As per the New Syllabus 2017-18 of Mumbai University for BFM, Semester - IV

COMMODITIES DERIVATIVES

Pawan Jhabak

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Commodities Derivatives

(As per the New Syllabus 2017-18 of Mumbai University for BFM, Semester – IV)

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DTP by : Rakhi
Preface

“Genius is the ability to reduce the complicated to the simple”...

Albert Einstien

I earnestly hope that the book will make complicated subject *Commodities Derivates*, simple to understand and SCOre high marks in exams.

I look forward for constructive suggestion from the readers.

I am thankful to one and all who have contributed directly or indirectly to make this book possible.

This book is user-friendly and different. As one goes through the book, one will feel the difference, and this will help to master finance in an enjoyable manner, with lifetime utility.

This book covers ‘University’ syllabus with practical dimensions!! Let’s learn!!

Best Wishes!!

Million Thanks.

Pawan Jhabak
scorejhabak@gmail.com
# Syllabus

## Commodities Derivatives

### Modules at a Glance

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<td>Regulatory Framework</td>
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<td><strong>60</strong></td>
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### Sr. No. Modules / Units

1. **Introduction of Derivatives**

2. **Pricing Commodity Derivatives**

3. **Trading: Basic Concepts**
   - Basic Concepts such as Margins, Circuit Filters – Delivery Norms – Contracts Specifications, Trading System, and Entities in the Trading System, Trader Workstation, Order Types and Conditions, Exposure Limits, Commodities to be

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### Question Paper Pattern

**Maximum Marks:** 75  
**Questions to be Set:** 05  
**Duration:** 2\(\frac{1}{2}\) Hours

All questions are compulsory carrying 15 Marks each.

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| Q-1          | Objective Questions  
  (A) Sub questions to be asked (10) and to be answered (any 08)  
  (B) Sub questions to be asked (10) and to be answered (any 07)  
  (*Multiple Choice/True or False/Match Columns/Fill in the Blanks) | 15 Marks |
| Q-2          | Full Length Question  
  OR | 15 Marks |
| Q-2          | Full Length Question  
  OR | 15 Marks |
| Q-3          | Full Length Question  
  OR | 15 Marks |
| Q-3          | Full Length Question  
  OR | 15 Marks |
| Q-4          | Full Length Question  
  OR | 15 Marks |
| Q-4          | Full Length Question  
  OR | 15 Marks |
| Q-5          | (A) Theory questions  
  (B) Theory questions  
  OR | 08 Marks  
  07 Marks |
| Q-5          | Short Notes  
  To be asked (05)  
  To be answered (03)  
  OR | 15 Marks |

**Note:** Theory question of 15 Marks may be divided into two sub-questions of 7/8 and 10/5 Marks.
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A derivative is a security with a price that is dependent upon or derived from one or more underlying assets. The derivative itself is a contract between two or more parties based upon the asset or assets. Its value is determined by fluctuations in the underlying asset. The most common underlying assets include stocks, bonds, commodities, currencies, interest rates and market indexes.

Derivatives can either be traded over-the-counter (OTC) or on an exchange. OTC derivatives constitute the greater proportion of derivatives in existence and are unregulated, whereas derivatives traded on exchanges are standardized. OTC derivatives generally have greater risk for the counterparty than do standardized derivatives.

**Definition:** A derivative is a contract between two parties which derives its value/price from an underlying asset. The most common types of derivatives are futures, options, forwards and swaps.

Originally, derivatives were used to ensure balanced exchange rates for goods traded internationally. With differing values of different national currencies, international traders needed a system of accounting for these differences. Today, derivatives are based upon a wide variety of transactions and have many more uses. There are even derivatives
based on weather data, such as the amount of rain or the number of sunny days in a particular region.

Because a derivative is a category of security rather than a specific kind, there are several different kinds of derivatives in existence. As such, derivatives have a variety of functions and applications as well, based on the type of derivative. Certain kinds of derivatives can be used for hedging, or insuring against risk on an asset. Derivatives can also be used for speculation in betting on the future price of an asset or in circumventing exchange rate issues. For example, a European investor purchasing shares of an American company off of an American exchange (using U.S. dollars to do so) would be exposed to exchange-rate risk while holding that stock. To hedge this risk, the investor could purchase currency futures to lock in a specified exchange rate for the future stock sale and currency conversion back into Euros. Additionally, many derivatives are characterized by high leverage.
Derivative contracts can be differentiated into several types. All the derivative contracts are created and traded in two distinct financial markets, and hence are categorized as following based on the markets:

- **Exchange-traded Contract**: Exchange-traded contracts trade on a derivatives facility that is organized and referred to as an exchange. These contracts have standard features and terms, with no customization allowed and are backed by a clearinghouse.

