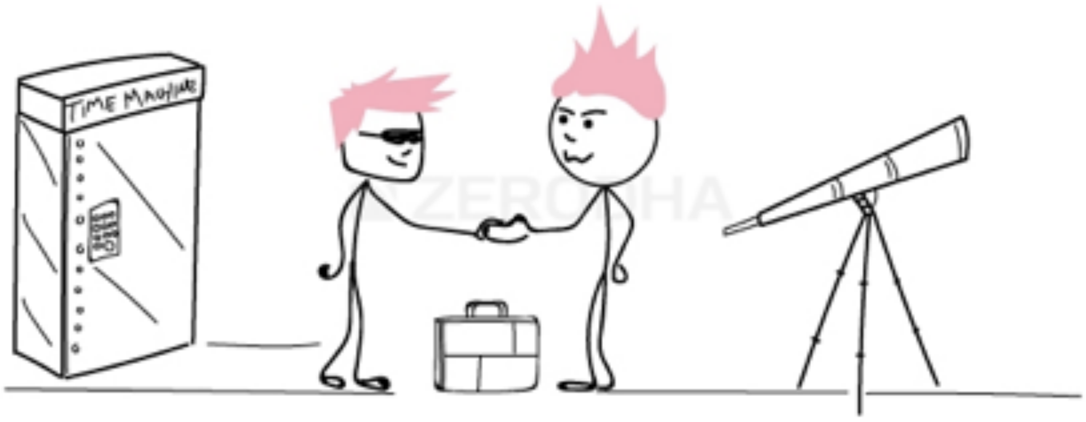
CHAPTER 1

Background – Forwards Market



1.1 Overview

The Futures market is an integral part of the Financial Derivatives world. 'Derivatives' as they are called is a security, whose value is derived from another financial entity referred to as an 'Underlying Asset'. The underlying asset can be anything a stock, bond, commodity or currency. The financial derivatives have been around for a long time now. The earliest reference to the application of derivatives in India dates back to 320 BC in 'Kautilya's Arthashastra'. It is believed that in the ancient Arthashastra (study of Economics) script, Kautilya described the pricing mechanism of the standing crops ready to be harvested at some point in the future. Apparently he used this method to pay the farmers much in advance, thereby structuring a true 'forwards contract'.

Given the similarities between the forwards and the futures market, I think the best possible way to introduce the futures market is by first understanding the 'Forwards market'. The Understanding of Forwards Market would lay a strong foundation for learning the Futures Market.

The forwards contract is the simplest form of derivative. Consider the forwards contract as the older avatar of the futures contract. Both the futures and the forward contracts share a common transactional structure, except that over the years the futures contracts have become the default choice of a trader. The forward contracts are still in use, but are limited to a few participants such as the industries and banks.

1.2 – A simple Forwards example

The Forward market was primarily started to protect the interest of the farmers from adverse price movements. In a forward market, the buyer and seller enter into an agreement to exchange the goods for cash. The exchange happens at a specific price on a specific future date. The price of the goods is fixed by both the parties on the day they enter into the agreement. Similarly the date and time of the goods to be delivered is also fixed. The agreement happens face to face with no intervention of a third party. This is called "Over the Counter or OTC" agreement. Forward contracts are traded only in the OTC (Over the Counter) market, where individuals/ institutions trade through negotiations on a one to one basis.

Consider this example, there are two parties involved here.

One is a jeweler whose job is to design and manufacture jewelry. Let us call him 'ABC Jewelers'. The other is a gold importer whose job is to sell gold at a whole sale price to jewelers, let us call him' XYZ Gold Dealers'.

On 9th Dec 2014, ABC enters into an agreement with XYZ to buy 15 kilograms of gold at a certain purity (say 999 purity) in three months time (9th March 2015). They fix the price of Gold at the current market price, which is Rs.2450/- per gram or Rs.24,50,000/- per kilogram. Hence as per this agreement, on 9th March 2015, ABC is expected to pay XYZ a sum of Rs.3.675 Crs (24,50,000/Kg*15) in return for the 15 kgs of Gold.

This is a very straightforward and typical business agreement that is prevalent in the market. An agreement of this sort is called a 'Forwards Contract' or a 'Forwards Agreement'.

Do note, the agreement is executed on 9th Dec 2014, hence irrespective of the price of gold 3 months later i.e 9th March 2015, both ABC and XYZ are obligated to honor the agreement. Before we proceed further, let us understand the thought process of each party and understand what compelled them to enter into this agreement.

