

**KARPAGAM ACADEMY OF HIGHER EDUCATION**  
(Deemed to be University Established Under Section 3 of UGC Act 1956)  
Coimbatore – 641 021.

**LECTURE PLAN**  
**DEPARTMENT OF MANAGEMENT**

STAFF NAME : Dr. V. M. Senthilkumar

SUBJECT NAME : Bond, Derivatives and Commodity Market Management.

SUB.CODE: : 17MBAP401C

SEMESTER : IV

CLASS: II MBA - A & B

S.No	Lecture Duration Period	Topics to be Covered	Support Material/Page Nos
<b>UNIT-I</b>			
1	1	Bond Attributes and Bond return and Prices	T1: Pg 166 - 170
2	1	Risk Structure of Bonds	W1
3	1	Forecasting interest rate bond : Term Structure of Interest rates	T1: Pg 173 - 175
4	1	Bond management Strategies	W2
5	1	Passive and Semi Passive Management Strategies	W2
6	1	Active Management Strategies	W2
7	1	New Innovations in Bond	W3
8	1	Bond Portfolio Management	W2
9	1	Recapitulation and discussion of important questions	-
<b>Total No of Hours Planned For Unit 1</b>			<b>9</b>
<b>UNIT-II</b>			
1	1	Introduction to Derivatives : Definitions – Types.	T1 : Pg 220 -223
2	1	Market Index and Types of Index.	T1 : Pg 227 - 237
3	1	Introduction to futures and Options	T1 : Pg 1 - 5
4	1	Forward Contract – Limitations and features	W4
5	1	Future Vs Forward contract	T1 : Pg 7 - 10

6	1	Introduction to options	T1 : Pg 269 - 275
7	1	Distinction between futures and options	T1 : Pg 270 - 275
8	1	Pay off for derivative contracts.	T1 : Pg 277 - 280
9	1	Recapitulation and discussion of important questions	-
<b>Total No of Hours Planned For Unit II</b>			9
<b>UNIT-III</b>			
1	1	Future and Option Trading System, Basis for Trading	W4
2	1	Eligibility of Stock for futures and options trading	W4
3	1	Clearing and Settlement	T1: Pg – 243 -250
4	1	Clearing Entities : Members and Banks	W4
5	1	Mechanism and Settlement Mechanism	W4
6	1	Regulatory Framework	W4
7	1	Case Study	W5
8	1	Recapitulation and discussion of important questions	-
<b>Total No of Hours Planned For Unit III</b>			8
<b>UNIT-IV</b>			
1	1	Introduction to Commodity trading : Commodity Derivatives.	W6
2	1	Commodity Exchanges in India	W6
3	1	Types of Instruments available for trade	W6
4	1	Commodity Pricing	W6
5	1	Commodity Derivates, Hedging and Speculation	T1 : Pg 85 - 90
6	1	Arbitrage in commodity derivate market	T1 : Pg 46 -56
7	1	Case Study	W5
8	1	Recapitulation and discussion of important questions	-
<b>Total No of Hours Planned For Unit IV</b>			8

		UNIT-V	
1	1	Clearing and Settlement	T1 : Pg 526 - 535
2	1	Risk Management in commodity trading	W7
3	1	Clearing and Settlement schedule and Position determination	W7
4	1	Settlement mechanism, Settlement Pricing and Margining	W7
5	1	Final Statement and Exception handling	W7
6	1	Regulatory Framework & Case Study	W 8
7	1	Discussion of previous ESE question papers	-
8	1	Discussion of previous ESE question papers	-
9	1	Discussion of previous ESE question papers	-
10	1	Recapitulation and discussion of important questions	
	<b>Total No of Hours Planned for unit V</b>		10
	Total Planned Hours		44

**TEXT BOOK :**

**T1 : Sunil, K. Parameswaran, (2009), Future and Options: Tata McGraw Hill.**

**WEBSITE**

**W1 : [www.inteligenteconomist.com](http://www.inteligenteconomist.com)**

**W2 : [www.finpipe.com](http://www.finpipe.com)**

**W3: <https://accountinglearning.blogspot.com>**

**W4: <https://www.bseindia.com>file>BCDE>**

**W5: [www.ssrn.com](http://www.ssrn.com)**

**W6 : [www.moneycontrol.com](http://www.moneycontrol.com)**

**W7 : [www.icxindia.com](http://www.icxindia.com)**

**W8: [www.vskills.in>tutorial](http://www.vskills.in>tutorial)**

**SYLLABUS**

Bonds attributes-bond returns and prices-risk structure of bonds- Forecasting interest rate – The term structure of interest rate. Bond management strategies, passive – Semi-active –Active strategies – New innovations in bonds – Bond Portfolio Management.

**Bonds**

A bond is a fixed income instrument that represents a loan made by an investor to a borrower (typically corporate or governmental). A bond could be thought of as an I.O.U. between the lender and borrower that includes the details of the loan and its payments. A bond has an end date when the principal of the loan is due to be paid to the bond owner and usually includes the terms for variable or fixed interest payments that will be made by the borrower. Bonds are used by companies, municipalities, states, and sovereign governments to finance projects and operations. Owners of bonds are debt holders, or creditors, of the issuer.