- **Over the Counter Contract**: Over the counter (OTC) contracts are those transactions that are created by both buyers and sellers anywhere else. Such contracts are unregulated and may carry the default risk for the contract owner.

**DERIVATIVE CATEGORIES**

Generally, the derivatives are classified into two broad categories:

- Forward Commitments
- Contingent Claims

**Forward Commitments**

Forward commitments are contracts in which the parties promise to execute the transaction at a specific later date at a price agreed upon in the beginning. These contracts are further classified as follows:

**Over the Counter Contracts**

Over the counter contracts are of two types:

1. **Forward**: In this type of contract, one party commits to buy and the other commits to sell an underlying asset at a certain price on a certain future date. The underlying can either be a physical asset or a stock. The loss or gain of a particular party is determined by the price movement of the asset. If the price increases, the buyer incurs a gain as he still gets to buy the asset at the older and lower price. On the other hand, the seller incurs a loss in the same scenario.

2. **SWAP**: Swap can be defined as a series of forward derivatives. It is essentially a contract between two parties where they exchange a series of cash flows in the future. One party will consent to pay the floating interest rate on a
principal amount while the other party will pay a fixed interest rate on the same amount in return. Currency and equity return swaps are the most commonly used swaps in the markets.

Exchange-traded Contracts

Exchange-traded forward commitments are called futures. A future contract is another version of a forward contract, which is exchange-traded and standardized. Unlike forward contracts, future contracts are actively traded in the secondary market, have the backing of the clearinghouse, follow regulations and involve a daily settlement cycle of gains and losses.

Contingent Claims

Contingent claims are contracts in which the pay-off depends on the occurrence of a certain event. Unlike forward commitments where the contract is bound to be settled on or before the termination date, contingent claims are legally obliged to settle the contract only when a specific event occurs. Contingent claims are also categorized into OTC and exchange-traded contracts, depending on the type of contract. The contingent claims are further subdivided into the following types of derivatives:

Options

Options are the type of contingent claims that are dependent on the price of the stock at a future date. Unlike the forward commitments derivatives where pay-offs are calculated keeping the movement of the price in mind, the options have pay-offs only if the price of the stock crosses a certain threshold. Options are of two types: Call and Put. A call option gives the option to buy the underlying asset at a specific price. A put option is the option to sell the underlying at a certain price.

Interest Rate Options

Options where the underlying is not a physical asset or a stock, but the interest rates.

Warrants

Warrants are the options which have a maturity period of more than one year and hence, are called long-dated options. These are mostly OTC derivatives.
**Convertible Bonds**

Convertible bonds are the type of contingent claims that gives the bondholder an option to participate in the capital gains caused by the upward movement in the stock price of the company, without any obligation to share the losses.

**Callable Bonds**

Callable bonds provide an option to the issuer to completely pay-off the bonds before their maturity.

**Asset-backed Securities**

Asset-backed securities are also a type of contingent claim as they contain an option feature, which is the prepayment option available to the asset owners.

**Options on Futures**

A type of options that are based on the futures contracts.

**Exotic Options**

These are the advanced versions of the standard options, having more complex features.

In addition to the categorization of derivatives on the basis of payoffs, they are also sub-divided on the basis of their underlying asset. Since a derivative will always have an underlying asset, it is common to categorize derivatives on the basis of the asset. Equity derivatives, weather derivatives, interest rate derivatives, commodity derivatives, exchange derivatives, etc are the most popular ones that derive their name from the asset they are based on. There are also credit derivatives where the underlying is the credit risk of the investor or the government.

