

10.6 PAYOFF CHARTS FOR LONG STRADDLE



Explainer Video

For instance, a person buys a lot size of 100 shares of XYZ at the money call option and put option at a Strike price of ₹400.

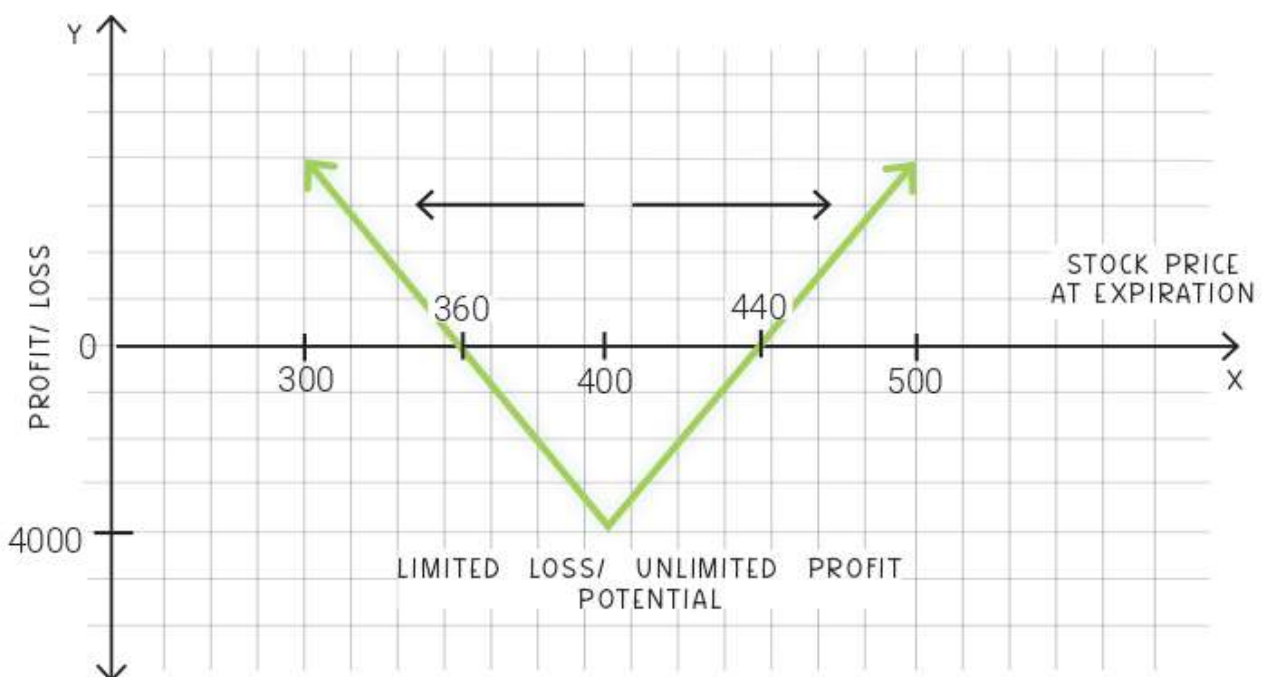
The premium for call = ₹19.

The premium for put = ₹21.



The total premium = ₹40 (₹19 + ₹21) x 100 (lot size)
= ₹4000 (Maximum Loss).

Therefore, the break-even range = ₹360 (₹400 – ₹40) to ₹440 (₹400 + ₹40).



The following is the graphical representation of a Long Straddle Option. The X-axis shows Profit or Loss. The Y-axis shows Stock Price at expiration.

Let us assume different price Scenarios:

MARKET PRICE ON EXPIRY	NET PROFIT/ LOSS	EXPLANATION
₹500	<p>Call Payoff $= ₹500 - ₹400$ $= ₹100$</p> <p>Profit from Call $= ₹100 \times 100$ $= ₹10,000$</p> <p>Net profit = Call profit - Total Premium $= ₹10,000 - ₹4000$ $= ₹6000$</p>	The call option is exercised. Put Option is not exercised here. The call would give a payoff of ₹100, profit of ₹10,000 and net profit will be ₹6000.
₹300	<p>Put Payoff $= ₹400 - ₹300$ $= ₹100$</p> <p>Profit from Put $= ₹100 \times 100$ $= ₹10,000$</p> <p>Net profit = Put profit - Total Premium $= ₹10,000 - ₹4000$ $= ₹6000$</p>	The call option is not exercised. However, the put is exercised. The put would give a payoff of ₹100, profit of ₹10,000 and net profit will be ₹6000.
₹420	<p>Call Payoff $= ₹420 - ₹400$ $= ₹20$</p> <p>Profit from Call $= ₹20 \times 100$ $= ₹2000$</p> <p>Net Loss = Call profit - Total Premium $= ₹2000 - ₹4000$ $= (₹2000)$</p>	The call option is exercised. However, the put is not exercised. The call would give a payoff of ₹20, profit of ₹2000. So the total loss incurred here is ₹2000 after the payout from call option.

As we can see from the payoff charts as well, the maximum losses are at the strike price of both the options. As we move in either direction, the losses begin to reduce and after the break-even point, we move into profits.

