Basics of Derivatives

Derivatives being one such complex topic need proper guidance to be able to understand it. Let us go on to learn the basics of derivatives in this eBook. These basics will help you a great deal with the Finance portion of RBI Grade B and SEBI Grade A Exams. Let us get started.

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Basics of Derivatives

In the basics of derivatives, we will understand:

1. What are Derivatives?
2. What is the purpose that Derivatives serve?
3. Who are the participants in the Derivatives markets?
4. What are different kinds of Derivatives?

What are Derivatives?

i. Derivatives are contracts that derive values from underlying assets or securities.

ii. The underlying asset or assets from which these contracts derive values can be stocks, bonds, indices, currencies or commodities like gold, silver, oil, natural gas, electricity, wheat, sugar, coffee, and cotton etc.

iii. The performance of a derivative is dependent on the underlying asset’s performance.

iv. This underlying asset is simply called as an “underlying”. This asset is traded in a market where both the buyers and the sellers mutually decide its price, and then the seller delivers the underlying to the buyer and is paid in return.

v. Derivatives contracts can be either over the counter or exchange traded.

What is the purpose that Derivatives serve?

i. Derivatives are instruments to manage financial risks.

ii. Derivatives serve the purpose of risk management. These work on the principle of risk transfer, depending upon the roles donned by different market participants.

iii. Derivatives are one of the ways to prevent investments against market fluctuations.

iv. The basic principle behind entering into derivative contracts is to earn profits by speculating on the value of the underlying asset in future.
**Other objectives:**

To provide leverage, such that a small movement in the underlying value can cause a large difference in the value of the derivative.

**a.** To speculate and make a profit if the value of the underlying asset moves the way they expect.

**b.** To hedge or mitigate risk in the underlying, by entering into a derivative contract whose value moves in the opposite direction to the underlying position and cancels part or all of it out.

**c.** To obtain exposure to the underlying where it is not possible to trade in the underlying (e.g., weather derivatives).

**d.** To create option ability where the value of the derivative is linked to a specific condition or event (e.g. the underlying reaching a specific price level).

**What is Spot Price?**

Spot or cash price is the price of the underlying if bought immediately.

**What are different types of Derivatives?**

**i. Over the Counter (OTC)**

**a.** Over the counter (OTC) derivatives are contracts that are traded (and privately negotiated) directly between two parties, without going through an exchange or other intermediary.

**b.** Products such as swaps, forward rate agreements, exotic options – and other exotic derivatives – are almost always traded in this way.

**c.** The OTC derivative market is the largest market for derivatives and is mostly unregulated with respect to disclosure of information between the parties.

**ii. Exchange-traded Derivatives**

**a.** Exchange-traded derivative contracts (ETD) are those derivatives instruments that are traded via specialized derivatives exchanges or other exchanges.

**b.** A derivatives exchange is a market where individuals trade standardized contracts that have been defined by the exchange.

**c.** It acts as an intermediary to all related transactions and takes initial margin from both sides of the trade to act as a guarantee.
Who are the participants in the Derivatives markets?

i. Hedgers

a. These are the underlying asset owners, who wish to transfer the future price fluctuation risk of their commodities.

b. These are risk-averse trader.

c. They aim at derivative markets to secure their investment portfolio/price of their commodities against the market risk and price movements.

d. They do this by assuming an opposite position in the derivatives market. In this manner, they transfer the risk of loss to those others who are ready to take it.

ii. Speculators

a. These are the risk consumers, who take positions in derivative contracts based on the predictions of future movement of prices of the underlying asset.

b. They want to embrace risk in order to earn profits

c. Speculators hold derivative positions with or without owning the underlying assets.

d. They have a completely opposite point of view as compared to the hedgers. This difference of opinion helps them to make huge profits if the bets turn correct.

iii. Arbitrageurs

a. These market participants' approach is to risk-proof themselves.

b. They take advantage of the price difference in a product in two different market locations.

c. This trade takes place where the buyer purchases an asset for a cheaper price in one market/location and arranges to sell the same simultaneously in a different market/location at a higher price.

What are different kinds of Derivatives?

i. Forwards

a. A forward contract is a non-standardized contract between two parties to buy or sell an asset at a specified future time, at a price agreed upon today.

b. The party agreeing to buy the underlying asset in the future assumes a long position, and the party agreeing to sell the asset in the future assumes a short position.
c. The price agreed upon is called the delivery price, which is equal to the forward price at the time the contract is entered into.

d. The forward price of such a contract is commonly contrasted with the spot price, which is the price at which the asset changes hands on the spot date.

e. The difference between the spot and the forward price is the forward premium or forward discount, generally considered in the form of a profit, or loss, by the purchasing party.

f. A forward contract takes place between two counterparties. This means that the exchange is not an intermediary to these transactions. Hence, there is an increase chance of counterparty credit risk.

**ii. Futures**

a. Futures contracts are listed on the exchange. This means that the exchange is an intermediary. Hence, these contracts are of standard nature and the agreement cannot be modified in any way.

b. Exchange contracts come in a pre-decided format, pre-decided sizes and have pre-decided expirations.

c. Also, since these contracts are traded on the exchange, they have to follow a daily settlement procedure meaning that any gains or losses realized on this contract on a given day have to be settled on that very day. This is done to negate the counterparty credit risk.

d. An important point that needs to be mentioned is that in case of a futures contract, they buyer and seller do not enter into an agreement with one another. Rather both of them enter into an agreement with the exchange.