Why do think ABC entered into this agreement? Well, ABC believes the price of gold would go up over the next 3 months, hence they would want to lock in today's market price for the gold. Clearly, ABC wants to insulate itself form an adverse increase in gold prices.

In a forwards contract, the party agreeing to buy the asset at some point in the future is called the "Buyer of the Forwards Contract", in this case it is ABC Jewelers.

Likewise, XYZ believes the price of gold would go down over the next 3 months and hence they want to cash in on the high price of gold which is available in the market today. In a forwards contract, the party agreeing to sell the asset at some point in the future is called the “Seller of the Forwards Contract”, in this case it is XYZ Gold Dealers.

Both the parties have an opposing view on gold; hence they see this agreement to be in line with their future expectation.

1.3 – 3 possible scenarios

While both these parties have their own view on gold, there are only three possible scenarios that could pan out at the end of 3 months. Let us understand these scenarios and how it could impact both the parties.

Scenario 1 – The price of Gold goes higher

Assume on 9th March 2015, the price of gold (999 purity) is trading at Rs.2700/- per gram. Clearly, ABC Jeweler’s view on the gold price has come true. At the time of the agreement the deal was valued at Rs 3.67 Crs but now with the increase in Gold prices, the deal is valued at Rs.4.05 Crs. As per the agreement, ABC Jewelers is entitled to buy Gold (999 purity) from XYZ Gold Dealers at a price they had previously agreed upon i.e Rs.2450/- per gram.

The increase in Gold price impacts both the parties in the following way –

Party	Action	Financial Impact
ABC Jewelers	Buys gold from XYZ Gold Dealers @ Rs.2450/- per gram	ABC saves Rs.38 Lakhs (4.05 Crs – 3.67 Crs) by virtue of this agreement
XYZ Gold Dealers	Obligated to sell Gold to ABC @ Rs.2450/- per gram	Incurs a financial loss of Rs.38 Lakhs.

Hence, XYZ Gold Dealers will have to buy Gold from the open market at Rs.2700/- per gram and would have to sell it to ABC Jewelers at the rate of Rs.2450/- per gram thereby facing a loss in this transaction.

Scenario 2 – The price of Gold goes down

Assume on 9th March 2015, the price of gold (999 purity) is trading at Rs.2050/- per gram. Under such circumstances, XYZ Gold Dealers view on the gold price has come true. At the time of the agreement the deal was valued at Rs 3.67 Cr but now with the decrease in gold prices, the deal is valued at Rs.3.075 Cr. However, according to the agreement, ABC Jewelers is obligated to buy

Gold (999 purity) from XYZ Gold Dealers at a price they had previously agreed upon i.e Rs.2450/- per gram.

This decrease in the gold price would impact both the parties in the following way –

Party	Action	Financial Impact
ABC Jewelers	Is obligated to buy gold from XYZ Gold Dealers @ Rs.2450/- per gram	ABC loses Rs.59.5 Lakhs (3.67 Crs – 3.075 Crs) by virtue of this agreement
XYZ Gold Dealers	Entitled to sell Gold to ABC @ Rs.2450/- per gram	XYZ enjoys a profit of Rs.59.5 Lakhs.

