS	EQ	05-Mar-2019	1,995.40	2,005.00	2,007.00	1,976.60	1,985.05	1,988.10	1,987.11	24,49,622	4,86,76,70,461.50
TCS	EQ	06-Mar-2019	1,988.10	1,989.30	2,015.00	1,985.05	2,005.00	1,999.60	2,001.30	26,35,047	5,27,35,30,564.35
TCS	EQ	07-Mar-2019	1,999.60	2,005.00	2,024.05	2,000.20	2,015.00	2,013.30	2,014.40	25,39,884	5,11,63,30,320.40
TCS	EQ	08-Mar-2019	2,013.30	2,025.00	2,033.00	2,010.05	2,022.75	2,022.70	2,023.03	20,31,071	4,10,89,21,516.40
TCS	EQ	11-Mar-2019	2,022.70	2,028.90	2,033.00	2,003.65	2,016.15	2,014.80	2,017.10	31,11,689	6,27,65,93,842.10
TCS	EQ	12-Mar-2019	2,014.80	2,014.05	2,024.80	2,003.00	2,009.10	2,012.45	2,015.60	26,58,550	5,35,85,83,632.50
TCS	EQ	13-Mar-2019	2,012.45	2,013.00	2,015.90	1,978.60	1,995.00	2,000.50	2,001.12	18,33,163	3,66,83,74,639.65
TCS	EQ	14-Mar-2019	2,000.50	2,004.95	2,007.80	1,981.00	1,990.40	1,987.40	1,991.28	19,05,495	3,79,43,68,663.95
TCS	EQ	15-Mar-2019	1,987.40	1,998.90	2,068.95	1,991.00	2,036.00	2,039.95	2,040.01	51,84,318	10,57,60,85,296.25
TCS	EQ	18-Mar-2019	2,039.95	2,043.00	2,064.60	2,011.00	2,023.85	2,022.80	2,033.02	23,49,915	4,77,74,35,477.20
TCS	EQ	19-Mar-2019	2,022.80	2,030.00	2,030.00	1,995.10	2,028.50	2,022.80	2,010.71	23,73,993	4,77,34,16,985.45
TCS	EQ	20-Mar-2019	2,022.80	2,028.00	2,044.80	2,000.00	2,000.25	2,015.05	2,025.82	30,91,165	6,26,21,36,193.40
TCS	BL	22-Mar-2019	1,925.65	2,015.05	2,015.05	2,015.05	2,015.05	2,015.05	2,015.05	2,64,913	53,38,12,940.65
TCS	EQ	22-Mar-2019	2,015.05	2,015.00	2,016.00	1,983.30	2,010.00	2,005.65	1,998.96	31,48,149	6,29,30,31,836.95
TCS	EQ	25-Mar-2019	2,005.65	2,007.80	2,007.80	1,977.20	1,980.80	1,984.25	1,987.88	24,29,205	4,82,89,60,486.25
TCS	EQ	26-Mar-2019	1,984.25	1,984.00	1,994.95	1,958.05	1,977.40	1,982.65	1,971.46	23,16,539	4,56,69,62,637.55
TCS	EQ	27-Mar-2019	1,982.65	1,994.00	1,998.00	1,961.00	1,964.85	1,967.90	1,979.12	22,66,166	4,48,50,03,551.40
TCS	EQ	28-Mar-2019	1,967.90	1,980.00	2,014.60	1,972.80	2,004.45	2,000.30	1,993.96	40,54,489	8,08,45,06,923.20
TCS	EQ	29-Mar-2019	2,000.30	2,019.00	2,024.90	1,983.55	2,000.00	2,001.65	2,001.70	29,48,955	5,90,29,26,700.50

This analysis is useful to know where to buy and sell options as such as call and put.

Open price= 2005.00 on 05th mar 19 Low price= 1958.05 on 29th mar 19 High price= 2068.95 on 15th mar 19 Close price= 2001.65 on 29th mar 19

Break Even point (BEP) = (high price +low price)/2

= (2068.95+1958.05)/2

=2013.5

Margin of Safety (MOS):

1. Margin of safety = opening share value-
BEP = 2005.00 – 2013.5 = -8.

Here, the margin of safety is in the negative, leading to increased losses for investors and short selling. To potentially increase profits,

an investor may consider purchasing a put option. However, it is suggested to avoid investing in a call option.

2. Margin of safety= high price value-
BEP=2068.95 – 2013.5= 55.4

The margin of safety is negative, which means that investors can reap more profits by going long. One strategy that they can use is to purchase a put option to increase their profits. Another option is to sell their call options, also to maximize profits.

3. 3. Margin of safety= low share value -BEP =1958.05 – 2013.5= - 55.4

The negative margin of safety leads to increased losses for investors and short selling. To increase profits, an investor may sell a put

option. However, it is suggested to avoid investing in a call option.

Interpretation:

From the calculation, it can be seen that the TCS stock reached its Break-Even Point (BEP) in 2013.5. At the highest price of TCS stock, the margin of safety is 55.45, whereas at the lowest price, it is negative, at -55.45. The open price of TCS stock results in a margin of safety of -8.5.