Derivatives take their inspiration from the history of mankind. Agreements and contracts have been used from ages to execute commercial transactions and so is the case with derivatives. Likewise, financial derivatives have also become more important and complex to execute smooth financial transactions. This makes it important to understand the basic characteristics and the type of derivatives available to the players in the financial market.
Today international markets trade innumerable derivative products on all kinds of underlying assets, both tangible and intangible. Without getting into the complexities of derivatives at this level, it is important to understand the following three generic derivative products/contracts in detail:

1. Forward contract
2. Futures contract
3. Option contract

1. Forward Contract

A Forward contract is a one-to-one, bipartite/tripartite contract, which is to be performed mutually by the contracting parties, in future, at the terms decided upon, on the contract date. In other words, a forward contract is an agreement to buy or sell an asset on a specified future date for a specified price. One of the parties to the contract assumes a long position, i.e., agrees to buy the underlying asset while the other assumes a short position, i.e., agrees to sell the asset. As this contract is traded off the exchange and settled mutually by the contracting parties, it is called and over-the-counter product. As mentioned before, over-the-counter (OTC) is a generic term used for a product/market, which is off the exchange. This concept can be better understood with the help of an illustration.

Assume that there are two parties – Mr. A (buyer) and Mr. B (seller) – who enter into a contract to buy and sell 100 units of asset X at ₹ 350 per unit, at a predetermined time of two months from the date of contract. In this case, the product (asset X), the quantity (100 units), the product price (₹ 350 per unit) and the time of delivery (2 months from the date of contract) have been determined and well understood, in advance, by both the contracting parties. Delivery and payment (settlement of transaction) will take place as per the terms of the contract on the designated date and place. This is a simple example of a forward contract.

Forward contracts are extensively used in India in the foreign exchange market.

Forward contracts are negotiated by the contracting parties on a one-to-one basis and hence offer tremendous flexibility in terms of
Derivatives
determining contract terms such as price, quantity, quality (in case of commodities), delivery time and place. The parties may freely decide upon all these terms, based on their circumstances and negotiation powers. They may also carry out subsequent alternations in the contract terms, by mutual consent.

Like other over-the-counter products, forward contracts offer tremendous flexibility to the contracting parties. However, as they are customised, they suffer from poor liquidity. Furthermore, as these contracts are mutually settled and generally not guaranteed by any third party, the counter party risk/default risk/credit risk is considerable in such contracts. These features of forward contracts need to be understood in detail.

**Liquidity Risk**

Liquidity is generally defined as the ability of a market participant to buy or sell the desired quantity of an asset, at any time. As forward contracts are traded on a one-to-one basis, they are tailor-made contracts and cater to the specific needs of the contracting parties. Therefore, others may not be interested in these contracts. Further, as these contracts are not listed and traded on the exchanges, other market participants do not have easy access to either the contracts or to the contracting parties. Their tailor-made feature and non-availability on the exchanges, which make them inaccessible to a large set of market participants, create illiquidity in the contracts. In other words, it is very difficult for the contracting parties to withdraw from a forward contract before the contract matures. Hence, the liquidity in these contracts is poor.

Interestingly, in order to address the issue of poor illiquidity of forward contracts, contracting parties have started listing forward contacts on the exchanges in some international markets. This display of products on the exchanges creates visibility and accessibility of products to other market participants, Thus, an interested party may trade the product with the contracting parties.

**Default Risk/Credit Risk/Counter Party Risk**

Forward contracts, as defined, are transacted on a one-to-one basis. Each party is, therefore, exposed to the counter party's credit risk, i.e., the risk of default. It may be appreciated that in the case of a movement in the price of the asset, either of the parties is exposed to the risk and this may result in default the affected party. For instance, if the price of
the asset goes up during the life of the forward contract, the seller may default as he will benefit by selling his asset in the market at the prevailing price, which is higher than the contracted forward price. On the other hand, if the asset price goes down, the buyer may default, as he will benefit by purchasing the asset in the cash market at a price lower than the contracted forward price.

To illustrate the risk of default, let us refer to the example given earlier, where Mr A and Mr B enter into a contract to buy and sell 100 units of asset X @ ₹ 350 per unit after two months from the date of contract. If the price of asset X goes up substantially after two months, Mr B (the seller) may prefer to sell his asset in the market rather than sell it to Mr A as contracted, because the cash market would fetch him a better price. Therefore, he may default on his obligation to the contract, i.e. not deliver the asset. Similarly, in the event that the price of asset X goes down, Mr. A (the buyer) may choose to default as he will find it more attractive to buy the asset from the market at a lower price, rather than honour the contract. This way, both Mr A and Mr B are exposed to the risk of default by each other.

