

Capstone Project: Equity Hedging Using Derivatives for Mr. A

1. Objective

We have been asked to carve out a derivatives-based hedging strategy for Mr. A, who holds certain Long equity positions as per data provided below to cover his market exposure. The requirements of the project is enunciated below:

- Perform hedging strategy using Futures and Options separately.
- Make a pay-off diagram in both Futures and Options cases.
- Calculate breakeven point and profit and loss using option strategy.
- Perform calculations using Excel and write a detailed process in Word document.

2. Given data & Hedging Assumptions

Given Data:

Table: A

Stock Name	Symbol	Markets	Purch. Qty.	Purch. Price	Cost
Ashok Leyland	ASHOKLEY	NSE, India	5,000	180	9,00,000
Larsen & Toubro	LT	NSE, India	300	2,600	7,80,000
Total Exposure					16,80,000

There was a corporate action in Ashok Leyland on 16th July 2025 (Record/effective date) by which company announced bonus in the ratio of 1:1. The revised holdings considering the corporate action is as below along with comparison with Current market prices (CMP) and Gains/(Losses) as on the date of creation of Hedging strategy for ascertaining the exposure required to be hedged (Highlighted in green color).

Revised Base Data considering Corporate Action:

Table: B

Stock Name	Symbol	Markets	Purch. Qty.	Purch. Price	Cost	CMP	Current Value	Gains/(Losses)
Ashok Leyland	ASHOKLEY	NSE, India	10,000	90	9,00,000	122	12,19,000	3,19,000
Larsen & Toubro	LT	NSE, India	300	2,600	7,80,000	3,659	10,97,760	3,17,760
Total Exposure					16,80,000		23,16,760	6,36,760

Since we have to carve out the hedging strategy now wherein Mr. A is already standing on a gain of INR 6,36,760, the hedging exposure considered in the strategy is portfolio value at CMP which is INR 23,16,760.

Please note the expiry of Aug'25 has been considered for Futures/Options as it has greater market depth and participation as against Sep'25 expiry.

Hence the strategy created uses current market data with August 2025 expiry to minimize downside risk while maintaining upside exposure where desirable to be prudent.

3. Hedging Strategy using Futures and Options separately

The August 2025 expiry Futures and Options can be selected for hedging purposes. Any of the below two instruments can be used:

- **Short Futures** (Sell): to fully hedge downside at current price; or,
- **Long Put Options** (Buy): to hedge downside while allowing for upside gains

Following contracts can be used for Hedging purposes using either Futures or Options strategies.

Table: C

Name of stock	Ashok Leyland		Larsen & Toubro	
Symbol	ASHOKLEY	ASHOKLEY	LT	LT
Type of Hedging	Futures	Options	Futures	Options
Action	SELL	BUY PUT	SELL	BUY PUT
Lot size	5000	5000	175	175
Exposure Qty. to be covered	10000	10000	300	300
No. of minimum Lots required	2	2	2	2
CMP (30th July closing)	121.9	121.9	3659.2	3659.2
Last Traded Price (Aug expiry Futures as on 30th July)	122.55		3677	
Closest Strike price (With Good Volume)		130		3800
LTP Put Option Premium		8.25		155.7

Although the CMP of Ashok Leyland is INR 121.9, options strike price has been chosen as INR 130 with premium of INR 8.25 so as to arrive closest to CMP on net basis and avoid major loss

Similarly, although the CMP of Larsen & Toubro is INR 3659.2, options strike price has been chosen as INR 3800 with premium of INR 155.7 so as to arrive closest to CMP on net basis and avoid major loss

The breakeven price for the put options were calculated as:

- Ashok Leyland: ₹130 - ₹8.25 = ₹121.75 (close to Actual CMP of INR 121.9)
- L&T: ₹3,800 - ₹155.7 = ₹3,644.3 (close to Actual CMP of INR 3659.2)

For Futures, Last traded price as on 30th July 2025 of Aug Expiry has been taken for hedging for ease of reference basically to avoid fluctuations in prices during the market hours.