Table -3

TCS Stock Call Option Table March (STRIKE PRICE= 1700) Buyers

DATE	OPEN	HIGH	LOW	CLOSE	SETTLE PRICE	CONTRACTS	TURNOVER(IN LACS)	OI
29-Mar-2019	312.40	313.00	312.40	313.00	313.00	3	15.09	2000
28-Mar-2019	306.00	306.00	306.00	306.00	306.00	1	5.02	1250
27-Mar-2019	0.00	0.00	0.00	301.00	278.30	0	0.00	1000
26-Mar-2019	0.00	0.00	0.00	301.00	293.35	0	0.00	1000
25-Mar-2019	304.00	304.00	301.00	301.00	301.00	4	20.03	1000
22-Mar-2019	0.00	0.00	0.00	350.15	318.25	0	0.00	0
20-Mar-2019	0.00	0.00	0.00	350.15	328.50	0	0.00	0
19-Mar-2019	0.00	0.00	0.00	350.15	336.75	0	0.00	0
18-Mar-2019	0.00	0.00	0.00	350.15	337.45	0	0.00	0
15-Mar-2019	0.00	0.00	0.00	350.15	355.85	0	0.00	0
14-Mar-2019	0.00	0.00	0.00	350.15	304.35	0	0.00	0
13-Mar-2019	0.00	0.00	0.00	350.15	317.90	0	0.00	0
12-Mar-2019	0.00	0.00	0.00	350.15	330.30	0	0.00	0
11-Mar-2019	0.00	0.00	0.00	350.15	333.55	0	0.00	0
08-Mar-2019	0.00	0.00	0.00	350.15	343.15	0	0.00	0
07-Mar-2019	0.00	0.00	0.00	350.15	335.30	0	0.00	0
06-Mar-2019	0.00	0.00	0.00	350.15	323.60	0	0.00	0
05-Mar-2019	0.00	0.00	0.00	350.15	314.40	0	0.00	0

Pay Off

Spot price on 5th November Spot price 1988

Strike price 1700

Amount 288

Premium paid (-) 314.40 Net loss 26.4*250

Buyer loss =6600

Interpretation:

Based on the calculation, it can be concluded that despite a positive spot price, the buyer incurs a loss due to a negative premium paid.

Sellers pay off

Strike price 1700

Spot price 1988

Amount -288

Premium received 314.40

profit $26.4 * 250$ Seller profit =6600

From the calculation, it can be deduced that even if the spot price is negative, the seller still earns a profit because the premium paid is positive.

Table -4**TCS Stock Put Option Table March (Strike Price= 1700)**

DATE	OPEN	HIGH	LOW	CLOSE	SETTLE PRICE	CONTRACTS	TURNOVER (IN LACS)	OI
29-Mar-2019	4.60	4.60	3.60	3.70	3.70	7	29.82	1250
28-Mar-2019	3.60	4.40	3.60	4.40	4.40	2	8.52	2250
27-Mar-2019	0.00	0.00	0.00	6.50	0.60	0	0.00	2250
26-Mar-2019	0.00	0.00	0.00	6.50	0.55	0	0.00	2250
25-Mar-2019	0.00	0.00	0.00	6.50	0.75	0	0.00	2250
22-Mar-2019	6.00	6.50	5.90	6.50	6.50	3	12.80	2250
20-Mar-2019	4.60	4.60	4.60	4.60	4.60	1	4.26	1500
19-Mar-2019	5.50	6.00	5.50	5.50	5.50	3	12.79	1750
18-Mar-2019	4.60	4.60	4.60	4.60	4.60	1	4.26	1250
15-Mar-2019	0.00	0.00	0.00	6.70	1.60	0	0.00	1000
14-Mar-2019	6.70	6.70	6.70	6.70	6.70	2	8.53	1000
13-Mar-2019	0.00	0.00	0.00	6.00	2.35	0	0.00	500
12-Mar-2019	0.00	0.00	0.00	6.00	2.50	0	0.00	500
11-Mar-2019	0.00	0.00	0.00	6.00	3.00	0	0.00	500
08-Mar-2019	5.00	6.00	5.00	6.00	6.00	2	8.53	500
07-Mar-2019	0.00	0.00	0.00	6.60	4.95	0	0.00	0
06-Mar-2019	0.00	0.00	0.00	6.60	6.65	0	0.00	0
05-Mar-2019	0.00	0.00	0.00	6.60	8.55	0	0.00	0

Buyers pay off

Strike price 1700

Spot price 1988

Amount 288

Premium paid (-)8.55

Buyer loss = $296.55 * 250$

Net loss = 74137.5

Interpretation

If the spot price decreases, the buyer's loss will decrease as the option they bought is currently "out of the money."

Sellers Pay Off

Spot price	1988
Strike price	1700
Amount	288
Premium received	8.55
Sellers profit	296.55*250
	= 74137.5

Interpretation:

If the spot price increases, the seller's profit will also increase, as the option is out of the money.

Findings:

1. The study has concluded that utilizing derivatives can reduce the risk in the stock market.
2. Futures investors can protect against losses in near-month contracts by utilizing mid-month contracts.
3. Options investors can generate profits through the use of either call or put options as necessary.
4. It has been determined that options provide greater growth potential for investors in the future.
5. Investors can employ a margin of safety and make informed decisions on buying and selling stocks.

Suggestion :

1. The market is influenced by a variety of factors including economic conditions, global events, and news related to specific companies. It is crucial for investors to have a thorough understanding of these factors before investing.
2. Investors who are willing to take on more risk have the potential to earn higher returns.
3. The concept of margin of safety provides

investors with a framework for making informed decisions about when to buy and sell stocks in a safe and secure manner.

4. prior to investing, it is recommended that investors have a basic understanding of derivatives and their workings.
5. Options offer a higher return on investment with a lower level of risk compared to futures.

Conclusion

This study concludes that options provide higher returns compared to futures. The stock market offers high returns to investors who can tolerate high risk. Derivatives, on the other hand, are used to reduce risk and offset losses in the stock market. Compared to futures, options offer higher returns and lower risk.

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