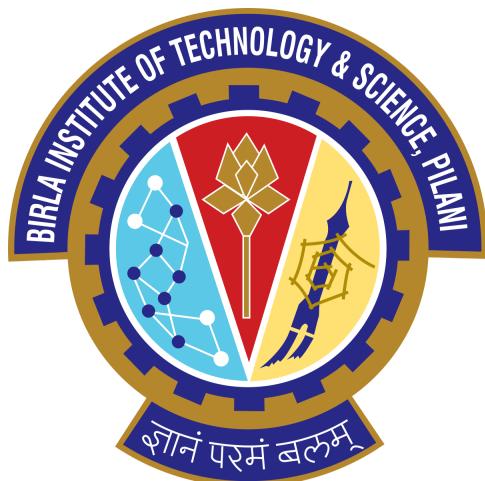


REPORT ON
OPTION TRADING STRATEGIES
BY
GROUP 24

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Under the supervision of
DR. SHREYA BISWAS



BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI
(FEBRUARY, 2024)

**COURSE - FIN F311: DERIVATIVES AND RISK MANAGEMENT
(DRM)**

Group Number: 24

COMPANY: THE RAMCO CEMENT (RAMCOCEM)

Note:

- All prices are in Indian Rupees (INR).
- Appropriate references have been cited wherever necessary.
- All the graphs presented in this document follow the convention specified in and below the graph.

ACKNOWLEDGEMENT

We would like to express our sincerest gratitude to Dr. Shreya Biswas, Assistant Professor, Department of Economics and Finance, for allowing us to work under her on this project and taking her valuable time to provide us with the required guidance wherever required. Her input proved to be very vital for the project. We thank her for providing us with such a wonderful opportunity to apply our course knowledge to real-life data and get hands-on experience. We are indebted for all her help and guidance throughout the course and this assignment.

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THE RAMCO CEMENTS LIMITED

INTRODUCTION

- Ramco Cements was established as Madras Cements in 1961 by Shri. P.A.C. Ramasamy Raja, an industrialist and the founder of Ramco Group of Companies. The first plant commenced operation at Ramasamy Raja Nagar Plant, Aruppukkottai, Virudhunagar District, Tamil Nadu. They are the first to adopt dry process kiln technology and vertical roller mills which help in energy efficiency.
- Ramco Cements operates multiple state-of-the-art cement manufacturing plants across India, producing a wide range of cement products catering to various construction needs. They offer products such as Ordinary Portland Cement (OPC), Portland Pozzolana Cement (PPC), and special products tailored to specific needs and requirements.
- Since its establishment, Ramco Cements has placed a strong emphasis on corporate social responsibility (CSR) initiatives, focusing on areas such as healthcare, education, and community development in the regions where it operates.
- Over the years, Ramco Cements has earned a reputation for reliability, consistency, and customer satisfaction, making it a preferred choice for construction projects ranging from infrastructure development to residential and commercial construction. With a focus on quality, innovation, and sustainability, Ramco Cements continues to play a pivotal role in India's infrastructure growth and development.

FUNDAMENTAL ANALYSIS

1. BALANCE SHEET ANALYSIS

THE RAMCO CEMENTS LIMITED

Balance Sheet

as at 31st March 2023

Particulars	Note No.	31-03-2023	Rs. in Crores 31-03-2022
Assets			
Non-Current Assets			
Property, Plant and Equipment	7	9,865.67	7,463.42
Capital Work in Progress	8	1,926.89	2,992.15
Investment Property	9	218.57	220.72
Intangible Assets	10	90.04	67.44
Intangible Assets under Development	11	60.44	41.86
Financial Assets			
<i>Investments in Subsidiaries & Associates</i>	12	173.99	173.47
<i>Other Investments</i>	13	28.32	27.80
<i>Loans</i>	14	29.67	85.03
<i>Other Financial Assets</i>	15	36.61	29.05
Other Non-Current Assets	16	199.30	250.01
		12,629.50	11,350.95
Current Assets			
Inventories	17	882.34	833.33
Financial Assets			
<i>Trade Receivables</i>	18	464.96	349.77
<i>Cash and Cash Equivalents</i>	19	135.97	143.74
<i>Bank Balances other than Cash and Cash Equivalents</i>	20	32.62	32.30
<i>Loans</i>	21	19.54	20.39
<i>Other Financial Assets</i>	22	214.19	154.30
Other Current Assets	23	137.77	170.73
		1,887.39	1,704.56
Total Assets		14,516.89	13,055.51
Equity & Liabilities			
Equity			
Equity Share Capital	24	23.63	23.63
Other Equity	25	6,769.90	6,501.23
		6,793.53	6,524.86
Non-Current Liabilities			
Financial Liabilities			
<i>Borrowings</i>	26	3,622.16	2,857.29
<i>Lease Liabilities</i>	27	19.48	19.58
Provisions	28	53.34	41.25
Deferred Tax Liabilities, net	29	928.51	824.04
Deferred Government Grants	30	16.18	10.07
		4,639.67	3,752.23
Current Liabilities			
Financial Liabilities			
<i>Borrowings</i>	31	865.26	1,072.66
<i>Lease Liabilities</i>	32	0.21	0.14
<i>Trade Payables</i>	33		
- Total outstanding dues of micro enterprises and small enterprises		6.05	13.06
- Total outstanding dues of creditors other than micro enterprises and small enterprises		631.21	470.53
<i>Other Financial Liabilities</i>	34	1,145.93	902.85
Other Current Liabilities	35	391.55	270.73
Provisions	36	39.98	36.91
Deferred Government Grants	37	2.51	1.38
Current Tax Liabilities, net	38	0.99	10.16
		3,083.69	2,778.42
Total Equity and Liabilities		14,516.89	13,055.51
<i>Significant Accounting Policies, Judgments and Estimates</i>	1 - 6		
<i>See accompanying notes to the Financial Statements</i>	7 - 64		