The important point to understand regarding default is that the contracting parties are likely to default only when there is an incentive to do so.

As defined in the example, neither Mr. A nor Mr. B will default unless they stand to benefit by dishonouring the contract.

Market participants across the globe are trying to address this issue of counter party risk in forward contracts. One option chosen by market participants is the third party guarantee to these contracts. For instance, having entered into a forward contract, the contracting parties may go to a third party who will immunise their positions, through a guarantee. This third party – essentially a risk taker (such as a clearing corporation) - may collect some margin from both the parties and immunise them against the risk of default by each other. Indeed, this is being done in India as well. For instance, Clearing Corporation of India Ltd (CCIL) is guaranteeing the settlement of OTC traded government securities contracts.

2. Futures Contract

In view of the preceding points, one may say that although forward contracts provide a great deal of flexibility to the contracting parties,
they suffer from two important problems- illiquidity and counter party risk. These two issues concerning forward contracts have offered the exchanges a tremendous business opportunity and they have started trading these forward contracts; but with a difference. In order to make the contracts attractive to a large set of market participants, they have standardised these contracts. To further generate liquidity in these contracts by engendering confidence among market participants, exchanges have persuaded their clearing corporations to guarantee these trades.

Trading of forward contracts on the exchanges was considered a means for addressing the issues in the forward contracts. Further, in order to differentiate between the exchange-traded forward and the OTC forward, the market renamed the exchange-traded forwards as futures contract. Hence, futures contracts are essentially standardised forward contracts, which the traded on the exchanges and settled through the clearing agency of the exchanges. The clearing agency also guarantees the settlement these trades. In other words, futures contracts are standardised forward contracts or the futures market is simply an extension of the forward market.

As futures contracts are organised/standardised, they cater to a wide range of market participants. Furthermore, their availability on the exchanges makes them accessible to market participants scattered throughout the country and perhaps, the world. Therefore, the liquidity problem, which persists in the forward market, does not exist in the futures market. The clearing agency of the exchange becomes the counter party to all the trades or provides the unconditional guarantee for their settlement, i.e., assumes the financial integrity of the entire system. Hence, the market participants are not exposed to counter party risk.

This point can be elaborated on by going back to the earlier example where Mr. A and Mr. B enter into a forward contract to buy and sell asset X. It is now assumed that this contract is entered into through the exchange, traded on the exchange and the settlement is guaranteed by a clearing agency. It would then be called a futures contract. Today, India trades futures on various underlying assets including commodities and securities – both equity and debt (interest rates). These contracts are discussed in subsequent chapters.
3. Option Contracts

In both forward and futures contracts, the contracting parties undertake an obligation to perform in accordance with the contract. Thus, for the buyer of the contract, profit is generated if the price of the underlying asset goes up. On the other hand, for the seller of the contract, the profit proposition requires a fall in the price of the underlying asset. However, unfavourable movements in the price of the underlying asset will create losses for the contracting parties.

Now, consider another situation. Assume that Mr X needs to honour an obligation of a million U.S. dollars after three months from a given date. There are a number of ways in which he can deal with this obligation. His first choice may be to do nothing at present and buy the dollars after three months, at the time when payment is due. The second option may be to buy the dollars right away and keep them in safe custody. Thirdly, he can buy the dollars in the forward or futures market for delivery 3 months. If he buys 1 million dollars at ₹ 47 per dollar (prevailing forward market prices) in the forward market for 3 months, he is obviously locked in to buy the dollars at the contracted price. At the time of maturity of the contract, if the dollar trades at a price higher than ₹ 47, he will gain as he will pay the contracted price of ₹ 47 per dollar. However, if the price of the dollar, after 3 months is less than ₹ 47, X will have lost the opportunity to buy the dollars at a lower price. The transaction here is simple and is not complicated with issues like transaction cost, marking to market, etc.

This situation leads to another thought. Is it possible to design a contract, which offers Mr. X an opportunity to buy the underlying asset only if he desires, with no compulsion whatsoever? This essentially means that the contract needs to confer a right on Mr. X to buy the asset (US$ in the instant example) with no obligation, to ensure that he is free to decide on buying the underlying asset. A similar concept may be thought of the sell side, wherein the seller may just need a right, rather than an obligation to sell the underlying asset. As a whole, this contract must offer the position takers an opportunity to exercise the right (buy or sell the underlying asset) only if it is favourable to them, or else, they may let the right expire. These contracts are called Options.
PARTICIPANTS IN A DERIVATIVE MARKET

On the basis of their trading motives, participants in the derivatives markets can be segregated into four categories - hedgers, speculators, margin traders and arbitrageurs. Let's take a look at why these participants trade in derivatives and how their motives are driven by their risk profiles.

