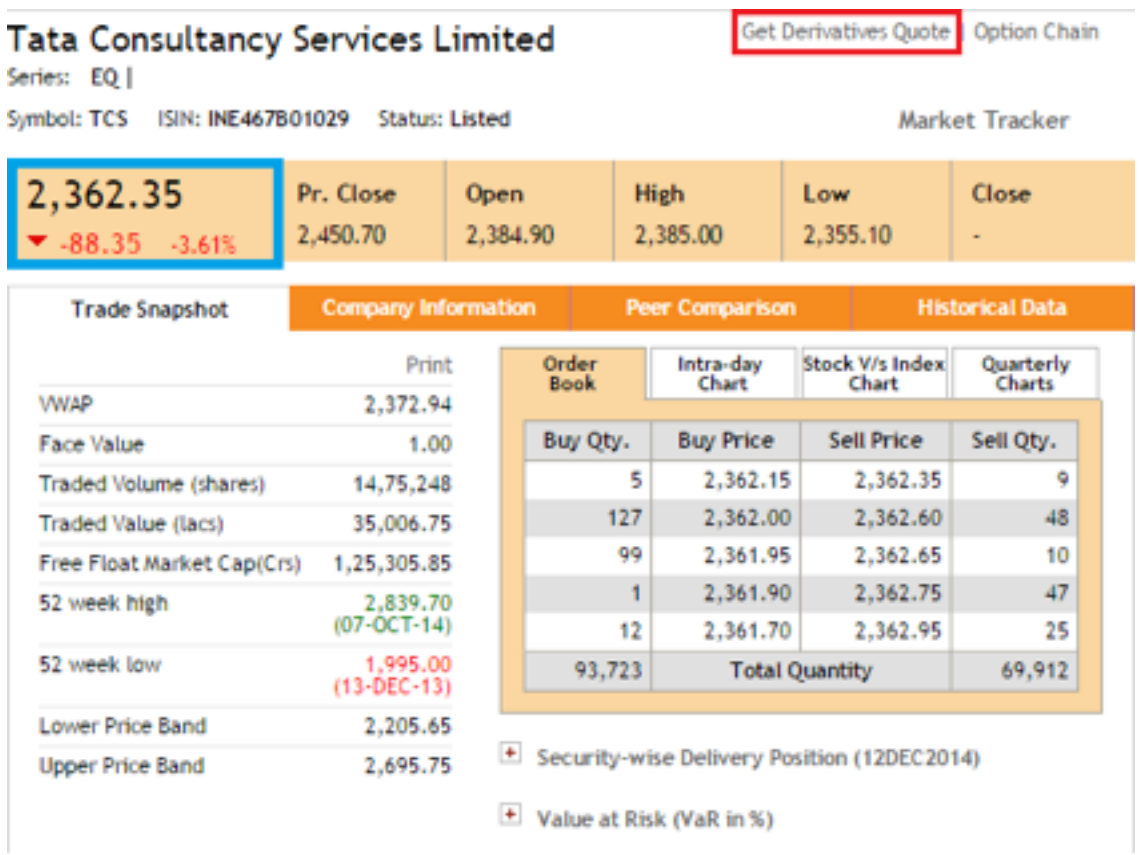
CHAPTER 3

The Futures Trade

3.1 – Before the Trade

In the last chapter, we learnt various concepts related to the futures market. **Remember, the motivation for any trader entering into a futures agreement is to benefit financially, and for which the trader needs to have a directional view on the price of the underlying asset**. Perhaps it is time we take up a practical example of a futures trade to demonstrate how this is done. Also, I guess we should move away from the Gold example and look into an example related to the stocks.

Today (15th Dec 2014) the management of Tata Consultancy Services (TCS), a leading Indian Software Company had an investors meet, wherein the TCS management announced that they are cautious about the revenue growth for the December Quarter. The markets do not like such cautious statements, especially from the company's management. After the statement, the markets reacted to it and as we can see from the TCS's spot market quote, the stock went down by over 3.6%. In the snapshot below, the price per share is highlighted in blue. Ignore the red highlight, we will discuss about it shortly.