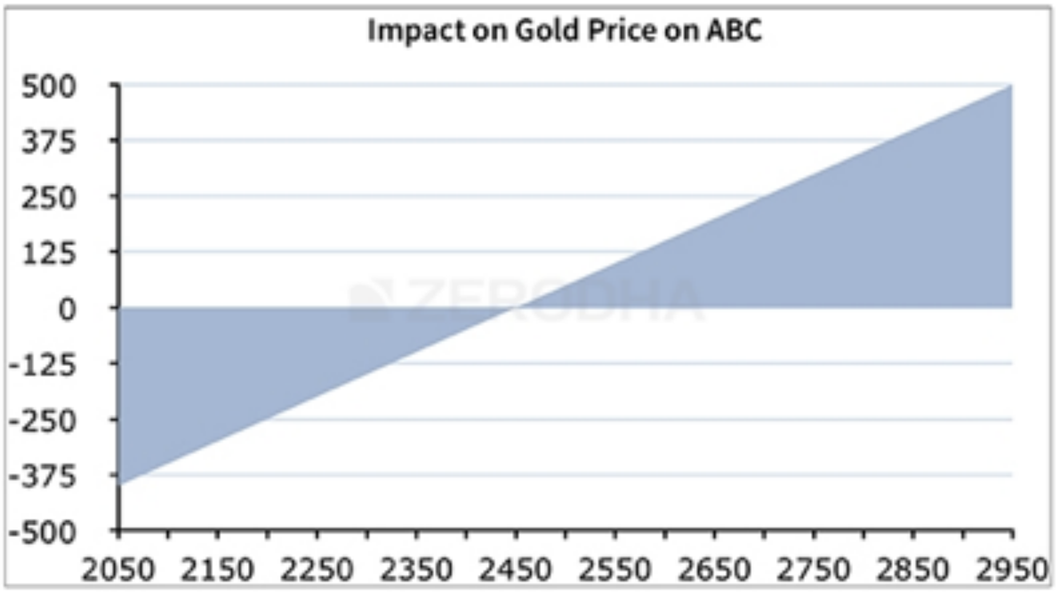
Do note, even though Gold is available at a much cheaper rate in the open market, ABC Jewelers is forced to buy gold at a higher rate from XYZ Gold Dealers hence incurring a loss.

<u>Scenario 3 – The price of Gold stays the same</u>

If on 9th March 2015, the price is the same as on 9th Dec 2014 then neither ABC nor XYZ would benefit from the agreement.

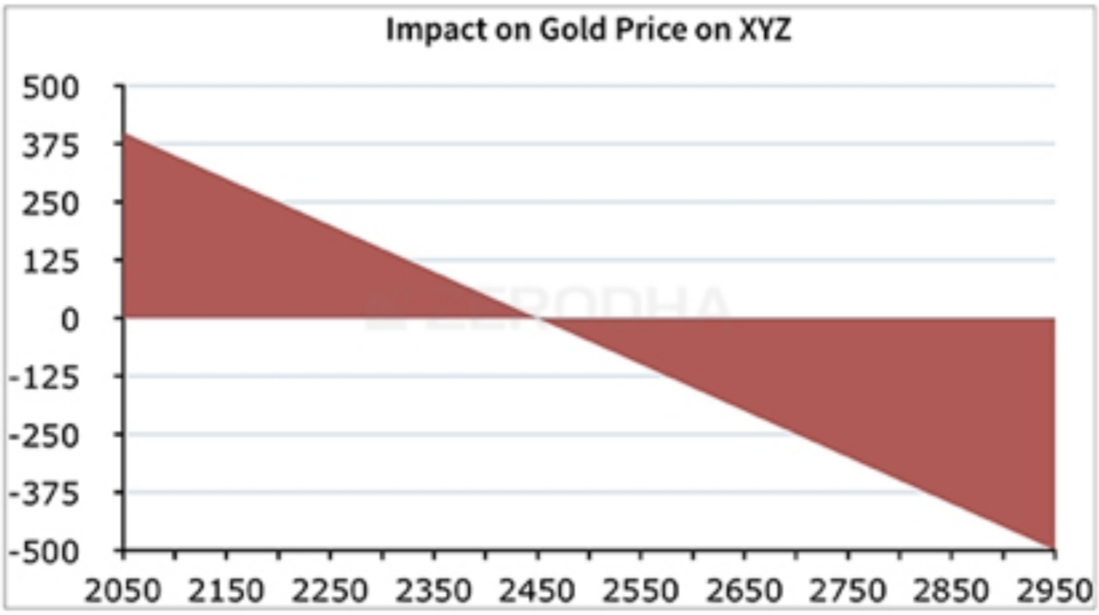
1.4 – 3 possible scenarios in one graph

Here is a visual representation of the impact of gold prices on ABC Jewelers –



As you can see from the chart above, at Rs.2450/- per gram, there is no financial impact for ABC. However, as per the graph above we can notice that ABC's financials are significantly impacted by a directional movement in the gold prices. Higher the price of gold (above Rs.2450/-), higher is ABC's savings or the potential profit. Likewise, as and when the gold price lowers (below Rs.2450/-), ABC is obligated to buy gold at a higher rate from XYZ, thereby incurring a loss.

Similar observations can be made with XYZ –



At Rs.2450/- per gram, there is no financial impact on XYZ. However as per the graph above, XYZ's financials are significantly impacted by a directional movement in the gold prices. As and when the price of gold increases (above Rs.2450/-), XYZ is forced to sell gold at a lower rate, thereby incurring a loss. However, as and when the price of gold decreases (below Rs.2450/-) XYZ would enjoy the benefit of selling gold at a higher rate, at a time when gold is available at a lower rate in the market thereby making a profit.