5. Profit & Loss & Pay-off computation using both Futures & Options:

Payoff profiles have been constructed to show:

- Stock-only exposure
- Futures-hedged exposure
- Options-hedged exposure
- Net payoff combining stock and Futures and Stocks and options in either scenarios as below

Ashok Leyland

Payoff Computation	A	B	C= A+B	D	E	F = A + D - E
Expiry day price	Stock PnL	Futures PnL	Net Payoff-Futures	Options PnL	Options Premium	Net Payoff-Options
80	-419000	425500	6500	500000	82500	-1500
90	-319000	325500	6500	400000	82500	-1500
100	-219000	225500	6500	300000	82500	-1500
110	-119000	125500	6500	200000	82500	-1500
120	-19000	25500	6500	100000	82500	-1500
130	81000	-74500	6500	0	82500	-1500
140	181000	-174500	6500	0	82500	98500
150	281000	-274500	6500	0	82500	198500
160	381000	-374500	6500	0	82500	298500
170	481000	-474500	6500	0	82500	398500
180	581000	-574500	6500	0	82500	498500
190	681000	-674500	6500	0	82500	598500
200	781000	-774500	6500	0	82500	698500
210	881000	-874500	6500	0	82500	798500
220	981000	-974500	6500	0	82500	898500

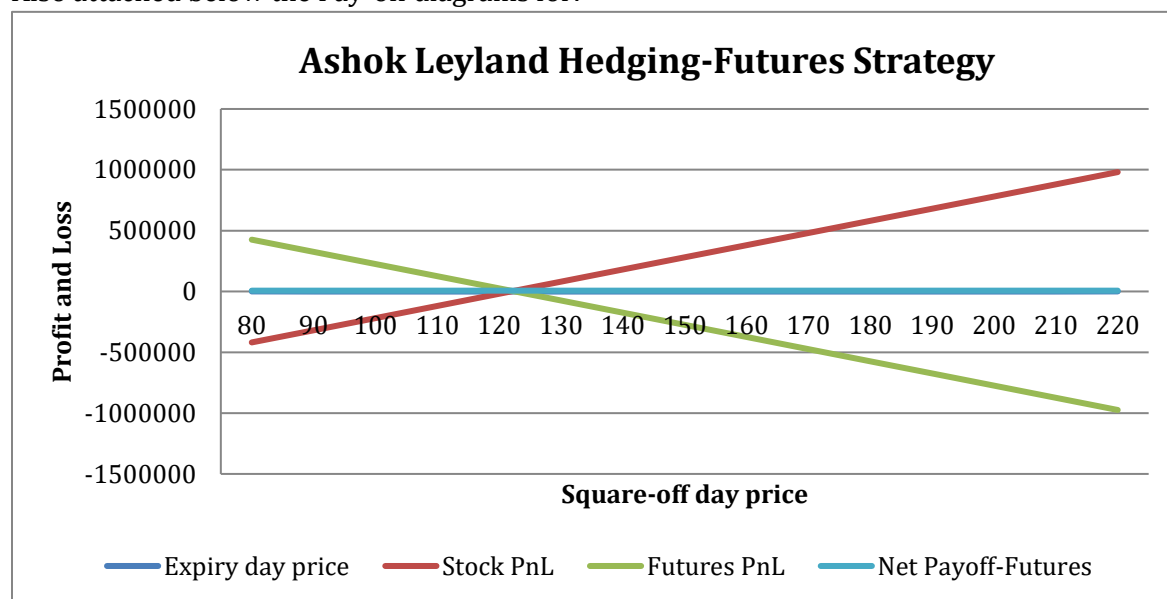
(Green highlighted cells show downside protection to price under options)