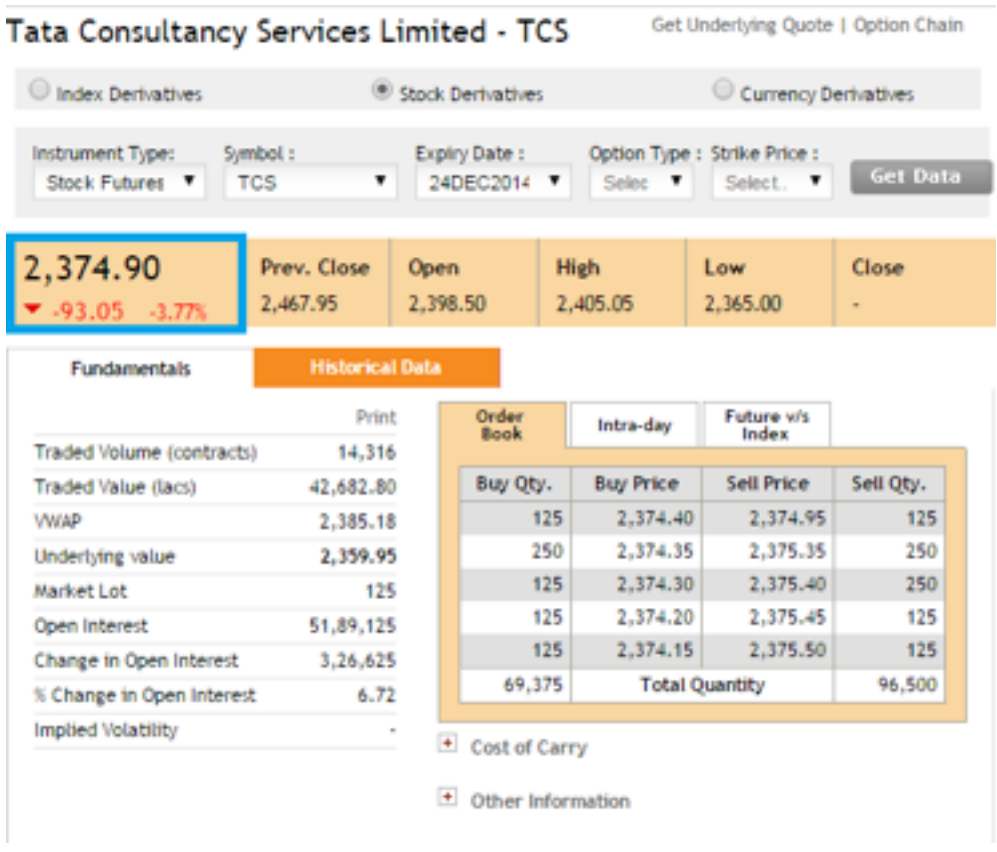


I as trader believe that, the TCS stock price reaction to the management's statement is a bit exaggerated. Here is my rational – If you follow TCS or any Indian IT sector company in general, you will know that December is usually a lackluster month for the Indian IT companies. December is the financial year end in the US (the biggest market for the Indian IT companies), and also the holiday season, hence the business moves quite slowly for such companies. This furlough has a significant impact on the IT sector revenues. This information is already known and factored in by the market. Hence, I believe the stock sinking by 3.6% is unwarranted for. I also feel this could be an opportunity to buy TCS, as I believe the stock price will eventually go up. Hence I would be a buyer in TCS after such an announcement.

Notice, based on my thoughts (which I perceive as rational) I have developed a **'directional view'** on the price of the asset (TCS). From my analysis, I believe the TCS (underlying asset) stock price will increase in due course of time. In other words, I am bullish about TCS at the current market price.