As per our report annexed

For **SRSV & ASSOCIATES**

Chartered Accountants

Firm Registration Number: 015041S

P.SANTHANAM

Partner

Membership No. 018697

Chennai

18-05-2023

For **RAMAKRISHNA RAJA AND CO**

Chartered Accountants

Firm Registration Number: 005333S

M. VIJAYAN

Partner

Membership No. 026972

M.F. FAROOQUI

Chairman

DIN: 01910054

A.V. DHARMAKRISHNAN

Chief Executive Officer

S. VAITHIYANATHAN

Chief Financial Officer

K.SELVANAYAGAM

Secretary

1. The balance sheet states the value of assets, liabilities, and equity of the company as of 31st March 2023 and of 31st March 2022.
2. It can be seen that the value of total assets rose from more than 13000 crore to more than 14500 crore. Their equity value has risen more compared to the liabilities they owe, which is indeed a really good sign.
3. This shows that the company has strived hard to make it count, and they are reaping rewards currently.

Source: Integrated Annual Report 2022-23

https://ramcocements.in/cms/uploads/Standalone_Financial_Balance_Sheet_170723_fdec41029d.pdf

2. STOCK ANALYSIS



The above chart depicts the performance of Ramco Cements' stocks in the last financial year (the time duration has been set to 1 year and the performance has been recorded).

3. INDUSTRY ANALYSIS:

Peer comparison

Sector: Cement Industry: Cement - South India

 EDIT COLUMNS

S.No.	Name	CMP Rs.	P/E	Mar Cap Rs.Cr.	Div Yld %	NP Qtr Rs.Cr.	Qtr Profit Var %	Sales Qtr Rs.Cr.	Qtr Sales Var %	ROCE %
1.	Dalmia BharatLtd	2089.70	32.33	39191.83	0.43	266.00	31.33	3600.00	7.30	8.48
2.	The Ramco Cement	867.35	48.11	20494.82	0.23	93.38	38.57	2106.13	4.85	6.55
3.	India Cements	245.15		7597.13	0.00	0.99	88.13	1144.46	-10.66	-3.70
4.	Orient Cement	242.15	28.51	4960.90	0.62	44.99	63.48	751.31	2.60	11.96
5.	Sagar Cements	245.45	105.08	3208.22	0.29	-10.18	58.13	669.41	16.27	6.70
6.	K C P	201.65	15.72	2599.70	0.05	95.81	800.62	777.12	41.07	6.22
7.	NCL Industries	236.30	13.22	1068.85	1.27	25.11	25.93	505.02	20.49	11.08
Median: 15 Co.		236.3	24.34	1051.22	0.05	0.99	57.76	216.86	7.3	6.22

- From the table above, it can be said that Ramco Cements has performed well compared to almost all of its industry rivals. Its market cap of over 20,000 crores and over 35% Sales quarter profit growth is a testament to its efficient and consistent performance.

4. FINANCIAL RATIO ANALYSIS:

- Financial analysis is the process of evaluating businesses and other finance-related transactions to judge their performances.
- Financial analysis of a company is typically done using three distinct types of analysis: Trend Analysis, Comparative Analysis, and Industry Average Analysis.
- The most vital component used in almost every aspect is the financial ratios
- The Financial ratios help gain meaningful information about the company and help in performing quantitative analysis.
- As per corporate shareholdings filed for December 31, 2023, Ramco Industries Limited publicly holds 4 stocks with a net worth of over Rs 4,613.4 Crore

1. EPS (Earnings per Share Ratio): The Earnings per Share Ratio is another financial measure of the profit earned and observed by a company for each outstanding share of its common stock.

$$EPS = \frac{\text{Net Income}}{\text{Number of Shares Outstanding}}$$



- From the above Basic EPS (Earnings per share) graph, it can be said that the value has remained constant for over 5 months, although the effect was negative, it means the company was losing money. But late in December, its percentage rose from around -3% to +17%, which meant the company is making giant strides towards growth and development

2. Price to Earnings Ratio: The Price-Earnings Ratio measures the relative value of a company's stock compared to its market price per share to its earnings per share.

$$\text{P/E Ratio} = \frac{\text{Market Share Price}}{\text{Earnings Per Share (EPS)}}$$



From the above graph, it can be seen that the Price-to-Earnings ratio for Ramco Cements dipped massively during late September from 78 to 61, but since then, its value has been following a zigzag pattern from October to December. It again dipped significantly at the end of December, from around 68 to less than 62. The dip indicates that the stock price is low relative to earnings.