**Characteristics of a Bond**

- A bond is generally a form of debt which the investors pay to the issuers for a defined time frame. In a layman's language, bond holders offer credit to the company issuing the bond.
- Bonds generally have a fixed maturity date.
- All bonds repay the principal amount after the maturity date; however some bonds do pay the interest along with the principal to the bond holders.

**Types of Bonds**

**Following are the types of bonds:**

**1. Fixed Rate Bonds**

In Fixed Rate Bonds, the interest remains fixed through out the tenure of the bond. Owing to a constant interest rate, fixed rate bonds are resistant to changes and fluctuations in the market.

**2. Floating Rate Bonds**

Floating rate bonds have a fluctuating interest rate (coupons) as per the current market reference rate.

**3. Zero Interest Rate Bonds**

Zero Interest Rate Bonds do not pay any regular interest to the investors. In such types of bonds, issuers only pay the principal amount to the bond holders.

#### 4. Inflation Linked Bonds

Bonds linked to inflation are called inflation linked bonds. The interest rate of Inflation linked bonds is generally lower than fixed rate bonds.

#### 5. Perpetual Bonds

Bonds with no maturity dates are called perpetual bonds. Holders of perpetual bonds enjoy interest throughout.

#### 6. Subordinated Bonds

Bonds which are given less priority as compared to other bonds of the company in cases of a close down are called subordinated bonds. In cases of liquidation, subordinated bonds are given less importance as compared to senior bonds which are paid first.

#### 7. Bearer Bonds

Bearer Bonds do not carry the name of the bond holder and anyone who possesses the bond certificate can claim the amount. If the bond certificate gets stolen or misplaced by the bond holder, anyone else with the paper can claim the bond amount.

#### 8. War Bonds

War Bonds are issued by any government to raise funds in cases of war.

#### 9. Serial Bonds

Bonds maturing over a period of time in installments are called serial bonds.

#### 10. Climate Bonds

Climate Bonds are issued by any government to raise funds when the country concerned faces any adverse changes in climatic conditions.

### Bond Return or Bond Yield and Return

Yield is a general term that relates to the return on the capital you invest in a bond.

There are several definitions that are important to understand when talking about yield as it relates to bonds: coupon yield, current yield, yield-to-maturity, yield-to-call and yield-to-worst.

Let's start with the basic yield concepts.

- **Coupon yield** is the annual interest rate established when the bond is issued. It's the same as the coupon rate and is the amount of income you collect on a bond, expressed as a percentage of your original investment. If you buy a bond for \$1,000 and receive \$45

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in annual interest payments, your coupon yield is 4.5 percent. This amount is figured as a percentage of the bond's par value and will not change during the lifespan of the bond

- **Current yield** is the bond's coupon yield divided by its market price. Here's the math on a bond with a coupon yield of 4.5 percent trading at 103 (\$1,030).

$$\frac{4.5}{103} \times 100 = 4.37\%$$

Say you check the bond's price later, and it's trading at 101 (\$1,010). The current yield has changed:

$$\frac{4.5}{101} \times 100 = 4.46\%$$

If you buy a new bond at par and hold it to maturity, your current yield when the bond matures will be the same as the coupon yield.

#### Yields That Matter More

Coupon and current yield only take you so far down the path of estimating the return your bond will deliver. For one, they don't measure the value of reinvested interest. They also aren't much help if your bond is called early—or if you want to evaluate the lowest yield you can receive from your bond. In these cases, you need to do some more advanced yield calculations. Fortunately, there is a spate of financial calculators available—some that even estimate yield on a before- and after-tax basis. The following yields are worth knowing, and should be at your broker's fingertips:

- **Yield to maturity (YTM)** is the overall interest rate earned by an investor who buys a bond at the market price and holds it until maturity. Mathematically, it is the discount rate at which the sum of all future cash flows (from coupons and principal repayment) equals the price of the bond. YTM is often quoted in terms of an annual rate and may differ from the bond's coupon rate. It assumes that coupon and principal payments are made on time. It does not require dividends to be reinvested, but computations of YTM generally make that assumption. Further, it does not consider taxes paid by the investor or brokerage costs associated with the purchase.
- **Yield to call (YTC)** is figured the same way as YTM, except instead of plugging in the number of months until a bond matures, you use a call date and the bond's call price. This calculation takes into account the impact on a bond's yield if it is called prior to maturity and should be performed using the first date on which the issuer could call the bond.
- **Yield to worst (YTW)** is whichever of a bond's YTM and YTC is lower. If you want to know the most conservative potential return a bond can give you—and you *should* know it for every callable security—then perform this comparison.
- **Yield reflecting broker compensation** is the yield adjusted by the amount of the mark-up or commission (when you purchase) or mark-down or commission (when you sell) and other fees or charges that you are charged by your broker for its services.