10.7 PAYOFF CHARTS FOR SHORT STRADDLE



Explainer Video

For instance, a person sells a lot size of 100 shares of XYZ at the money call option and put option at a Strike price of ₹400.

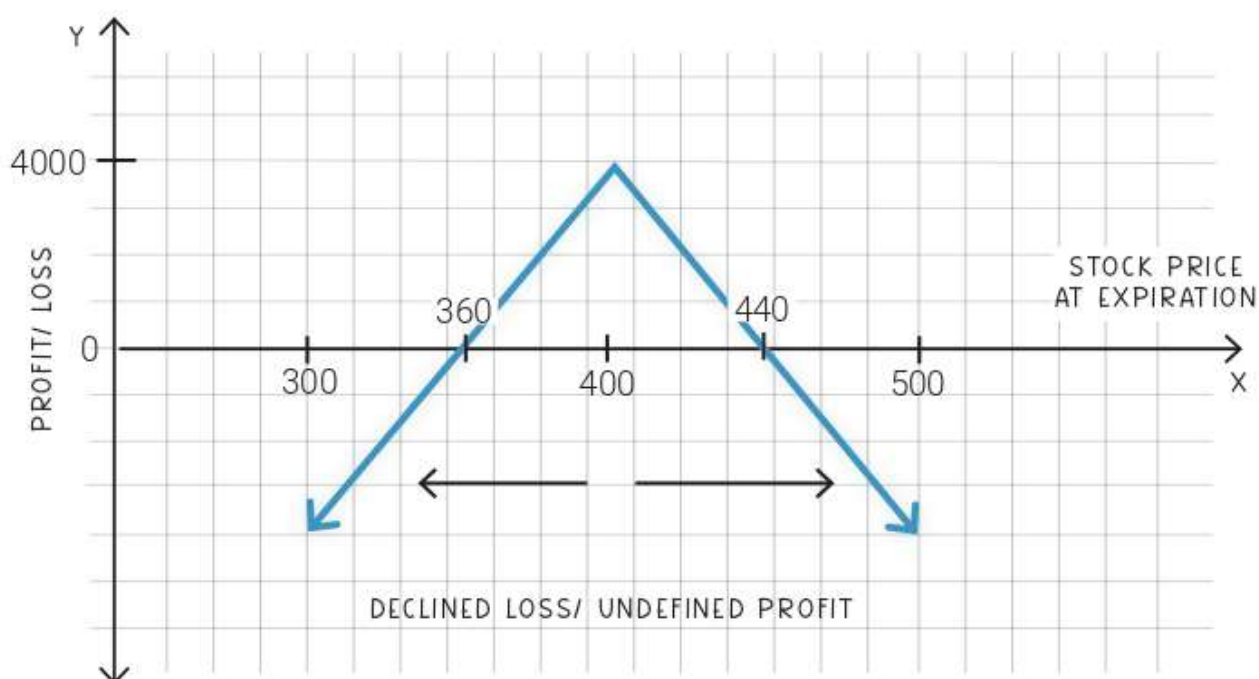
The premium for call = ₹19.

The premium for put = ₹21.



The total premium = ₹40 (₹19 + ₹21) x 100 (lot size)
= ₹4000 (Maximum Profit)

Therefore, the limited profit range = ₹360 (₹400 – ₹40) to ₹440 (₹400 + ₹40).



The following is the graphical representation of a Long Straddle Option. The X-axis shows Profit or Loss. The Y-axis shows Stock Price at expiration.

Let us assume different price Scenarios:

MARKET PRICE ON EXPIRY	NET PROFIT/ LOSS	EXPLANATION
₹500	<p>Call Payoff $= ₹500 - ₹400$ $= ₹100$</p> <p>Loss from Call $= ₹100 \times 100$ $= ₹10,000$</p> <p>Net Loss = Call Loss - Total Premium $= ₹10,000 - ₹4000$ $= ₹6000$</p>	The call option is exercised. Put Option is not exercised here. The call would take an obligated a payoff of ₹100, loss of ₹10,000 and net loss will be ₹6000.
₹300	<p>Put Payoff $= ₹400 - ₹300$ $= ₹100$</p> <p>Loss from Put $= ₹100 \times 100$ $= ₹10,000$</p> <p>Net Loss = Put Loss - Total Premium $= ₹10,000 - ₹4000$ $= ₹6000$</p>	The call option is not exercised. However, the put is exercised. The put would take an obligated payoff of ₹100, Loss of ₹10,000 and net loss will be ₹6000.
₹420	<p>Call Payoff $= ₹420 - ₹400$ $= ₹20$</p> <p>Loss from Call $= ₹20 \times 100$ $= ₹2000$</p> <p>Net Profit = Call loss - Total Premium $= ₹2000 - ₹4000$ $= ₹2000$</p>	The call option is exercised. However, the put is not exercised. The call would take an obligated payoff of ₹20, So, the losses due to call payout would be ₹2000. The net profit would be reduced to ₹2000 after the payoff.

As we can see, the maximum profits are the strike price. As we move in either direction, the profits start to decrease. Outside the range of break-even points, the profits turn into losses and we have potential for unlimited losses as we are selling options.