3. Dividend Payout Ratio: The Dividend Payout Ratio (DPR) is the amount of dividends paid to shareholders in relation to the total amount of net income the company generates.

$$\text{Dividend Payout Ratio} = \frac{\text{Dividend Per Share (DPS)}}{\text{Earnings Per Share (EPS)}}$$



From the above graph, it can be inferred that the dividend payout ratio, when expressed in percentage (%) has been constant since September, at 31.3%. This means that of the total earnings per share, 31.3% money has been used to pay dividends to the stakeholders.

- A dividend-payout ratio between 30%-50% is considered to be healthy and sustainable. Hence Ramco Cements fares well when it comes to paying the stakeholders while earning sufficient money.

4. Debt to Equity Ratio: The Debt to Equity ratio indicates the relative proportion of shareholders' debt and equity used to finance a company's assets. Debt can be generalized as a liability, so the formula becomes

$$\text{Debt to Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Shareholders' Equity}}$$



- The above graph suggests that the debt-to-equity ratio was around 0.65 until October 2023, eventually rising to 0.72. It has remained constant since then. This suggests that the company has is doing good, with debts being lesser than the equity it possesses.

5. Asset Turnover Ratio: The asset turnover ratio is a financial measure that shows how efficiently the company is using its owned resources to generate revenue or sales.

$$\text{Asset Turnover} = \frac{\text{Net Sales}}{\text{Total Assets}}$$



- The above graph suggests that the ratio is almost constant at 0.62 since late September. This indicates the company is using its assets efficiently. If the value goes higher, it indicates relatively more efficient use of assets while lower value suggests less efficient use of assets.

- The September - December 2023 period suggests that the company is working with its assets efficiently.

6. OVERALL CONCLUSION

- The fundamental analysis, as done above, includes an evaluation of the balance sheet, company stocks' recent performance, industry performance (i.e., the performance of the company compared to its industry competitors), and the analysis of some financial ratios
- From the detailed analysis given above, it can be said that the company's performance has been commendable and it has satisfied the investor with the returns, even though there was a slump in its performance in the middle of the financial year 2023-24.

TECHNICAL ANALYSIS

- Technical analysis is an integral part of the process that a trader employs, to analyze the performance of the company and gain insight into the supply and demand of securities and market psychology.
- Technical analysis is based on the fact that past trading activities and price changes of a security play a pivotal role in determining the security's future price and performance.
- The ultimate goal is to determine the direction of a given security's momentum and to attempt to profit from it.
- Here are some of the important indicators we used to evaluate the performance of The Ramco Cements' security price:
 1. RELATIVE STRENGTH INDEX
 2. AVERAGE DIRECTIONAL INDEX
 3. MOVING AVERAGES
 4. BOLLINGER BANDS

1. RSI (RELATIVE STRENGTH INDEX)

- RSI stands for Relative Strength Index. It's a technical analysis indicator used to measure the strength of a security's price action by comparing upward and downward price movements over a specified period.
- RSI values range from 0 to 100, with readings **above 70** indicating **overbought** conditions and readings **below 30** indicating **oversold** conditions.
- When the RSI is **below 50**, it suggests that the **selling pressure** on the asset is greater than the buying pressure, indicating a **bearish trend**.
- When the RSI rises **above 50**, the **buying pressure** is starting to overcome the selling pressure, indicating a potential shift towards a **bullish trend**.

INDICATOR ANALYSIS



Analysis Over September-October-November Time Period

- RSI was Above 70 during the Start of September showing overbought conditions due to which the RSI dropped till the middle of September. The same thing can be observed during the End of September till the Start of October
- First RSI divergence occurred near the Start of September 2023 and the RSI went below 50 until the start of October,
- Second RSI divergence occurred near the Middle of October 2023 and the RSI went below 50 until the End of October,
- This suggests that the downward momentum of the price trend continued and the asset may have experienced a prolonged period of selling pressure.
- RSI was Above 50 during the Start of October and November
- First RSI divergence occurred near the middle of October 2023 and the RSI went below 50 until the start of November,
- Second RSI divergence occurred near the Middle of November 2023 and the RSI went below 50 until the 28th of November,
- This suggests that the downward momentum of the price trend continued and the asset may have experienced a prolonged period of selling pressure

EXPECTATION

Since the price crossed **below** the 50 line which suggests that the **selling pressure** on the asset is **greater than the buying pressure** during September to November 28th period, it may indicate a BEARISH trend on November 29th

2. ADX(AVERAGE DIRECTIONAL INDEX):

- ADX is a technical indicator used to measure the strength of a trend.
- ADX quantifies the strength of a trend **regardless of its direction**. (Directionless)
- ADX Ranges between 0 and 100.
- ADX readings **below 20** indicate a weak trend with low directional momentum.
- ADX readings **above 50** indicate a strong trend with a high directional momentum.

INDICATOR ANALYSIS



EXPECTATION

Since the ADX value is **16.29** on 28th November we can see that it will show a relatively “**Weak**” trend from 29th November and will show relatively **low directional movement or momentum** in the market,as the value of ADX is **below 20**

3. MOVING AVERAGES

- Moving averages are a statistical tool used in finance and economics to analyze data points by creating a series of averages calculated over a specific period of time.
- They help to smooth out short-term fluctuations, allowing analysts to identify trends and patterns more easily.
- "Crossed X EMA" means that the price of the instrument has crossed above or below the X-day exponential moving average. This could indicate a change in trend or momentum.
- "Took support between X EMA & Y EMA" means that the price of the instrument has fallen to a level where it has found support between the X -day and Y -day exponential moving averages.
- "X EMA acting as resistance" means that the X-day exponential moving average is currently above the price of the instrument and is acting as a barrier to further upward movement.