Now, instead of buying TCS shares in the spot market, I decide to buy the TCS Futures (for reasons I will discuss in the next chapter). Having decided to buy futures, all I need to see is price at which the TCS Futures is trading at. The contract details are readily available on the NSE's website. In fact, the link to get details for a TCS futures contract is available on the spot market quote. I have highlighted the same in red in the image above.

Recall, the futures price should always mimic the spot price, meaning if the spot price has gone down, the futures price should also go down. Here is a snapshot from NSE's website showing the TCS Futures price.

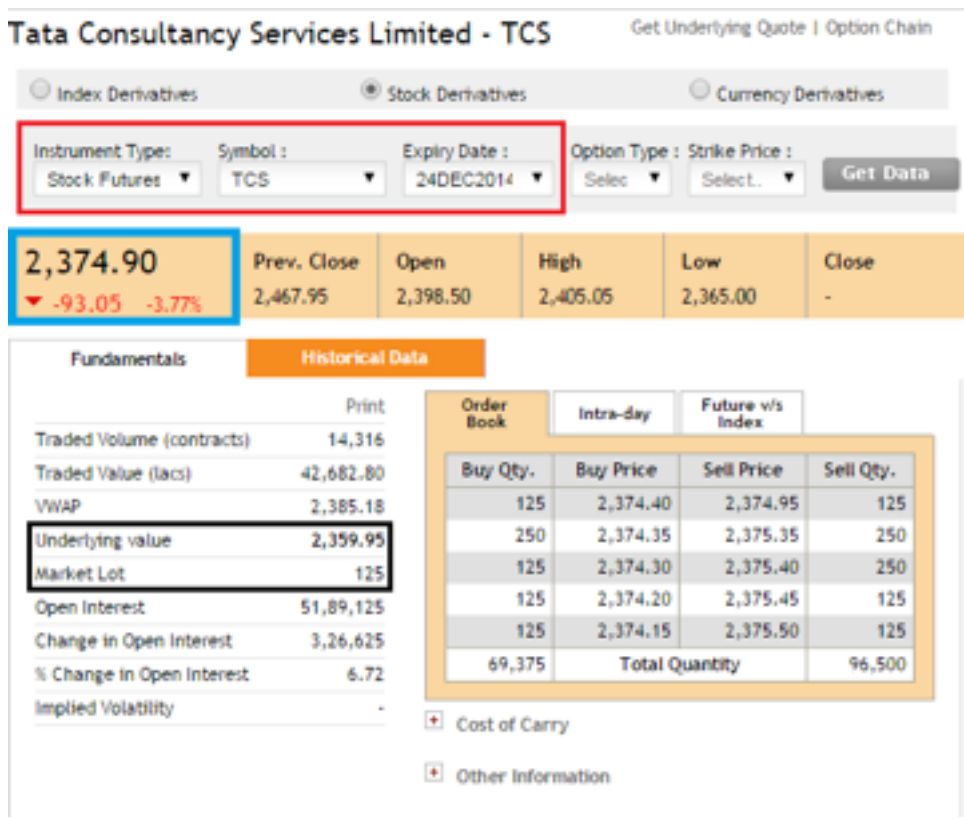


As expected, the futures price has mimicked the spot price and therefore the TCS Futures is also down by 3.77%. You may have two questions at this point –

1. TCS in the spot market is down by 3.61%, however TCS futures is down by 3.77%? Why the difference?

2. TCS spot price is at Rs.2362.35, but Futures price is at Rs.2374.90? Why the difference?

Both these are valid questions at this point, and the answer to these questions depends upon the "Futures Pricing Formula", a topic we will deal with at a later point in time. But the most important point to note at this stage is that, the futures price has moved in line with the spot price, and both of them are down for the day. Now, before we proceed any further let us relook at the futures contract and inspect a few key elements. Allow me to repost the futures contract with a few important features highlighted.