**Three**

**Assumptions**

YTM and YTC are based on the following assumptions:

1. You hold your bond to maturity or call date.
2. You reinvest every coupon.
3. All coupons are reinvested at the YTM or YTC, whichever is applicable.

Interest rates regularly fluctuate, making each reinvestment at the same rate virtually impossible. Thus, YTM and YTC are estimates only, and should be treated as such. While helpful, it's important to realize that YTM and YTC may not be the same as a bond's total return. Such a figure is only accurately computed when you sell a bond or when it matures.

**Bond**

**Fact**

Price and yield are inversely related: As the price of a bond goes up, its yield goes down, and vice versa.

**Bond Yield Versus Price**

As bond prices increase, bond yields fall. For example, assume an investor purchases a bond that matures in five years with a 10% annual coupon rate and a face value of \$1,000. Each year, the bond pays 10%, or \$100, in interest. Its coupon rate is the interest divided by its par value.

If interest rates rise above 10%, the bond's price will fall if the investor decides to sell it. For example, imagine interest rates for similar investments rise to 12.5%. The original bond still only makes a coupon payment of \$100, which would be unattractive to investors who can buy bonds that pay \$125 now that interest rates are higher.

If the original bond owner wants to sell her bond, the price can be lowered so that the coupon payments and maturity value equal a yield of 12.5%. In this case, that means the investor would drop the price of the bond to \$927.90. In order to fully understand why that is the value of the bond, you need to understand a little more about how the time value of money is used in bond pricing, which is discussed later in this article.

If interest rates were to fall in value, the bond's price would rise because its coupon payment is more attractive. For example, if interest rates fell to 7.5% for similar investments, the bond seller could sell the bond for \$1,101.15. The further rates fall, the higher the bond's price will rise, and the same is true in reverse when interest rates rise.

In either scenario, the coupon rate no longer has any meaning for a new investor. However, if the annual coupon payment is divided by the bond's price, the investor can calculate the current yield and get a rough estimate of the bond's true yield.

$$\text{Current Yield} = \frac{\text{Annual Coupon Payment}}{\text{Bond Price}}$$



The current yield and the coupon rate are incomplete calculations for a bond's yield because they do not account for the time value of money, maturity value or payment frequency. More complex calculations are needed to see the full picture of a bond's yield.

#### Yield to Maturity

A bond's yield to maturity (YTM) is equal to the interest rate that makes the present value of all a bond's future cash flows equal to its current price. These cash flows include all the coupon payments and its maturity value. Solving for YTM is a trial and error process that can be done on a financial calculator, but the formula is as follows:

$$Price = \sum_{t=1}^T \frac{Cash\ Flows_t}{(1 + YTM)^t}$$

In the previous example, a bond with \$1,000 face value, five years to maturity and \$100 annual coupon payments was worth \$927.90 in order to match a YTM of 12.5%. In that case, the five coupon payments and the \$1,000 maturity value were the bond's cash flows. Finding the present value of each of those six cash flows with a discount or interest rate of 12.5% will determine what the bond's current price should be.

#### Bond Equivalent Yield (BEY)

Bond yields are normally quoted as a bond equivalent yield (BEY), which makes an adjustment for the fact that most bonds pay their annual coupon in two semi-annual payments. In the previous examples, the bonds' cash flows were annual, so the YTM is equal to the BEY. However, if the coupon payments were made every six months, the semi-annual YTM would be 5.979%.

The BEY is a simple annualized version of the semi-annual YTM and is calculated by multiplying the YTM by two. In this example, the BEY of a bond that pays semi-annual coupon payments of \$50 would be 11.958% (5.979% X 2 = 11.958%). The BEY does not account for the time value of money for the adjustment from a semi-annual YTM to an annual rate.

#### Effective Annual Yield (EAY)

Investors can find a more precise annual yield once they know the BEY for a bond if they account for the time value of money in the calculation. In the case of a semi-annual coupon payment, the effective annual yield (EAY) would be calculated as follows:

$$EAY = \left(1 + \frac{YTM}{2}\right)^2 - 1$$



If an investor knows that the semi-annual YTM was 5.979%, then he or she could use the previous formula to find the EAY of 12.32%. Because the extra compounding period is included, the EAY will be higher than the BEY.

### Complications Finding a Bond's Yield

There are a few factors that can make finding a bond's yield more complicated. For instance, in the previous examples, it was assumed that the bond had exactly five years left to maturity when it was sold, which would rarely be the case.

When calculating a bond's yield, the fractional periods can be dealt with simply; the accrued interest is more difficult. For example, imagine a bond has four years and eight months left to maturity. The exponent in the yield calculations can be turned into a decimal to adjust for the partial year. However, this means that four months in the current coupon period have elapsed and there are two more to go, which requires an adjustment for accrued interest. A new bond buyer will be paid the full coupon, so the bond's price will be inflated slightly to compensate the seller for the four months in the current coupon period that have elapsed.

Bonds can be quoted with a "clean price" that excludes the accrued interest or the "dirty price" that includes the amount owed to reconcile the accrued interest. When bonds are quoted in a system like a Bloomberg or Reuters terminal, the clean price is used.