Hedgers

Hedgers are traders who wish to protect themselves from the risk involved in price movements. They look for opportunities to pass on this risk to those who are willing to bear it. They are so keen to rid themselves of the uncertainty associated with price movements that they may even be ready to do so at a predetermined cost. For instance, let's say that you possess 200 shares of company ABC Ltd, and the price of these shares is hovering at around ₹ 110 at present. Suppose you plan to sell these shares near to Diwali and wish to utilise the funds to purchase some consumer goods during the season, as you are likely to get a good deal on the purchase then. However, since Diwali is around a month from today, you fear that the price of these shares could fall considerably by then. At the same time you do not want to encash your investment today as you may fritter away the money before Diwali. You are very clear about the fact that you would like to receive a minimum of ₹ 100 per share and no less. At the same time, in case the price rises above ₹ 100, you would like to benefit by selling them at the higher price. By paying a small price, you can purchase an arrangement in the form of a derivative product called an 'option' that incorporates all your above requirements. Fascinating, isn't it?

The derivative market offers products that allow you to hedge yourself against a fall in the price of shares that you possess. It also offers products that protect you from a rise in the price of shares that you plan to purchase. And that's only the tip of the iceberg. There are a wide variety of products available and strategies that can be constructed which allow you to pass on your risk to other market traders, who are more than willing to take it on.
Speculators

You may wonder why someone will willingly take on risks from you. The only explanation is that 'it takes all types to make the world'. So while you may be averse to risks, there are people who embrace them, since risk and return always go hand in hand. Then again, while you believe that the market will go up, there will be people who feel that it will fall. These differences in risk profile and market views distinguish hedgers from speculators. Speculators, unlike hedgers, look for opportunities to take on risk in the hope of making returns.

Let's go back to our example, wherein you were keen to sell share of company ABC Ltd. after one month, but feared that the price would fall below your threshold price. In the derivative market, there will be a speculator who expects the market to rise. Accordingly, he will enter into an agreement with you stating that he will buy shares from you at ₹100 if the price falls below that amount. In return for this risk that he will relieve you off, he must be paid a small compensation. He realises that if his surmise is correct, and the price of ABC Ltd rises, you will not want to sell shares to him anymore and he will get to pocket this compensation. This is only one instance of how a speculator could gain from a derivative product. For every opportunity that the derivative market offers a risk-averse hedger, it offers a counter opportunity to a trader with a healthy appetite for risk.

In the Indian markets, there are two types of speculators - day traders and the position traders. A day trader tries to take advantage of intra day fluctuations and the up and down movement in prices. They do not leave any position open at the end of the day, i.e., they do not have any overnight exposure to the markets. On the other hand, position traders greatly rely on news, tips and technical analysis (the science of predicting trends and prices) and take a longer view, say a month, in order to realise better profits.

Arbitrageurs

Life is not perfect and capital markets have their share of imperfections too. Sometimes the price of a stock in the cash market is lower or higher than it should be, in comparison to its price in the derivatives market. Arbitrageurs exploit these imperfections and inefficiencies to their advantage. Arbitrage trade is a low risk trade where a simultaneous purchase of securities is done in one market and a
corresponding sale is carried out in another market. These are done when the same securities are being quoted at different prices in two markets. In the earlier example of XYZ Ltd., suppose the cash market price is ₹ 1000 per share, it may be quoting at ₹ 1010 in the futures market. An arbitrageur would purchase 100 shares of XYZ Ltd. at ₹ 1000 in the cash market and simultaneously, sell 100 shares at ₹ 1010 per share in the futures market, thereby gaining ₹ 10 per share on the day that the futures contract expires. This is because in the Indian markets, there is no delivery of shares in order to settle positions in the derivatives segment; as you will see later, the cash and future prices converge on the expiry day, and a trader merely pays or receives the difference between his purchase price and the price prevailing in the cash market on the day the contract expires. For now, all you need to know is that by holding your position (purchase 100 shares in the cash market at ₹ 100 and selling 100 shares in the futures market at ₹ 110) until a specific date in the near future (expiry date of the futures contract), you can make a risk free return of ₹ 10 per share that you have bought and sold, a net profit of ₹ 1000 for taking no risk at all.