Starting from top, the box highlighted in red has three important bits of information –

1. **Instrument Type** – Remember, the underlying asset is the stock of a company and we are interested in the asset's future contract. Hence, the instrument type here is the 'stock futures'

2. **Symbol** – This highlights the name of the stock, TCS in this case

3. **Expiry Date** – This is the date on which the contract ceases to exist. As we can see, the TCS futures contract specifies 24th Dec 2014 as the expiry. You may be interested to know

that, all derivative contracts in India expire on the last Thursday of the month. We will discuss more on what happens on the expiry date at a later point

We had looked at the blue box a little earlier, it just highlights the future price.

Lastly the black box highlights two important parameters – the underlying value and the market lot.

1. **Underlying Value** – This is the same as the price at which the underlying is trading in the spot market. From the earlier snapshot, we know TCS was trading at Rs.2362.35 per share, however when I took the above snapshot, TCS fell by another few points, hence the price we see here is Rs.2359.95. per share

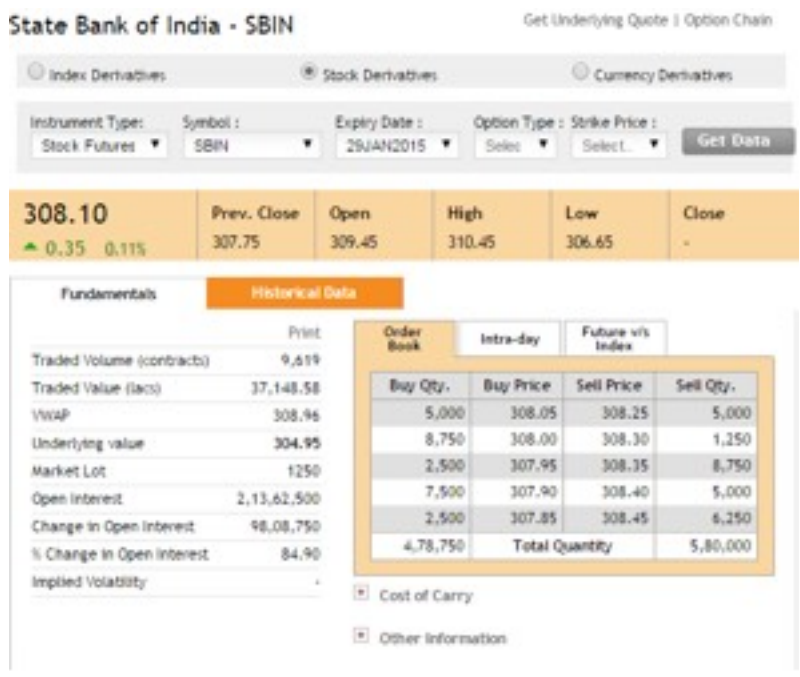
2. **Market lot (lot size)** – Remember, a futures contract is a standardized contract. The parameters are prefixed. Lot size is the minimum number of shares that we need to buy/sell if we wish to enter into an agreement. The lot size for the TCS futures is 125, which means a minimum of 125 shares (or a multiple of 125 shares) have to be transacted while trading the TCS futures.

Recall, in the previous chapter we had discussed about the 'Contract value', which is simply 'Lot size' multiplied by the futures price. We can now calculate the contract value for TCS futures as follows–

Contract Value = Lot size x Price of futures

125 x Rs.2374.90 = **Rs. 296,862.5**

Now before we proceed to discuss about the TCS futures trade, let us quickly look at another 'Futures Contract' just to rivet our understanding so far. Here, is the snapshot of the futures contract of 'State Bank of India (SBI)'.



With the help of the above snapshot you can perhaps answer the following questions –

1. What is the instrument type?

2. What is SBI's futures price?

3. How does SBI's future price compare with its spot price?

4. What is the expiry date of the Futures contract?

5. What is the lot size and the contract value of SBI futures?

3.2 – The Futures Trade

Now going back to the TCS futures trade, the idea is to buy a futures contract as I expect the TCS stock price to go up. The price at which I would buy TCS Futures is Rs.2374.9/- per share. Remember the minimum number of shares that I need to buy is 125. The minimum number of shares is also colloquially called 'one lot'.