INDICATOR ANALYSIS



Analysis Over September-October-November Time Period

- From September start to mid-September we can see that the price had crossed Above the 21 EMA which meant that it indicate a Bearish trend which we can observe towards the end of september
- Between 18th and 25th September we can observe that the price crosses and goes below the 200 EMA line which indicates that there is momentum in the market and is expected to be bullish
- From October start to mid-October we can see that the price had crossed Above the 21 EMA which meant that it indicate a Bearish trend which we can observe towards the end of october
- During October end and November start period the price crosses the 21 EMA line and takes support between 21 EMA and 50 EMA line where 50 EMA Line acts as resistance all the way till November start
- From November start to mid-November we can see that the price had crossed Above the 21 EMA which meant that it indicate a Bearish trend which we can observe towards the middle of November
- During Mid-November and End November period the price crosses the 100 EMA line and takes support between 100 EMA and 200 EMA line where 20 EMA Line acts as resistance all the way till November end
- At the end of november 28 we can see that the price has risen Above the 21 EMA line telling us that it will follow a bearish trend

EXPECTATION

Since the price crossed **Above** the 21EMA and 50EMA at 28th November and encountered resistance during November-end period, it will show a BEARISH trend on 29th November, with the possibility of further **downward** movement till it reaches the resistance line.

4. BOLLINGER BANDS

- Bollinger Bands is a technical analysis tool that consists of three lines on a chart, used to identify support and resistance levels and measure an asset's volatility.
- The **upper** and **lower** bands are **two standard deviations** away from the simple moving average line in the center.
- **Bearish burst** refers to a situation where the price of an asset appears to **rise above** the resistance level and rises above the **Upper Band** due to which the price falls to come back to the resistance level
- **Bullish breakout** refers to a situation where the price of an asset appears to **breaks below** the resistance level and falls below the **Lower Band** due to which the price Rises to come back to the resistance level
- If there is a massive gap between the bands the stock is very **volatile**.

INDICATOR ANALYSIS



Analysis Over September-October-November Time Period

- Price was above the Upper band at the start of September which would indicate a Bearish trend which can be observed till end of September
- At the End of September we can see that there is a huge gap between the upper and lower band and that the price was just below the lowerband suggesting a highly volatile Bullish expectation which can be observed till the middle of October
- At the End of October we can observe that the price is above upper band suggesting a Bearish trend
- At the End of October we can observe that the price is above upper band suggesting a Bearish trend which can be observed till the start of November
- From 11th of November the price falls way below the Lower band indicating a bullish burst which can be observed till Middle of November
- At the End of November we can observe that the price is above upper band suggesting a Bearish trend

EXPECTATION

Since the price crossed **below** the **lower band** till the Mid-October and mid-November period, it indicated a **Bullish trend** as the price would move up till it reached the resistance line, but at the end of November 28th we can see that the **price crossed the upper band** hence on November 29th it would show BEARISH trend as the stock price will fall towards the resistance level and as the bands are close to each other in this period the stock is not that volatile

OVERALL EXPECTATION

- From the above indicators, we can see that
 - RSI Divergence Indicator: BEARISH
 - ADX Indicator: WEAK
 - Moving Averages Indicator: BEARISH
 - Bollinger Bands Indicator: BEARISH
- Hence after the technical Analysis, we can see that for the next 1-2 Months the expected trend that the stock price will follow is “**WEAK BEARISH**”

OPTION TRADING STRATEGIES

1. BEAR CALL SPREAD(28 Dec Expiry)

- A bear call spread is a credit strategy used when the investor expects a moderate fall in the price of the underlying asset.
- An investor executes a bear call spread by buying a call option at a higher strike price and simultaneously selling another call option with the same expiration date at a lower strike price.

1x CE sell at strike = 980, option price = 46

1x CE buy at strike = 1150, option price = 3.9

POSITION

Current Stock Price	Risk-free Rate	Option Style	New	Save	Save as New			
993.25	7 %	European						
Buy / Sell	Quantity	Call / Put / Stock	Strike	Days to Expiry	Volatility, %	Premium	Debit / Credit	
Sell	1	Call	980	29	32.4468	46	46	✗
Buy	1	Call	1150	29	35.653	3.9	-3.9	✗
Total							42.1	