**THE FUNCTION OF DERIVATIVES**

The driving force behind the recent growth of derivatives was radical technological advancements in computer science. This technological revolution was global and unleashed profound transformations in every component of civilization—from science to finance. Computer technology enabled the world to move from the big to the little, from the vast to the infinitesimal. In physics, we moved from General Relativity to quantum mechanics. In biology, from individual cells to gene engineering. And similarly in markets, from macro to micro. State-of-the-art computerized systems offered financial engineers the ability to divide financial risk into its basic components.

Derivatives provide three important economic functions: (1) risk management, (2) price discovery, and (3) transactional efficiency. The primary purpose of risk management is to protect existing profits, not to create new profits. It is imperative to understand this purpose and function. Risk management involves the structuring of financial contracts to produce gains (or losses) that counterbalance the losses (or gains) arising from movements in financial prices.

Thus, by virtue of derivatives application, risks are reduced and profit is increased over a wide sphere of financial enterprise and in
various ways—from businesses whose efficiency is enhanced, to banks whose depositors and borrowers are benefited; from investment managers who increase their performance for clients, to farmers who protect their crops; from commercial users of energy, to retail users of mortgages.

Second, price discovery. This represents the ability to achieve and disseminate price information. Without price information, investors, consumers, and producers cannot make informed decisions. They are then inhibited and deterred from directing their capital to efficient uses. Derivatives are exceptionally well suited for the role of providing price information. They are the tools that assist everyone in the marketplace determine value. The wider the use of derivatives, the wider the distribution of price information. In this respect, I must underscore that futures exchanges are particularly adept at price discovery and dissemination of price information.

Third, transactional efficiency. Transactional efficiency is the product of liquidity. Inadequate liquidity results in high transaction costs. This impedes investments and deters the accumulation of capital. Derivatives facilitate the opposite result. They significantly increase market liquidity. As a result, transactional costs are lowered, the efficiency in doing business is increased, the cost of raising capital is lowered, and the amount of capital available for productive investment is expanded.

When derivatives are used for speculative purposes — as they often are — they are not being applied toward risk management. Such uses have given rise to the impression that derivatives create risk. That is an uninformed judgment and generally untrue. As every academic study undertaken has shown, when derivatives are used to manage risk, they deal with risks that already exist. These represent the four basic types of financial risk in the marketplace: equity risk, foreign exchange risk, interest rate risk, and commodity price risk. These are not risks created by derivatives; they are risks inherent in business. Interest rates go up and down, the value of the dollar and the real fluctuate, prices of equity markets change, crop yields rise and fall depending on the weather and a host of other variables. Risk management through derivatives helps protect these price exposures. The risks resulting from non-speculative derivatives application are therefore transferred risks and are not new.
Derivatives are the most widely traded instruments in financial markets. Although a lot of trading is carried out on various exchanges throughout the world you may be surprised to know that most of the derivative trades are carried off-exchange, i.e., Over the Counter (OTC). Though all the derivative trades on both exchange and off it are based on the same principal of deriving value from the underlying there are differences in the products, regulations, processing etc. The following write-up could be helpful in understanding a few of these differences.

The two major types of markets in which derivatives are traded are namely:

- Exchange Traded Derivatives
- Over the Counter (OTC) derivatives

Exchange-traded derivatives (ETD) are traded through central exchange with publicly visible prices.

Over the Counter (OTC) derivatives are traded between two parties (bilateral negotiation) without going through an exchange or any other intermediaries. OTC is the term used to refer stocks that trade via dealer network and not any centralized exchange. These are also known as unlisted stocks where the securities are traded by broker-dealers through direct negotiations.
With different characteristics, the two types of markets complement each other in providing a trading platform to suit different business needs. On one hand, exchange traded derivative markets have better price transparency as compared to OTC markets. Also the counterparty risks are smaller in exchange-traded markets with all trades on exchanges being settled daily with the clearing house. On the other hand, the flexibility of OTC market means that they suit better for trades that do not have high order flow or special requirements. In this context, OTC market performs the role of an incubator for new financial products.