So how do we buy the 'Futures Contract'? Well, this is quite simple we can call our broker and ask him to buy 1 lot of TCS futures at Rs.2374.9/- or we can buy it ourselves through the broker's trading terminal.

I prefer to place trades myself through the trading terminal. If you are new to the trading terminal, I would suggest you read through the chapter on the **Trading terminal**. Once TCS Futures is loaded on my market watch, all I need to do is just press F1 and buy the contract.

The moment I press the F1 key (expressing my interest to buy TCS futures) on my trading terminal, a couple of things happen in the background.

1. **Margin Validation** – Remember, whenever we enter into a futures agreement we need to deposit a margin amount (sort of a token advance), which is simply a percentage of the contract value. We will discuss margins shortly. If there is insufficient margin, we cannot enter into the agreement. So as the first step, the broker's risk management system/ software checks if I have sufficient money in my trading account (to suffice the margin requirement) to enter into a futures agreement

2. **The counterparty search** – After validating the margins, the system scouts for a relevant counterparty match. The match has to be made between me – the buyer of the TCS futures and the seller of the TCS futures. Remember, the stock exchange is a 'Financial supermarket' where one can find many participants with different views on the price of an asset. The seller of TCS futures obviously thinks, TCS futures price will go further down. Just like my rational as to why the TCS stock price will go higher, the seller has his own rational for his directional view, hence he wants to be a seller.

3. **The signoff** – Once Step 1 and 2 are through i.e. the margin validation and finding the counterparty, the buyer and the seller digitally sign the futures agreement. This is mainly a symbolic process. By agreeing to buy (or sell) the futures agreement, one gives consent to the other to honor the contract specifications.

4. **The margin block** – After the signoff is done, the required margin is blocked in our trading account. We cannot use the blocked margin for any other purpose. The money will be blocked as long as we hold the futures contract.

With the completion of these 4 steps, **I now own 1 lot of TCS Futures Contract**. You may be surprised to know, in the real markets, all the above mentioned steps happen sequentially in a matter of a few seconds!

Here is a critical question – What does it mean by "I now own 1 lot of TCS Futures Contract"? Well, it simply means by purchasing TCS futures on 15th Dec 2014, I have digitally entered into an agreement with a certain counterparty agreeing to buy 125 TCS shares from me (counterparty) at Rs.2374.9/- per share. This futures agreement between me and the counterparty expires on 24th Dec 2014.

3.3 –The 3 possible scenarios post the agreement

After entering into the agreement, there are 3 possible scenarios that can pan out by 24th Dec 2014. We know what these scenarios are (we studied them in chapter 1) – the price of TCS can go

up, the price of TCS can come down, or the price of TCS could stay the same. Let us just arbitrarily take up a few possible price situations and see what would be the impact of the price on both the parties involved.

Scenario 1 – TCS stock price goes up by 24th Dec

This is a case where my directional view on TCS shares has come true, therefore I stand to benefit.

Assume on 24th Dec 2014, the stock price of TCS has gone up from Rs.2374.9/- to Rs.2450/- per share, by virtue of the increase in spot price, the futures price would also increase. This means as per the agreement, I am entitled to buy the TCS shares at Rs.2374.9/- per share which is a much lower price compared to what is available in the market. My profit will be Rs.75.1/- per share (Rs.2450 – Rs.2374.9). Since the deal is for 125 shares, my overall profit will be Rs.9387.5/- (Rs.75.1/- * 125).

The seller obviously incurs a loss, as he is forced to sell TCS shares at Rs.2374.9 per share as opposed to selling it in the open market at a much higher price of Rs.2450/- per share. Clearly, the buyer's gain is the seller loss.