### Bond Yield Summary

A bond's yield is the return to an investor from the bond's coupon and maturity cash flows. It can be calculated as a simple coupon yield, which ignores the time value of money and any changes in the bond's price, or using a more complex method like yield to maturity. The yield to maturity is usually quoted as a bond equivalent yield (BEY), which makes bonds with coupon payment periods less than a year easy to compare.

### Bond risk

#### 1. Interest rate risk

When interest rates rise, bond prices fall. When interest rates fall, bond prices rise. This is a risk if you need to sell a bond before its maturity date and interest rates are up. You may end up selling the bond for less than you paid for it.

#### 2. Inflation risk

This is the risk that the return you earn on your investment doesn't keep pace with inflation. If you hold a bond paying 2% interest and inflation reaches 3%, your return is actually negative (-1%), when adjusted for inflation. You'll still get your principal back when your bond matures, but it will be worth less in today's dollars. Inflation risk increases the longer you hold a bond.

### 3. Market risk

This is the risk that the entire bond market declines. If this happens, the price of your bond investments will likely fall regardless of the quality or type of bonds you hold. If you need to sell a bond before its maturity date, you may end up selling it for less than you paid for it.

### 4. Credit risk

If you buy bonds from a company or government that isn't financially stable, there's more of a risk you'll lose money. This is called credit risk or default risk. Sometimes, the issuer can't make the interest payments to investors. It's also possible the issuer won't pay back the face value of the bond when it matures.

Forecasting interest rates

There was lots of action in financial markets last week, with much of the attention focused on the U.S. Federal Reserve. The interest rate on a 10-year U.S. Treasury bond edged up 10 basis points early in the week in anticipation that the Fed might finally raise its target for the short-term interest rate. But it shed all that and more after the Fed announced it was standing pat for now.



*Price of CBOE option based on 10-year U.S. Treasury yield; to convert to the Treasury yield itself divide by 10. Source: Google Finance.*

If bond investors were rational and unconcerned with risk, the 10-year rate should correspond to a rational expectation of what the average short-term rate is going to be over the next decade, a conjecture known as the expectations hypothesis of the term structure of

interest rates. If instead the 10-year rate was above the average of expected future short rates, you'd expect a higher return from the long-term bond than staying short. If you were risk neutral, you'd prefer to go long in such a setting. But if more investors tried to do that, it would drive the long yield down and the short yield up.

If the expectations hypothesis held true, it's hard to see how swings of the magnitude observed this week could be driven by news about the Fed. Although the Fed did not raise the overnight rate this time, it probably will by the end of this year or early next. A difference of 50 basis points for 1/4 of a year amounts to a difference of  $(1/40)(50) = 1.25$  basis points in a 10-year average, only a tenth the size of the observed movement. Maybe people see the Fed's decision as signaling a change in the interest rate that it will set over a much longer period, not just 2015:Q4. Or perhaps the nature of this week's news altered investors' tolerance for risk. To the extent that the answer is the latter, can we describe empirically the forces that seem to be driving the changes in risk tolerance and quantify the magnitude of the changes over time?

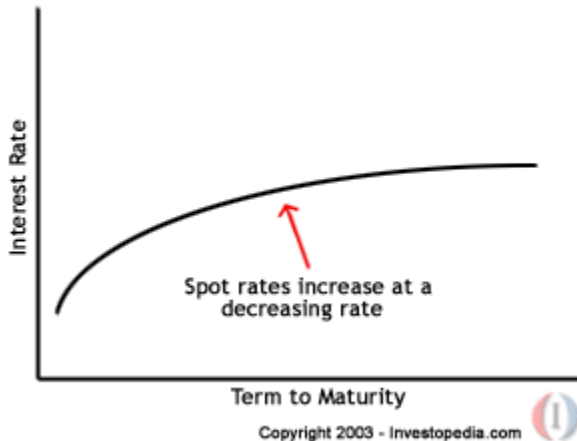
The nice thing about questions like these (unlike many of the other thorny unsettled issues in economics) is that in principle they could be resolved by an objective analysis of the data. All we need is to calculate the rational forecast of future interest rates, and compare those forecasts with the observed changes in long versus short yields.

The first step in this process is to determine the variables that should go into these forecasts. Finding the answer to this question is the topic of a paper that I've recently finished with Michael Bauer. Michael is an economist at the Federal Reserve Bank of San Francisco, though I should emphasize that the views expressed in the paper are purely the personal conclusions of Michael and me and do not necessarily represent those of others in the Federal Reserve System. Our paper confirms the finding from a large earlier literature that the expectations hypothesis cannot fit the data, adding lots of new evidence of predictable changes in long rates that cannot be accounted for by a rational expectation of future short rates. But we disagree with the conclusion from a number of recent studies that claim that all kinds of variables may be helpful for predicting interest rates.