Inflow = 46

Outflow = 3.9

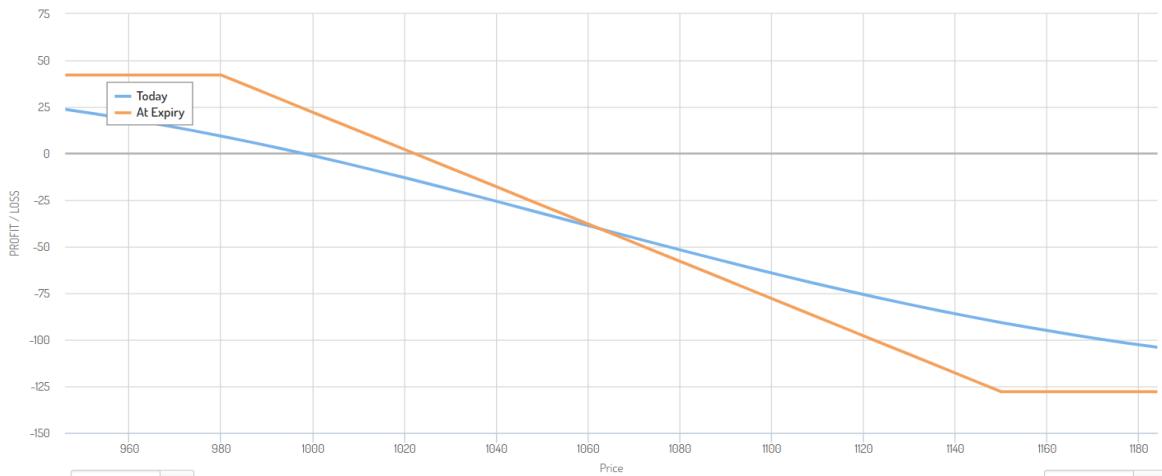
Earning from premium prices = 42.1

Maximum profit = 42.1/share

Maximum loss = 127.9/share

Breakeven price = 1022.1/share

P/L GRAPH



PAYOUT MATRIX

Position	ST < K1	K1 < ST < K2	ST > K2
Short Call K1	0	980-ST	980-ST
Long Put K2	0	0	ST-1150
Payoff	0	980-ST	-170
Net Profit/Loss	42.1	1022.1-ST	-127.9

Realized profit/Loss on 28th Dec

St = 1015.90

Profit = 1022.1 - St = 6.2Rs/share

2. SHORT STRADDLE(28th Dec expiry)

- A short strangle is an options trading strategy where a trader simultaneously sells a call option and a put option on the same underlying asset with different strike prices, but with the same expiration date. The strike prices are typically set above and below the current market price of the asset. This strategy is employed with the expectation that the underlying asset will experience little to no price movement, staying within the range of the two strike prices, until the options expire.
- Here's how it works:
 1. Selling the Call Option: By selling a call option, the trader receives a premium upfront. The call option gives the buyer the right, but not the obligation, to buy the underlying asset at the specified strike price before the expiration date. In a short strangle, the call option is typically sold with a strike price above the current market price of the asset, reflecting the trader's belief that the asset's price will not rise significantly.
 2. Selling the Put Option: Similarly, by selling a put option, the trader receives another premium upfront. The put option gives the buyer the right, but not the obligation, to sell the underlying asset at the specified strike price before the expiration date. In a short strangle, the put option is typically sold with a strike price below the current market price of the asset, reflecting the trader's belief that the asset's price will not decrease significantly.
 3. Profit Potential: The trader profits from a short strangle if the price of the underlying asset remains between the two strike prices until the options expire. In this scenario, both the call and put options expire worthless, and the trader keeps the premiums received from selling both options.

Traders employ the short strangle strategy for bearish expectations when they anticipate that the underlying asset's price will remain relatively stable or trade within a certain range. By selling both a call and put option, the trader benefits from the premiums received upfront, but also hopes to profit from time decay and a decrease in the options' value as the expiration date approaches, given that neither option is exercised if the asset price stays within the predetermined range. This strategy can be particularly advantageous in a sideways or neutral

market environment, where there is limited volatility and little directional movement in the price of the underlying asset

MOTIVATION BEHIND CHOOSING SHORT STRADDLE:

As a student, I chose a short straddle for Ramcocem stock options based on technical analysis indicating a period of consolidation and low volatility. By selling both a call and put option with strike prices close to the current market price, I aim to profit from the stock remaining range-bound. This strategy capitalizes on the anticipated lack of significant price movement, leveraging time decay and the erosion of option premiums.

Spot price (on 29th NOV) = 993.25Rs

POSITION

Current Stock Price	Risk-free Rate	Option Style	New	Save				
993.25	2 %	European						
Buy / Sell	Quantity	Call / Put / Stock	Strike	Days to Expiry	Volatility, %	Premium	Debit / Credit	
Sell	1	Put	980	29	47.913	46	46	✗
Sell	1	Call	1000	29	30.8359	32	32	✗
Total							78	

INFLOW = C1 +C2 = 78Rs

Breakeven points:

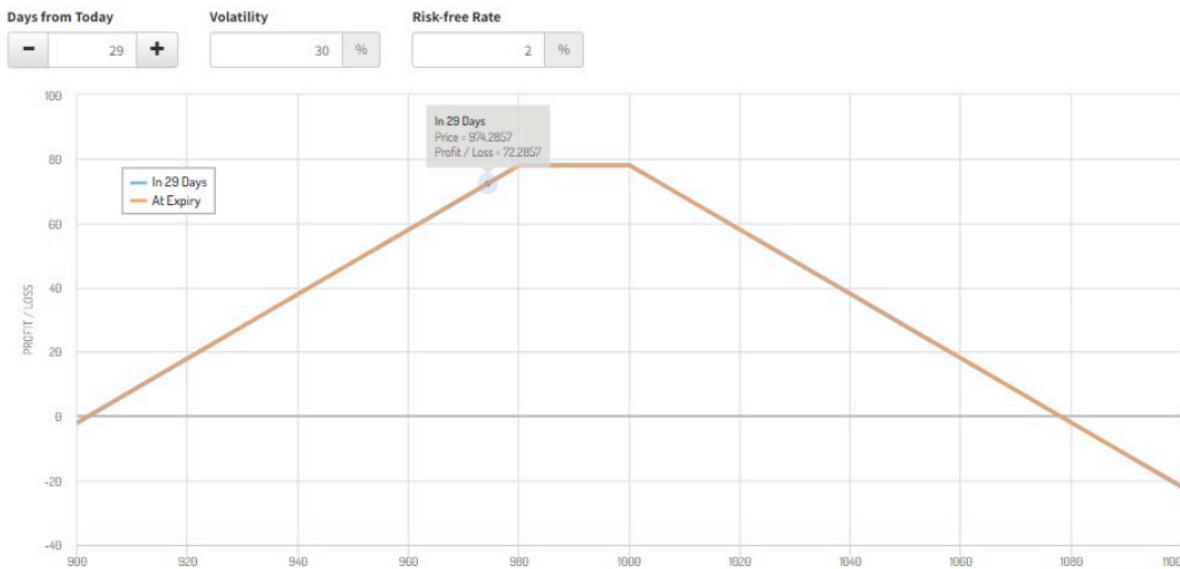
Break Even point 1=902

Break Even point 2=1078

Max Profit =78

Max Loss = Infinite

P/L GRAPH



PAYOUT MATRIX

Position	ST < 980	980 < ST < 1000	ST > 1000
Short Put (K1)	ST - 980	0	0
Short Call (K2)	0	0	1000 - ST
PAYOUT	ST - 980	0	1000 - ST
PROFIT/LOSS	ST - 902	78	1078 - ST

REALIZED PROFIT

ST = 1015.90

Profit/Loss = 1078 - ST = 62.1 Rs/share

3. REVERSE JADE LIZARD (28th Dec expiry)

The Reverse Jade Lizard is a trading approach in options involving the sale of a put and a call option, along with the purchase of a put option. Here's how it works:

1. Selling an out-of-the-money put option allows the trader to gain a premium, benefiting from time decay and a decline in the underlying stock's price. If the stock price remains above the sold put's strike price at expiration, the put option expires worthless, and the trader keeps the premium.
2. Selling an out-of-the-money call option also results in premium collection, providing limited upside potential and acting as a hedge against the short put.
3. Buying a higher strike price put option serves to mitigate the risk of unlimited losses from the short call option. This long put option limits potential gains but offers protection in case the stock price rises significantly.

The Reverse Jade Lizard strategy aims for profit when the underlying asset's price stays within a specified range, typically between the strike prices of the put and call options sold. However, if the underlying asset's price surpasses the higher strike price of the call option, the trader's losses can potentially be unlimited.

POSITION

Current Stock Price	Risk-free Rate	Option Style	New	Save	Save as New			
993.25	7 %	European						
Buy / Sell	Quantity	Call / Put / Stock	Strike	Days to Expiry	Volatility, %	Premium	Debit / Credit	
Sell	1	Call	1150	29	35.653	3.9	3.9	✗
Sell	1	Put	1000	29	29.7104	33.8	33.8	✗
Buy	1	Put	980	29	30.0718	24.75	-24.75	✗
Total							12.95	

Inflow = 3.9+33.8 = Rs.37.7

Outflow= Rs.24.75

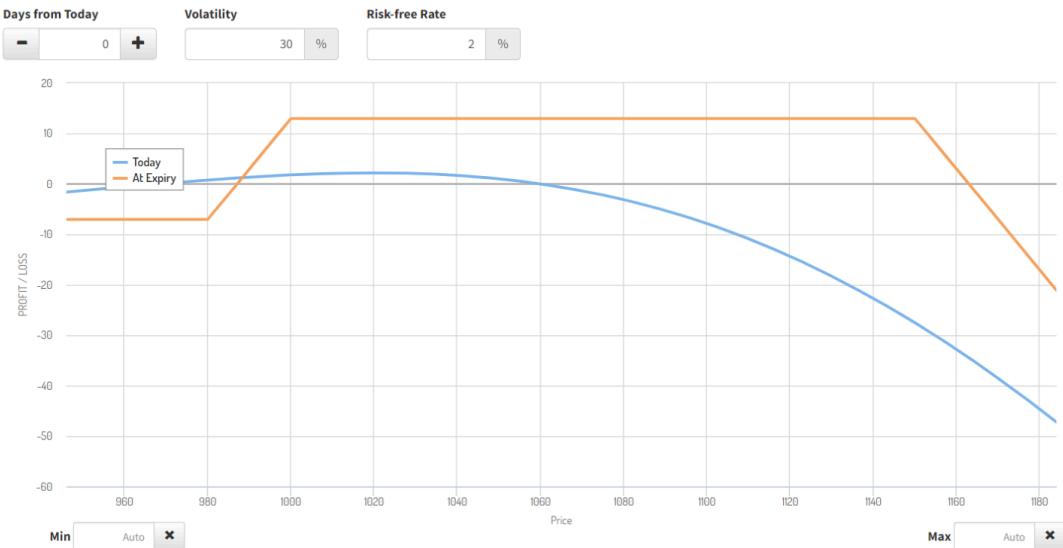
Total Earnings from Premium Prices= Rs.12.95