Scenario 2 – TCS stock price goes down by 24th Dec

This is a case where my directional view on TCS shares has gone wrong, therefore I would stand to lose.

Assume on 24th Dec 2014, the stock price of TCS goes down from Rs.2374.9/- to Rs.2300/- per share, by virtue of this decrease the futures price will also be around the same level. This means as per the agreement, I am obligated to buy the TCS shares at Rs.2374.9/- per share which is a much higher price compared to what is available in the market. My loss will be Rs.75./- per share (Rs.2374.9 – Rs.2300). Since the deal is for 125 shares my overall loss will be Rs.9375/- (Rs.75/- * 125).

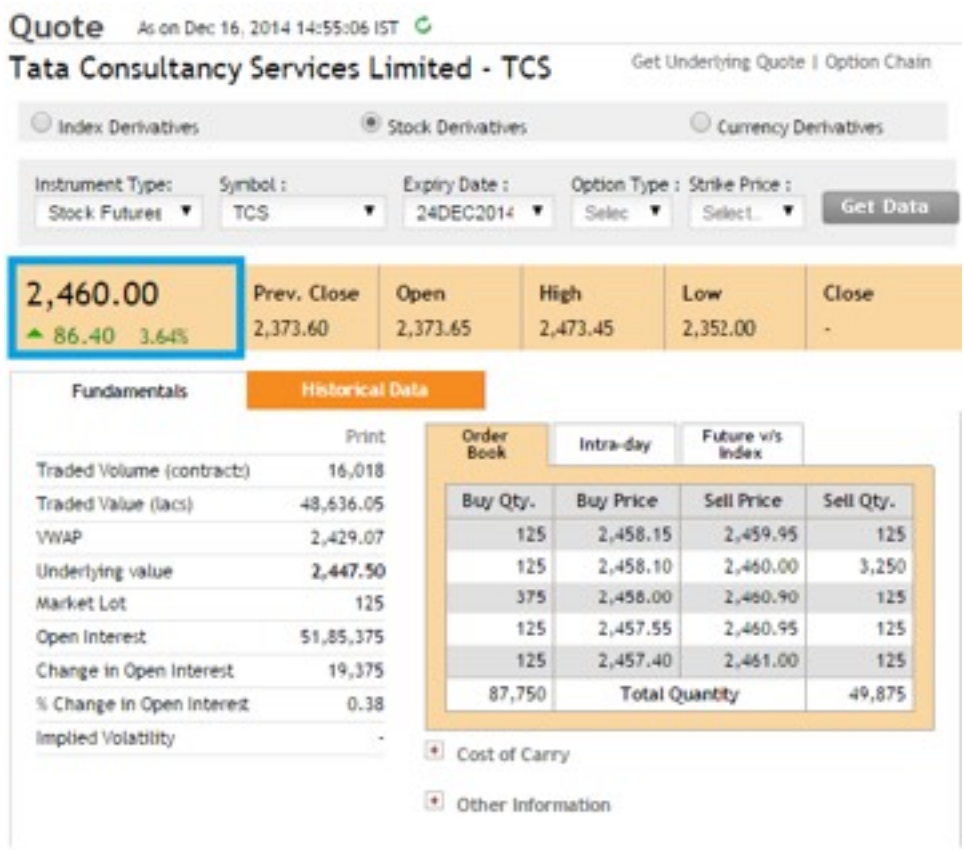
I would obviously incur a loss as I'm forced to buy the TCS shares at Rs.2374.9/- per share as opposed to buying it in the open market at a much lower price of Rs.2300/- per share. Clearly, the sellers gain is the buyer's loss.

Scenario 3 – TCS stock price remains unchanged

Under such a situation, neither the buyer nor the seller benefit, hence there is no financial impact on either party.