We investigate instead a less restrictive model than the expectations hypothesis, which we refer to as the "spanning hypothesis," that posits that whatever beliefs or risks bond prices may be responding to, these are priced in a consistent way across different bonds with the result that you only need to look at a few summary measures from the yield curve itself to form a rational forecast of any interest rate at any horizon. We calculate these summary measures from the first three principal components of the current set of yields on all the different maturities. Though the principal components are calculated mechanically, they have a simple intuitive interpretation. The first is basically an average of the current interest rate on bonds of all the different maturities (referred to as the "level" of interest rates), the second measures the difference between the yield on long-term bonds and short-term bonds (a.k.a. the "slope" of the yield curve), and the third reflects how much steeper the yield curve is at the short end relative to the long end (the "curvature" of the yield curve)

### **Term Structure Of Interest Rates**

The term structure of interest rates is the relationship between interest rates or bond yields and different terms or maturities. The term structure of interest rates is also known as a yield curve, and it plays a central role in an economy. The term structure reflects expectations of market participants about future changes in interest rates and their assessment of monetary policy conditions.



In general terms, yields increase in line with maturity, giving rise to an upward-sloping yield curve or a normal yield curve. The yield curve is primarily used to illustrate the term structure of interest rates for standard U.S. government-issued securities. The U.S. Treasury yield curve includes the three-month, two-year, five-year and 30-year issued U.S. Treasury debt.

### **The U.S. Treasury Yield Curve**

This yield curve is considered the benchmark for the credit market, as it reports the yields of risk-free fixed income investments across a range of maturities. In the credit market, banks and lenders use this benchmark as a gauge for determining lending and savings rates. Yields along the U.S. Treasury yield curve are primarily influenced by the Federal Reserve's federal funds rate. Other yield curves can also be developed based upon a comparison of credit investments with similar risk characteristics.

Most often, the Treasury yield curve is upward-sloping. One basic explanation for this phenomenon is that investors demand higher interest rates for longer-term investments as compensation for investing their money in longer-duration investments. Occasionally, long-term yields may fall below short-term yields, creating an inverted yield curve that is generally regarded as a harbinger of recession.

### **The Outlook for the Overall Credit Market**

The term structure of interest rates and the direction of the yield curve can be used to judge the overall credit market environment. A flattening of the yield curve means longer-term rates are falling in comparison to short-term rates, which could have implications for a recession. When short-term rates begin to exceed long-term rates, the yield curve is inverted and a recession is likely occurring or approaching.

When longer-term rates fall below shorter-term rates, the outlook for credit over the long term is weak. This is often consistent with a weak or recessionary economy, which is defined by two consecutive periods of negative growth in the gross domestic product (GDP). While other factors including foreign demand for U.S. Treasuries can also influence an inverted yield curve, historically an inverted yield curve has been an indicator in the United States of a recession. The seven preceding economic recessions as of 2016 were all indicated by an inverted yield curve.

The returns of bonds are influenced by a number of factors: changes in interest rates, changes in the credit ratings of the issuers, and changes in the yield curve. A bond strategy is the management of a bond portfolio either to increase returns based on anticipated changes in these bond-pricing factors or to maintain a certain return regardless of changes in those factors. Bond strategies can be classified as active, passive, hybrid.

**Active strategies** usually involve **bond swaps**, liquidating one group of bonds to purchase another group, to take advantage of expected changes in the bond market, either to seek higher returns or to maintain the value of a portfolio. Active strategies are used to take advantage of expected changes in interest rates, yield curve shifts, and changes in the credit ratings of individual issuers.

**Passive strategies** are used, not so much to maximize returns, but to earn a good return while matching cash flows to expected liabilities or, as in indexing, to minimize transaction and management costs. Pension funds, banks, and insurance companies use passive strategies extensively to match their income with their expected payouts, especially bond immunization strategies and cash flow matching. Generally, the bonds are purchased to achieve a specific investment objective; thereafter, the bond portfolio is monitored and adjusted as needed.

**Hybrid strategies** are a combination of both active and passive strategies, often employing immunization that may require rebalancing if interest rates change significantly. Hybrid strategies include contingent immunization and combination matching.

### Active Bond Strategies

The primary objective of an active strategy is for greater returns, such as buying bonds with longer durations in anticipation of lower long-term interest rates; buying junk bonds in anticipation of economic growth; buying Treasuries when the Federal Reserve is expected to increase the money supply, which it usually does by buying Treasuries. Active selection strategies are based on anticipated interest rate changes, credit changes, and fundamental valuation techniques.

### **Interest Rate Anticipation Strategies**

A rate anticipation strategy is one that involves selecting bonds that will increase the most in value from an expected drop in interest rates. If a group of bonds are sold so that others can be purchased based on the expected change in interest rates, then it is referred to as a rate anticipation swap. A total return analysis or horizon analysis is conducted to evaluate several strategies using bond portfolios with different durations to see how they would fare under different interest rate changes, based on expected market changes during the investment horizon.