Maximum Profit=Rs.12.95/share

Maximum Loss= unlimited

Breakeven Price= Rs.986.8/share

P/L GRAPH



PAYOUT MATRIX

Position	$ST \leq 980$	$980 \leq ST \leq 1000$	$1000 < ST \leq 1150$	$ST > 1150$
Short Call	0	0	0	$1150 - ST$
Short Put	$ST - 1000$	$ST - 1000$	0	0
Long Put	$980 - ST$	0	0	0
Payoffs	-20	$ST - 1000$	0	$1150 - ST$
Profits	-7.05	$ST - 987.05$	12.95	$1162.95 - ST$

Realized Profit:

$ST = 1015.90$

Profit/loss = 12.95/share

4.SHORT IRON CONDOR SPREAD (25th Jan expiry)

- The short iron condor is a combination of two vertical spreads: a *bear call spread* and a *bull put spread*. The strategy consists of four option contracts, all with the same expiry date(25 Jan in this case).
- If the current underlying stock price is S, then:

Step 1: Purchase OTM put option with strike price K1 such that $K1 < S$. This put option serves to establish a floor, limiting potential downside risk.

Step 2: Sell one OTM put option with a strike price K2 closer such that $K1 < S$, but K1 is closer to S. By selling this put option, you collect a premium and generate income.

Step 3: Sell one OTM call option with a strike price K3 such that $K3 > S$. This call option sale generates additional premium income and establishes an upper boundary for potential profit.

Step 4: Purchase one OTM call option with a strike price K4 such that $K4 > S$, but K4 is further away from S. This call option acts as a protective measure against significant upside movement in the stock price, limiting potential losses on the call side of the trade.

To sum up:

$$K1 < K2 < S < K3 < K4$$

Here, underlying asset price(S) = 993.25

1x PE buy at strike = 910, option price = 25.95

1x PE sell at strike = 950, option price = 44.44

1x CE sell at strike = 1020, option price = 0.05

1x CE buy at strike = 1070, option price = 1.3

Position;

Buy / Sell	Quantity	Call / Put / Stock	Strike	Days to Expiry	Volatility, %	Premium	Debit / Credit	
Buy	1	Put	910	57	39.6669	25.95	-25.95	✗
Sell	1	Put	950	57	42.5221	44.44	44.44	✗
Sell	1	Call	1020	57	2.6806	0.05	0.05	✗
Buy	1	Call	1070	57	11.7694	1.3	-1.3	✗
Total							17.24	

Inflow = 44.49

Outflow = -27.25

Earning from premium prices = 17.24

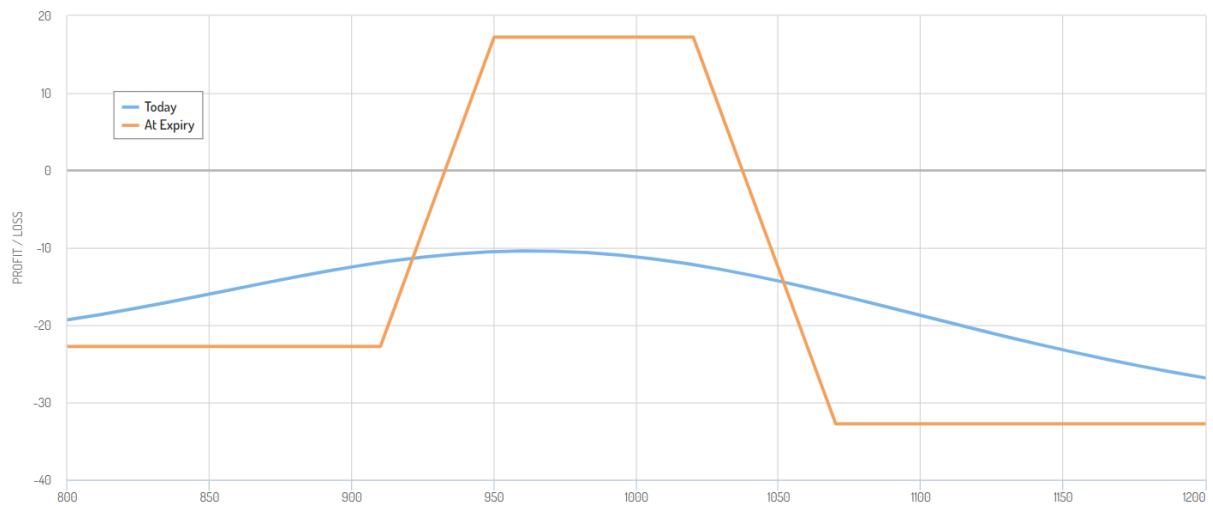
Maximum profit = 17.24/share

Maximum loss = 32.76/share

Breakeven price(1) = 950 - 17.24 = 932.76

Breakeven price(2) = 1020 + 17.24 = 1037.24

P/L GRAPH



PAYOFF MATRIX

Position	St<910	910<St<950	950<St<1020	1020<St<1070	St>1070
Short Put	St-950	St-950	0	0	0
Long Put	910-St	0	0	0	0
Short Call	0	0	0	1020-St	1020-St
Long Call	0	0	0	0	St-1070
Payoff	-40	St-950	0	1020-St	-50
Net Profit/Loss	-22.76	St-932.76	17.24	1002.76-St	-32.76

REALIZED PROFIT/LOSS

ST = 968.86 , 950 < (ST=968.86) < 1020

Profit= 17.24Rs /Share

5. RISK-GUARD STRATEGY (25th Jan expiry)

In this strategy, we buy 2 puts and sell 2 puts, with different strike prices. This strategy is highly profitable for small-range bearish and gives very little profits for any sort of increase in stock prices, and in case of a huge dip in stock prices, the maximum loss will be the premium paid for the long put with a lesser strike price.