3.3 – Exploiting a trading opportunity

So here is a situation – after buying the TCS futures on 15th Dec 2014 at Rs.2374.9/- the very next day i.e 16th Dec 2014, TCS price shot up. It is now trading at Rs.2460/-. What do I do? Clearly with the price increase, I stand to benefit significantly. To be precise, at the time of taking the snap-shot, I am sitting at a profit of Rs.85.1/- per share or Rs.10,637.5/- (Rs.85.1/- * 125) as an overall profit.



Suppose I am happy with the money that I have made overnight, can I close out the agreement? Or rather at Rs.2460 per share what if my view changes? What if I no longer feel bullish about TCS at Rs.2460? Do I really need to hold on to the agreement until the contract expiry date i.e. 24th Dec 2014, by which time if the price goes down it could lead to a loss?

Well, as I had mentioned in the previous chapter the futures agreement is tradable. Meaning, at any point after entering into a futures agreement I can easily get out of the agreement by transferring the agreement to someone else. This means I can close the existing TCS futures position and book a profit of Rs.10,637.5/-. Not bad for a 1 day job right? J

Closing an existing futures position is called "square off". By squaring off, I offset an existing open position. In case of the TCS example, initially I bought 1 lot of TCS futures and when I square off I have to sell 1 lot of TCS futures (so that my initial buy position is offset). The following table summarizes the concept of square off in general –

Serial No	Initial Leg	View at the time of initial leg	Square off leg	View at the time of squaring off
1	Buy / Long	Expect price to go higher – Bullish	Sell	No longer expect the price to go higher or one just wants to get out of the existing position (for whatever reason)
2	Sell/Short	Expect price to go lower – Bearish	Buy	No longer expect the price to go lower or one just wants to get out of the existing position (for whatever reason)

When I intend to square off a position I can either call my broker asking him to square off the open position or I can do it myself on the trading terminal. In the example we have a buy open position in TCS futures (1 lot), to offset this open position the square off position would be to "sell 1 lot of TCS futures". The following things happen when I opt to square off the TCS position –

1. The broker (via trading terminal) scouts for a counterparty that would be willing to buy the futures position from me. In simpler words "my existing buy position will simply be transferred to someone else". That 'someone else' by virtue of buying the con**tract from** me, now bears the risk of the TCS price going up or down. Hence this is simply referred to as the "Risk Transfer"

2. Note, the transfer will happen at the current futures price in the market i.e. 2460/- per share

3. My position is considered offset (or squared off) after the trade is executed

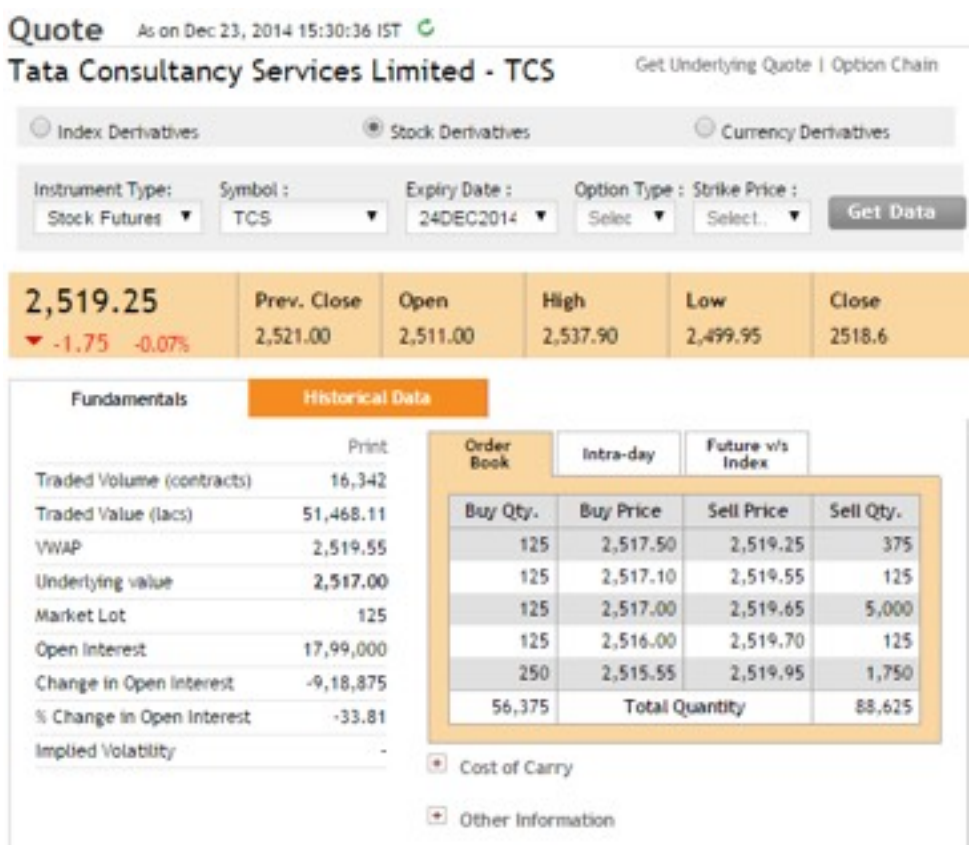
4. Once the trade is executed, the margins that were initially blocked would now be unblocked. I can utilize this cash for other transactions