If interest rates are expected to drop, then bonds with longer durations would be purchased, since they would profit most from an interest rate decrease. If rates were expected to increase, then bonds with shorter durations would be purchased, to minimize interest-rate risk. One means of shortening duration is buying cushion bonds, which are callable bonds with a coupon rate that is significantly higher than the current market rate. Cushion bonds generally have a shorter duration because of their call feature and are cheaper to buy, since they generally have a lower market price than a similar bond without the call feature. Rate anticipation strategies generally require a forecast in the yield curve as well since the change in interest rates may not be parallel.

### **Yield Curve Shifts**

Because the yield curve involves a continuum of interest rates, changes in the yield curve can be described as the type of shift that occurs. The types of yield curve shifts that regularly occur include parallel shifts, twisted shifts, and shifts with humpedness. A parallel shift is the simplest kind of shift in which short-, intermediate-, and long-term yields change by the same amount, either up or down. A shift with a twist is one that involves either a flattening or an increasing curvature to the yield curve or it may involve a steepening of the curve where the yield spread becomes either wider or narrower as one progresses from shorter durations to longer durations. A yield shift with humpedness is one where the yields for intermediate durations changes by a different amount from either short- or long-term durations. If the intermediate-term yields increase less than either the short- or long-term durations, then that is considered to be a positive humpedness, or as it is sometimes referred to as a positive butterfly; the obverse, where short-term and long-term yields decline more (meaning that bond prices increase faster) than intermediate term yields is referred to as negative humpedness or a negative butterfly.

Several bond strategies were designed to profit or maintain value due to a specific change in the yield curve. A ladder strategy is a portfolio with equal allocations for each maturity group. A bullet strategy is a portfolio whose duration is allocated to 1 maturity group. For instance, if interest rates were expected to decline, then a profitable bullet strategy would be one with long-term bonds, which would benefit the most from a decrease in interest rates. A barbell strategy is one that has a concentration in both short and long-term bonds if negative



humpedness in the yield curve is expected, in which case, short- and long-term bonds will increase in price faster than the intermediate-term bonds.

### **Credit Strategies**

There are 2 types of credit investment strategies: quality swaps and credit analysis strategies. Bonds of a higher quality generally have a higher price than those of lower quality of the same maturity. This is based on the creditworthiness of the bond issuer, since the chance of default increases as the creditworthiness of the issuer declines. Consequently, lower quality bonds pay a higher yield. However, the number of bond issues that default tends to increase in recessions and to decline when the economy is growing. Therefore, there tends to be a higher demand for lower quality bonds during economic prosperity so that higher yields can be earned and a higher demand for high quality bonds during recessions, which offers greater safety and is sometimes referred to as the flight to quality. Hence, as an economy goes from recession to prosperity, the credit spread between high and low quality bonds will tend to narrow; from prosperity to recession, the credit spread widens. Quality swaps usually involve a sector rotation where bonds of a specific quality sector are purchased in anticipation of changes in the economy.

A quality swap profits by selling short the bonds that are expected to decline in price relative to the bonds that are expected to increase in price more, which are bought. A quality swap can be profitable whether interest rates increase or decrease, because profit is made from the spread. If rates increase, the quality spread narrows: the percentage decrease in the price of lower quality bonds will be less than the percentage decrease in the price of higher quality bonds. If rates decrease, then the quality spread expands, because the price percentage increase for the lower quality bonds is greater than the price percentage increase for the higher quality bonds.

### **Credit Analysis: the Evaluation of Credit Risk**

A credit analysis strategy evaluates corporate, municipal, or foreign bonds to anticipate potential changes in credit risk, which will usually result in changes in the issuers' bonds prices. Bonds with forecasted upgrades are bought; bonds with potential downgrades are sold or avoided. Generally, changes in credit risk should be determined before any upgrade or downgrade announcements by the credit rating agencies, such as Moody's, Standard & Poor's, or Fitch; otherwise, it may be too late to take advantage of price changes.

### **Fundamental Credit Analysis**

The credit analysis for corporate bonds includes the following:

- fundamental analysis:
  - o comparing the company's financial ratios with other firms in the industry, especially the interest coverage ratio, which is earnings before interest and taxes



- o leverage, which is long-term debt over total assets
- o cash flow, which determines the company's ability to pay interest on debt
- o working capital, which is current assets minus current liabilities
- o return on equity
- asset and liability analysis, which includes assessing:
  - o the market values of the company's assets and liabilities
  - o intangible assets and liabilities, especially unfunded pension liabilities
  - o the age and condition of the plants
  - o foreign-currency exposures
- industrial analysis:
  - o industry and company trends
  - o assessing the potential growth rate for the industry
  - o industrial development stage
  - o the cyclical nature of the industry
  - o competitiveness
  - o labor and union costs and problems
  - o government regulations
- Indenture analysis: how protective covenants compare with industry norms.

Foreign corporate bonds are also analyzed in the same way, but additional issues include the foreign exchange rate and any risks that may occur because of political, social, and economic changes in the countries where the bonds are issued or where the company is located.

Indenture analysis and economic analysis are used to gauge the riskiness of municipal bonds.