The following write-up could be helpful in understanding a few of these differences.

1. **Location:** As the name states Exchange-traded Derivatives are derivatives that are traded on an exchange which is the centralized platform for carrying out all the transactions. OTC contracts on the other hand are decentralized. Market intermediaries compete to match buyers with sellers.

2. **Contracts:** The contracts traded on an exchange are standardized i.e. they cannot be customized according to one’s need. OTC contracts are private contracts that can be customized as per one’s needs.

3. **Regulation:** ETD contracts are heavily regulated by the market regulators and exchanges are not permitted to allow trades unless proper processes for margin payments, clearing and settlement are laid out. OTC contracts are loosely regulated. ISDA (International Swaps and Derivative Association) master agreement is the most commonly used master service agreement.

4. **Counterparty Risk:** Exchange\Clearing house acts as a guarantor to all trades taking place over the exchange. Exchange requires the participants deposit margin based on

<table>
<thead>
<tr>
<th>Exchange-traded derivatives (ETD)</th>
<th>Over the Counter (OTC)</th>
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<tbody>
<tr>
<td>Central clearing house (CCH) acts as a counterparty on both sides</td>
<td>Private transaction between two parties</td>
</tr>
<tr>
<td>Margin as per CCH rules</td>
<td>Collateral is negotiated between parties</td>
</tr>
<tr>
<td>Simple liquidation</td>
<td>Negotiated liquidation</td>
</tr>
<tr>
<td>Credit Risk exposure to CCH</td>
<td>Counterparty credit risk created that is to be managed</td>
</tr>
</tbody>
</table>
the participants risk profile and the contracts that they have traded on. These margins are used to reimburse the counter parties in the event of a default. As such there is very little counterparty risk. OTC contracts, however, requires the participants to be aware of each other’s credit quality since there is no clearing house guarantee. Of late there have been some changes in the regulations whereby OTC contracts are required to be processed via clearing house.

5. **Products:** Futures and Options are the most commonly traded derivative products on exchange while swaps, forward rate agreements, exotic options, etc., are some of the most widely traded OTC derivative instruments.

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### QUESTIONS FOR PRACTICE

**Q.1 Fill in the Blanks/ MCQs**

1. A ____________ is a security with a price that is dependent upon or derived from one or more underlying assets.
   - (a) derivative
   - (b) commodity
   - (c) investment
   - (d) none of the above

2. Arbitrage trade is a ____________ risk trade where a simultaneous purchase of securities is done in one market and a corresponding sale is carried out in another market.
   - (a) high
   - (b) medium
   - (c) low
   - (d) none of the above

3. ____________ contracts are transacted on a one-to-one basis.
   - (a) Forward
   - (b) Future
   - (c) Option
   - (d) All of the above

4. ____________ are traded through central exchange with publicly visible prices.
   - (a) OTC
   - (b) ETD
   - (c) OED
   - (d) None of the above

5. ____________ is generally defined as the ability of a market participant to buy or sell the desired quantity of an asset, at any time.
   - (a) Will
   - (b) Risk
   - (c) Liquidity
   - (d) none of the above
Q.2 True or False
1. Arbitrageurs exploit imperfections and inefficiencies to their advantage.
2. ETD contracts are loosely regulated.
3. Futures and Options are the most commonly traded derivative products on exchange.
4. A option contract is an agreement to buy or sell an asset on a specified future date for a specified price.
5. Derivatives can either be traded over-the-counter (OTC) or on an exchange.

Q.3 Match the Following
1. ETD (a) non-speculative derivatives
2. OTC (b) long-dated options
3. Transferred risks (c) negotiated liquidation
4. SWAP (d) simple liquidation
5. WARRANTS (e) series of forward derivatives

Q.4 Write Short Notes
1. Derivatives
2. Futures Contracts
3. Functions of Derivatives

Q.5 Answer the Following in Brief/Detail
1. Explain the types and products of derivatives in detail
2. Write in brief about the participants in derivatives market
3. Write in detail about Exchange-traded Derivatives vs. OTC Derivatives

Answer Key
Q.1 1. (a), 2. (c), 3. (a), 4. (b), 5. (c)
Q.2 True – (1, 3, 5) False – (2, 4)
Q.3 1. (d), 2. (c), 3. (a), 4. (e), 5. (b)