This strategy is inspired from the Jade lizard strategy, the only difference being that it is insured against losses, with the help of an OTM long put option with a much lower strike price. It protects us from huge falls in stock prices, and in case of rising prices, we can still get minimal profits from the sale of put options.

SETUP:

- Buy two OTM, put options with Strike prices K1 and K2.
- Sell two OTM put options with Strike prices K3 and K4.
- The conditions to be followed about the strike prices are, $K1 > K3 > K4 > K2 < S$
- This strategy is used by the traders who are slightly bearish about the underlying price of the asset. An investor executes a Protective Jade lizard strategy when they are slightly bearish about stock and want to insure against unlimited losses, in contrast to the Jade lizard strategy. This can also be considered a neutral strategy because it gives minimal profits for bullish movements in the stock price.

We set this up by,

- A) Buy 1X PE at strike K1= 990, option price= 56.4
- B) Sell 1X PE at strike K3= 960, option price= 44.4
- C) Sell 1X PE at strike K4=930, option price= 32.66
- D) Buy 1X PE at strike K2= 880, option price= 17.9

POSITION

Buy / Sell	Quantity	Call / Put / Stock	Strike	Days to Expiry	Volatility, %	Premium	Debit / Credit	
Buy ▼	1	Put ▼	990	58	39.9976	56.4	-56.4	✗
Sell ▼	1	Put ▼	960	58	41.1425	44.4	44.4	✗
Sell ▼	1	Put ▼	930	58	40.9754	32.6	32.6	✗
Buy ▼	1	Put ▼	880	58	40.7637	17.9	-17.9	✗
Total							2.7	

Inflow = 44.4+32.6 = 77

Outflow= 56.4+17.9=74.3

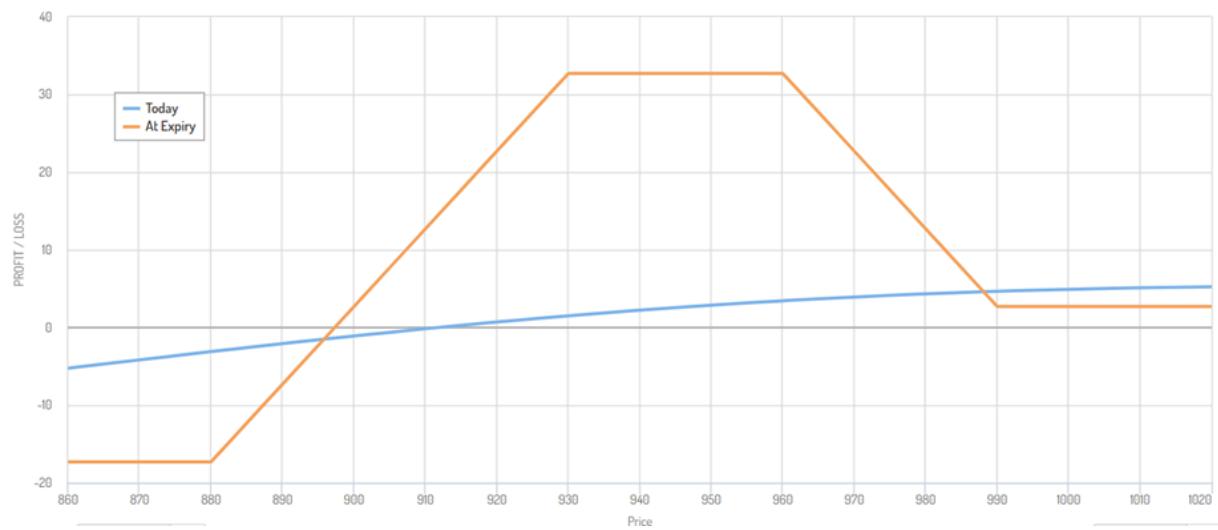
Total Earnings from Premium Prices= 2.7

Maximum Profit=32.7/share

Maximum Loss= -17.3/share

Breakeven Price= 897.3/share

P/L GRAPH



PAYOUT MATRIX

Position	ST<880	880<ST<930	930<ST<960	960<ST<990	K>990
Long Put(A)	990-ST	990-ST	990-ST	990-ST	0
Short Put(B)	ST-960	ST-960	ST-960	0	0
ShortPut (C)	ST-930	ST-930	0	0	0
Long Put (D)	880-ST	0	0	0	0
Total Payoff	-20	ST-900	30	990-ST	0
Profit Payoff	-17.3	ST-897.3	32.7	992.7-ST	2.7

Realized Profit/Loss

Stock Price on 25th Jan 2024 = 968.86

Realized Profit= 992.7-ST= 992.7-968.86= Rs.23.84/share.

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