Economic analysis:

- debt burden
- financial status

- fiscal problems:
  - o revenues falling below projections
  - o declines in debt coverage ratios
  - o increased use of debt reserves
  - o project cost overruns or delays
  - o frequent rate increases
- and the state of the general and local economy, such as:
  - o decreases in population
  - o loss of large employers
  - o increases in unemployment
  - o declines in property values
  - o the issuance of fewer building permits

#### Multiple Discriminate Models and the Altman Z-Score

Multiple discriminate models are statistical models that are used to generate a credit score for a bond so that its overall credit quality can be summarized, much as a credit score is used to summarize a consumer's creditworthiness. Multiple discriminate models generally assess the most important factors that determine the creditworthiness of the issuer by applying appropriate weights to each of the factors. A popular scoring model is the Altman Z-score model, developed by Edward Altman in 1968.

$$\text{Altman Z-score} = 1.2 \times W + 1.4 \times R + 3.3 \times E + 0.6 \times M + 1.0 \times S$$

- W = ratio of working capital to total assets
- R = ratio of retained earnings to total assets
- E = ratio of earnings before interest and taxes to total assets
- M = market value of equity to total liabilities
- S = ratio of sales to total assets

The Altman Z-score ranges from -5.0 to +20.0. If a company has a Z score above 3.0, then bankruptcy is considered unlikely; lower values indicate an increased risk of business failure.

Altman's double prime model includes the same factors except that the book value rather than the market value of the company to total liabilities is used and the sales to total assets is excluded.

$$\text{Altman Z''-score} = 6.56 \times W + 3.26 \times R + 6.70 \times E + 1.05 \times M$$

Scores above 2.6 are considered creditworthy, while scores below 1.1 indicate an increased risk of business failure. Another score that is commonly used is the Hillegeist Z-score (HS), which is an updated estimate of the Altman Z-score

$$\text{Hillegeist Z-score} = 3.835 + 1.13 \times W + 0.005 \times R + 0.269 \times E + 0.399 \times M - 0.033 \times S$$

The 1 year probability of default =  $1 \div (\exp(\text{HS}) + 1)$ . Like the Altman Z-score, a higher value indicates a lower probability of Bankruptcy.

### **Passive Bond Management Strategies**

In contrast to active management, passive bond management strategies usually involve setting up a bond portfolio with specific characteristics that can achieve investment goals without altering the strategy before maturity. The 3 primary passive bond strategies are index matching, cash flow matching, and immunization.

### **Bond Indexing**

Index matching is constructing a bond portfolio that reflects the returns of a bond index. Some indexes are general, such as the Bloomberg Global Benchmark Bond Indexes or the Barclays Aggregate Indexes; others are specialized, such as the Bloomberg Corporate Bond Indexes. Bond indexing is mainly used to achieve greater returns with lower expenses rather than matching cash flows with liabilities or durations of bonds with liabilities. Because there are several types of indexes, it must 1st be decided which index to replicate. Afterwards, a specific strategy must be selected that best achieves tracking an index, given the resources of the bond fund.

There are several strategies for achieving indexing. Pure bond indexing (aka full replication approach) is to simply buy all the bonds that comprise the index in the same proportions. However, since some indexes consists of thousands of bonds, it may be costly to fully replicate an index, especially for bonds that are thinly traded, which may have high bid/ask spreads. Many bond managers solve this problem by selecting a subset of the index, but the subset may not accurately track the index, thus leading to tracking error.

A cell matching strategy is sometimes used to avoid or minimize tracking error, where the index is decomposed into specific groups with a specific duration, credit rating, sector, and so on and then buying the bonds that have the characteristics of each cell. The quantity of bonds selected for each cell can also mirror the proportions in the bond index.

Rather than taking a sample of a bond index to replicate, some bond managers use enhanced bond indexing, where some bonds are actively selected according to some criteria or forecast, in the hope of earning greater returns. Even if the forecast is incorrect, junk bonds tend to increase in price faster when the economy is improving, because the chance of default declines.

### **Cash Flow Matching**

Cash flow matching involves using dedicated portfolios with cash flows that match specific liabilities. Cash flows include not only coupon payments, but also repayments of principal because the bonds matured or they were called. Cash flow matching is often used by institutions such as banks, insurance companies, and pension funds. Liabilities usually vary as to certainty. For a bank, CD liabilities are certain in both amount and in the timing. In some cases, the liability is certain but the timing is not, such as life insurance payouts and pension distributions. Other liabilities, such as property insurance, are uncertain in both amount and time.

Because most bonds pay semiannual coupons, a cash flow matching strategy is established by first constructing a bond portfolio for the last liability, then for the penultimate liability, and so on, working backward. The cash flows for earlier liabilities are modified according to the amount of cash flow received from coupons of the already selected bonds. However, special consideration must be given to callable bonds and lower quality bonds, since their cash flows are more uncertain, although the risk can be mitigated with options or other derivatives.

Because bonds cannot usually be selected to exactly match the cash flow of liabilities, a certain amount of cash must be held on hand to pay liabilities as they come due. Thus, a drawback to cash flow matching over immunization is that the cash is not fully invested.