*What is the difference between Forward Contracts and Futures Contracts?*

a. A futures contract differs from a forward contract in that the futures contract is a standardized contract written by a clearing house that operates an exchange where the contract can be bought and sold.

b. On the other hand, the forward contract is a non-standardized contract written by the parties themselves.

c. Forwards also typically have no interim partial settlements – or “true-ups” – in margin requirements like futures, such that the parties do not exchange additional property, securing the party at gain, and the entire unrealized gain or loss builds up while the contract is open.
### Basics of Derivatives

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<td>Squaring off</td>
<td>Can be reversed with any member of the Exchange.</td>
<td>Contract can be reversed only with the same counterparty with whom it was entered into.</td>
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### iii. Swaps

**a.** Swaps are derivatives in which counterparties exchange cash flows of one party’s financial instrument for those of the other party’s financial instrument.

**b.** Specifically, the two counterparties agree to exchange one stream of cash flows against another stream. The swap agreement defines the dates when the cash flows are to be paid and the way they are calculated. Usually at the time when the contract is initiated at least one of these series of cash flows is determined by a random or uncertain variable such as an interest rate, foreign exchange rate, equity price or commodity price.

**c.** Swaps enable companies to avoid foreign exchange risks amongst other risks.

**d.** Swap contracts are usually not traded on the exchange. These are private contracts which are negotiated between two parties. Usually investment bankers act as middlemen to these contracts. Hence, they too carry a large amount of exchange rate risks.

**e.** The most common example is swapping a fixed interest rate for a floating one. Participants may decide to swap the interest rates or the underlying currency as well.

### iv. Options

**a.** Options are derivative contracts which gives the buyer a right to buy/sell the underlying asset at the specified price during a certain period of time.

**b.** The buyer is not under any obligation to exercise the option. The option seller is known as the option writer. **The specified price is known as strike price.**
c. An options contract binds one party whereas it lets the other party decide at a later date i.e. at the expiration of the option. So, one party has the obligation to buy or sell at a later date whereas the other party can make a choice.

d. Obviously, the party that makes a choice has to pay a premium for the privilege.

**Types of Options**

There are two types of options i.e. **call option and put option**.

**Call option** allows you the right but not the obligation to buy something at a later date at a given price whereas **put option** gives you the right but not the obligation to sell something at a later date at a given pre decided price.

Any individual therefore has four options when they buy an options contract.

They can be on the long side or the short side of either the put or call option.

Like futures, options are also traded on the exchange.

**Some Terms & Definitions**

**i. Long Position**: When we trade stocks or bonds, we are either on the buying side or on the selling side. However, the terminology used in the derivatives market is markedly different. Here if you are the person buying a derivative contract, then you are on the long side of the contract. In the market, this is simply referred to as going long.

**ii. Short Position**: The opposite of going long is called going short. In simple words, this means that you are the seller of a derivative contract. In the derivatives market being a seller means having a short-term horizon and therefore you are shorting the underlying financial instrument.

Hence, in the same example, if you agree to exchange $1000 for 900 Euros, then you are going long on the dollar but short on the Euro. Similarly, if you agree to deliver 100 bushels of wheat to someone at a later date for a fixed price, you are going short on the wheat.

**iii. Spot Contract**: A spot contract is a contract for immediate delivery. Since derivatives, by definition include delivery at a future date, spot contracts usually do not form part of the derivatives market.
However, they do form the basis for the pricing of futures, forwards and options. If a certain financial asset is being sold for X amount in the spot market and the future expectations are known, then the price of the derivative can be derived.

iv. **Expiration**: Derivatives are time bound financial instruments. This means that they come with an expiration date. They have intrinsic worth only up till that date and post that date they are worthless. Expiration date is a term usually used when we refer to options in particular.

When we talk about forwards, swaps or futures, the expiration date is replaced by the **settlement date**. However, the idea remains the same.

Expiration date is when the contract is finally unwound and the profits and losses due become a reality. Simply put that is the end of the agreement.

**Derivatives vs. Swaps: What’s the Difference?**

a. Derivatives are contracts involving two or more parties with a value based on an underlying financial asset. Often, derivatives are a means of risk management.

b. Swaps are a type of derivative that has a value based on cash flows. Typically, one party's cash flow is fixed while the other's is variable in some way. Swaps comprise one type of derivative, but its value is not derived from an underlying security or asset.

c. The other main risk associated with swaps is counterparty risk. This is the risk that the counterparty to a swap will default and be unable to meet its obligations under the terms of the swap agreement.

**Derivatives vs. Options: What’s the Difference?**

a. A derivative is a financial contract that gets its value, risk, and basic term structure from an underlying asset.

b. Options are one category of derivatives and give the holder the right, but not the obligation to buy or sell the underlying asset.

c. Derivatives, on the other hand, usually are legal binding contracts whereby once entered into, the party must fulfil the contract requirements. Of course, many options and derivatives can be sold before their expiration dates, so there is no exchange of the physical underlying asset.

**Resources Referred:**

1. [https://www.investopedia.com/](https://www.investopedia.com/)
2. [https://efinancemanagement.com/derivatives](https://efinancemanagement.com/derivatives)
4. [https://economictimes.indiatimes.com/definition/derivatives](https://economictimes.indiatimes.com/definition/derivatives)
5. [https://cleartax.in/s/financial-derivatives](https://cleartax.in/s/financial-derivatives)
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