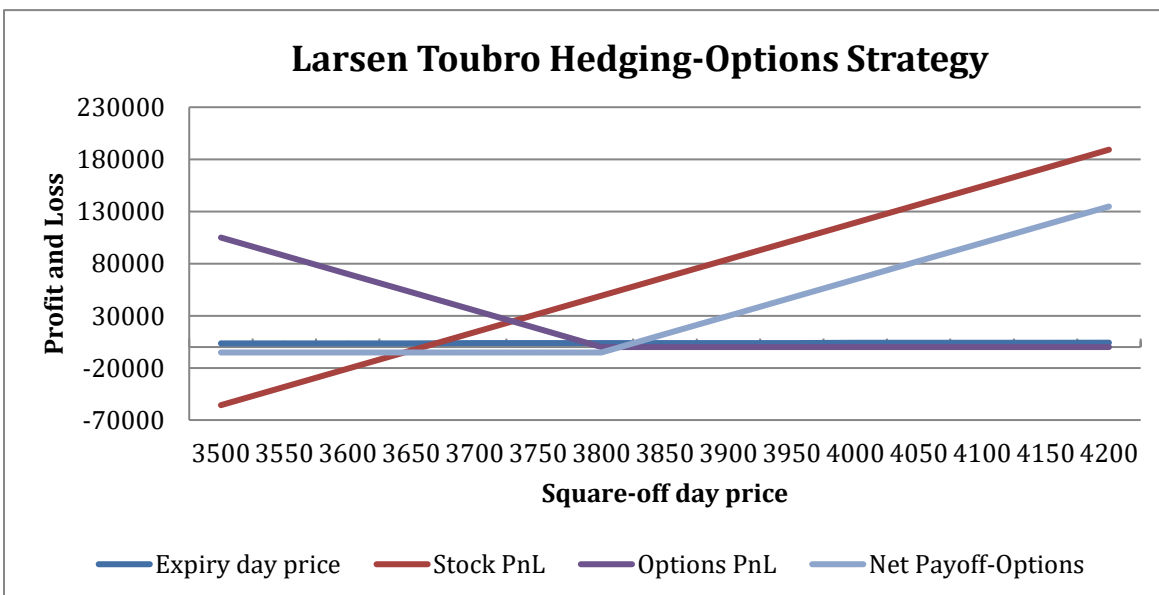
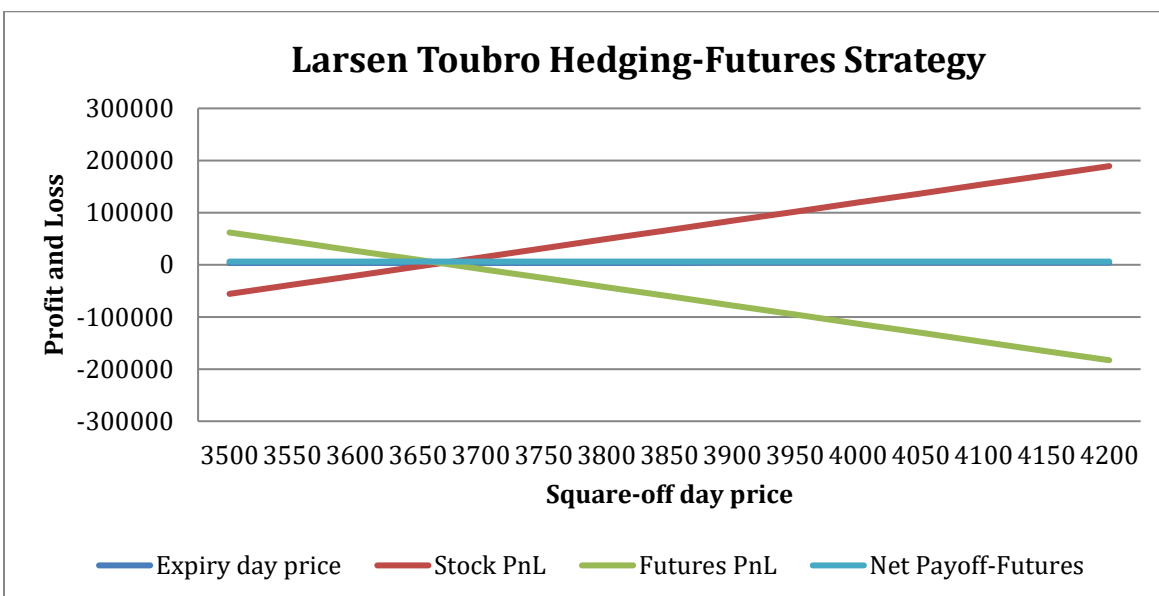
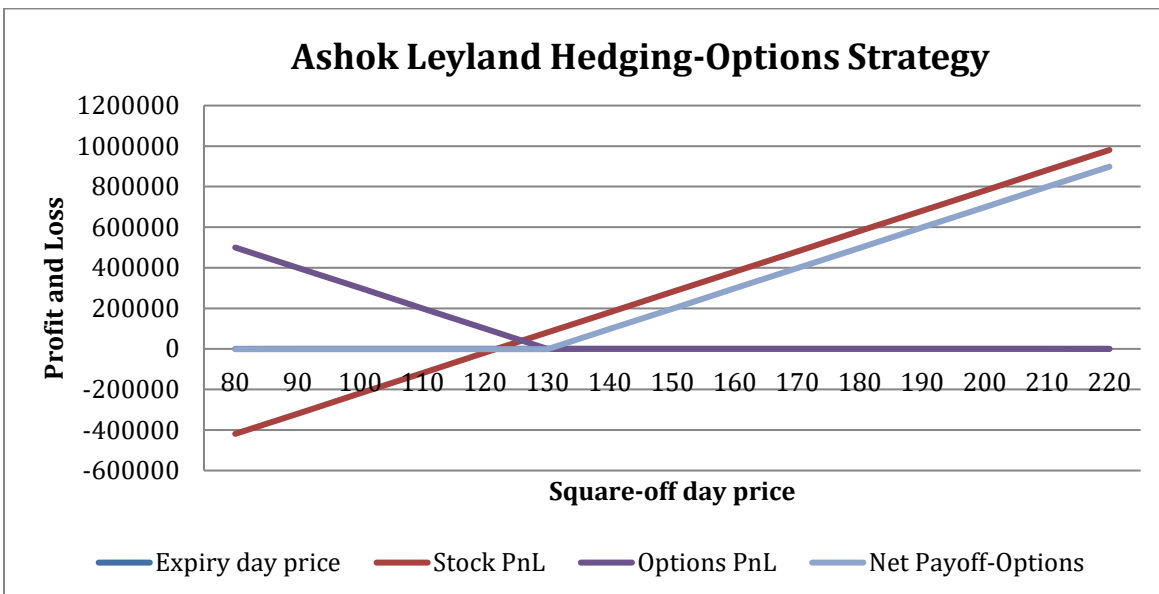
Larsen & Tourbo