1.5– A quick note on settlement

Assume that on 9th March 2015, the price of Gold is Rs.2700/- per gram. Clearly as we have just understood, at Rs.2700/- per gram ABC Jewelers stands to benefit from the agreement. At the time of the agreement (9th Dec 2014) 15 Kgs gold was worth Rs. 3.67Crs, however as on 9th March 2015 15 kgs Gold is valued at Rs.4.05 Crs. Assuming at the end of 3 months i.e 9th March 2015, both the parties honor the contract, here are two options available to them for settling the agreement –

1. **Physical Settlement** – – The full purchase price is paid by the buyer of a forward contract and the actual asset is delivered by the seller. XYZ buys 15 Kgs of gold from the open market by paying Rs.4.05Crs and would deliver the same to ABC on the receipt of Rs.3.67 Crs. This is called physical settlement
2. **Cash Settlement** – In a cash settlement there is no actual delivery or receipt of a security.

In cash settlement, the buyer and the seller will simply exchange the cash difference. As per the agreement, XYZ is obligated to sell Gold at Rs.2450/- per gram to ABC. In other words, ABC pays Rs.3.67 Crs in return for the 15 Kgs of Gold which is worth Rs.4.05Cr in the open market. However, instead of making this transaction i.e ABC paying Rs.3.67 Crs in return for the gold worth Rs.4.05Crs, the two parties can agree to exchange only the **cash differential.** In this case it would be Rs.4.05 Crs – Rs.3.67 Crs = Rs.38 Lakhs. Hence XYZ would just pay Rs.38 lakhs to ABC and settle the deal. This is called a cash settlement

We will understand a lot more about settlement at a much later stage, but at this stage you need to be aware that there are basically two basic types of settlement options available in a Forwards Contract – physical and cash.

1.6 – What about the risk?

While we are clear about the structure (terms and conditions) of the agreement and the impact of the price variation on either party, what about the risk involved? Do note, the risk is not just with price movements, there are other major drawbacks in a forward contract and they are–

1. **Liquidity Risk** – In our example we have conveniently assumed that, ABC with a certain view on gold finds a party XYZ who has an exact opposite view. Hence they easily strike a deal. In the real world, this is not so easy. In a real life situation, the parties would approach an investment bank and discuss their intention. The investment bank would scout the market to find a party who has an opposite view. Of course, the investment bank does this for a fee.

2. **Default Risk/ / Counter party risk** – Consider this, assume the gold prices have reached Rs.2700/- at the end of 3 months. ABC would feel proud about the financial decision they had taken 3 months ago. They are expecting XYZ to pay up. But what if XYZ defaults?

3. **Regulatory Risk** – The Forwards contract agreement is executed by a mutual consent of the parties involved and there is no regulatory authority governing the agreement. In the absence of a regulatory authority, a sense of lawlessness creeps in, which in turn increases the incentive to default

4. **Rigidity** – Both ABC and XZY entered into this agreement on 9th Dec 2014 with a certain view on gold. However what would happen if their view would strongly change when they are half way through the agreement? The rigidity of the forward agreement is such that, they cannot foreclose the agreement half way through.

The forward contracts have a few disadvantages and hence future contracts were designed to reduce the risks of the forward agreements.

In India, the Futures Market is a part of a highly vibrant Financial Derivatives Market. During the course of this module we will learn more about the Futures and methods to efficiently trade this instrument!

So, let’s hit the road!

Key takeaways from this chapter

1. The forwards contract lays down the basic foundation for a futures contract
2. A Forward is an OTC derivative, which is not traded on an exchange
3. Forward contracts are private agreements whose terms vary from one contract to the other
4. The structure of a forwards contract is fairly simple
5. In a forward agreement, the party agreeing to buy the asset is called the "Buyer of the Forwards Contract"
6. In a forward agreement the party agreeing to sell the asset is called the "Seller of the Forwards Contract"
7. A variation in the price would have an impact on both the buyer and the seller of the forwards contract
8. Settlement takes place in two ways in a forward contract – Physical and Cash settlement
9. The risk of a forward contract is reduced by a futures contract
10. The core of a forward and futures contract is the same.