5. The profit or loss made on the transaction will be credited or debited to my trading account the same evening itself

And with this, the futures trade is now set to be complete.

Note, if at Rs.2460 I develop a view that the price is going to be much higher, I could continue to hold the stock futures. In fact, I can continue to hold the futures till the contract's expiry i.e. 24th Dec 2014. As long as I continue to hold the futures, I continue to hold the risk of TCS price fluctuation. In fact, here is the snapshot of TCS futures taken on 23rd Dec 2014, just 1 day before the ex-

piry of the contract, had I opted to hold the futures till 23rd Dec my profits would have been much higher – TCS futures is trading at Rs.2519.25/- per share.



In fact on 16th Dec 2014 when I decided to book profits at Rs.2460/- , 'someone else' bought the TCS futures from me. In other words, I transferred my buy position to someone else, and even that 'someone else' (the counterparty) would also have made money on this contract by buying the contract at Rs.2460/- from me and holding it until 23rd Dec 2014. Now here are two simple questions for you –

1. What would be my Profit & Loss (P&L) on a per share and on an overall basis had I held the TCS futures from 15th Dec 2014 (Rs.2374.9) to 23rd Dec 2015 (Rs.2519.25)

2. On 16th Dec 2014 I squared off my position at Rs.2460/-, obviously by virtue of the square off the contract was transferred to a counterparty. Assuming the counterparty held on to the TCS futures position until 23rd Dec 2014, what would be his Profit & Loss (P&L) on a per share basis and on an overall basis ?

If you are unable to answer the above two questions, you can drop in a query in the comment box below and I will be happy to explain the answer. But I sincerely hope, you get the answers to the questions above yourself

In the next chapter we will discuss about margins, a very important aspect of futures trading.

Key takeaways from this chapter

1. If you have a directional view on an assets price, you can financially benefit from it by entering into a futures agreement

2. To transact in a futures contract one needs to deposit a token advance called the margin

3. When we transact in a futures contract, we digitally sign the agreement with the counter party, this obligates us to honor the contract

4. The futures price and the spot price of an asset are different, this is attributable to the futures pricing formula (we will discuss this topic later)

5. One lot refers to the minimum number of shares that needs to be transacted

6. Once we enter into a futures agreement there is no obligation to stick to the agreement until the contract expires

7. Every futures trade requires a margin amount, the margins are blocked the moment you enter a futures trade

8. We can exit the agreement anytime, which means you can exit the agreement within seconds of entering the agreement

9. When we square off an agreement we are essentially transferring the risk to someone else

10. Once we square off the futures position, margins are unblocked

11. The money that you make or lose in a futures transaction is credited or debited to your trading account the same day

12. In a futures contract, the buyer's gain is the sellers loss and vice versa