Payoff Computation	A	B	C= A+B	D	E	F = A + D - E
Expiry day price	Stock PnL	Futures PnL	Net Payoff-Futures	Options PnL	Options Premium	Net Payoff-Options
3500	-55720	61950	6230	105000	54495	-5215
3550	-38220	44450	6230	87500	54495	-5215
3600	-20720	26950	6230	70000	54495	-5215
3650	-3220	9450	6230	52500	54495	-5215
3700	14280	-8050	6230	35000	54495	-5215
3750	31780	-25550	6230	17500	54495	-5215
3800	49280	-43050	6230	0	54495	-5215
3850	66780	-60550	6230	0	54495	12285
3900	84280	-78050	6230	0	54495	29785
3950	101780	-95550	6230	0	54495	47285
4000	119280	-113050	6230	0	54495	64785
4050	136780	-130550	6230	0	54495	82285
4100	154280	-148050	6230	0	54495	99785
4150	171780	-165550	6230	0	54495	117285
4200	189280	-183050	6230	0	54495	134785

(Green highlighted cells show downside protection to price under options)

Also attached below the Pay-off diagrams for:





6. Strategic Insights

- Futures hedging

- Fully protects downside but forgoes all upside.
- Since we have shorted the futures, in case price on Expiry date is below the hedged target price, the profit from futures would be offset by losses in Stock P&L (cash market) and vice versa, thereby hedging the positions as evident from table above and payoff diagrams

- Options hedging

- Costs a premium but allows for profits beyond strike price
- Since we have bought Put options, in case expiry date price is below the strike price, the profit from exercising the Put options net off amounts paid towards premium for purchase of options would be used to majorly square off against losses made in the stocks cash market and vice versa thereby hedging the positions as evident from table above and payoff diagrams

- Depending on Mr. A's risk tolerance and market view, selective use of either strategy is recommended.

7. Conclusion

The strategy was executed using NSE data at current market prices as of July 30, 2025. Futures provide perfect downside protection, while options offer flexible protection with upside potential. The analysis supports a well-informed hedging decision tailored to Mr. A's exposure and investment goals wherein initial gains of INR 6,36,760 made before entering into hedging strategies (Refer Table B) is majorly protected.