### **Bond Immunization Strategies**

Bonds have both interest-rate risk and reinvestment risk. Reinvestment is necessary to earn at least a market return. For instance, a 6% coupon bond does not earn a 6% return unless the coupons are reinvested. A 6% 10-year bond with a par value of \$1000 earns \$600 in interest over the term of the bond. By contrast, \$1000 placed in a savings account that earns 6% compounded semiannually would earn \$806.11 after 10 years. Hence, to earn a 6% return with a coupon bond, the coupons must be reinvested for at least the 6% rate.

Bond immunization strategies depend on the fact that the interest rate risk and the reinvestment risk are reciprocal: when one increases, the other declines. Increases in interest rates causes increased interest rate risk but lower reinvestment risk. When interest rates decline, bond prices increase, but the cash flows from the bonds can only be reinvested at a lower rate without taking on additional risk. A disadvantage of cash flow matching is that

any reinvestment risk cannot be offset by rising bond prices if the bonds are held to maturity.

Classical immunization is the construction of a bond portfolio such that it will have a minimum return regardless of interest rate changes. The immunization strategy has several requirements: no defaults; security prices change only in response to interest rates (for instance, bonds cannot have embedded options); yield curve changes are parallel.

Immunization is more difficult to achieve with bonds with embedded options, such as call provisions, or prepayments made on mortgage-backed securities, since cash flow is more difficult to predict.

The initial value of the bonds must be equal to the present value of the liability using the yield to maturity (YTM) as a discount factor. Otherwise, the modified duration of the portfolio will not match the modified duration of the liability.

Immunization for multiple liabilities is generally achieved by rebalancing, in which bonds are sold, thus freeing up some cash for the current liability, then using the remaining cash to buy bonds that will immunize the portfolio for the later liabilities.

There are several requirements for immunizing multiple liabilities:

- present value of assets must equal the present value of liabilities
- the composite portfolio duration must equal the composite liabilities duration
- the distribution of durations of individual assets must range wider than the distribution of liabilities

### **Contingent Immunization**

Contingent immunization combines active management with a small portion of invested funds and using the remaining portion for an immunized bond portfolio that ensures a floor on the return, while also allowing for a possibly higher return through active management.

The target rate is the lower potential return that is acceptable to the investor, equal to the market rate for the immunized portion of the portfolio. The cushion spread (aka excess achievable return) is the difference in the rate of return if the entire portfolio was immunized over the rate that will be earned because only part of the portfolio will be immunized; the rest will be actively managed in the hope of achieving a return that is greater than if the entire portfolio was immunized.

The safety margin is the cushion, the part that is actively managed. As long as it is positive, the management can continue to actively manage part of the portfolio. However, if the safety margin declines to 0, then active management ends and only the immunized bond

portfolio is maintained. If long-term rates decline, then the safety margin is increased, but any increases in the interest rate will decrease the safety margin, possibly to 0.

The trigger point is the yield level at which the immunization mode becomes necessary in order to achieve the target rate or the target return. At this point, active management ceases.

### **Rebalancing**

Classical immunization may not work if the shifting yield curve is not parallel or if the duration of assets and liabilities diverge, since durations change as interest rates change and as time passes.

Because duration is the average time to receive  $\frac{1}{2}$  of the present value of a bond's cash flow, duration changes with time, even if there are no changes in interest rates. If interest rates do change, then duration will shorten if interest rates increase or lengthen if interest rates decrease.

Hence, to maintain immunization, the portfolio must be rebalanced, which involves bond swaps: adding or subtracting bonds to appropriately modify the bond portfolio duration. Risk can also be mitigated with futures, options, or swaps. The primary drawback to rebalancing is that transaction costs are incurred in buying or selling assets. Hence, transaction costs must be weighed against market risk when bond and liability durations diverge.

Rebalancing can be done with a focus strategy, buying bonds with a duration that matches the liability. Another strategy is the bullet strategy, where bonds are selected that cluster around the duration of the liabilities. A dumbbell strategy can also be pursued, in which bonds of both shorter and longer durations than the liabilities are selected, so that any changes in duration will be covered.

To immunize multiple period liabilities, specific bonds can be purchased that match the specific liabilities or a bond portfolio with the duration equal to the average duration of the liabilities can be selected. Although a bond portfolio with an average duration is easier to manage, buying bonds for each individual liability generally works better. If a portfolio requires frequent rebalancing, a better strategy may be matching cash flows to liabilities instead of durations. Some bond managers use combination matching, or horizon matching, matching early liabilities with cash flows and later liabilities with immunization strategies.

### **Fundamental Valuation Strategies**

Another common strategy to benefit from the bond market is to find and buy underpriced bonds and sell overpriced bonds, based on a fundamental analysis of what prices should be. The intrinsic value of the bond is calculated by discounting the cash flows by a required rate of return that generally depends on market interest rates plus a risk premium for taking on the debt. Naturally, the calculations must take into account any embedded options and the



credit quality of the issuer and the credit ratings of the bond issue. The required rate of return is equal to the following:

Required Rate of Return = Risk-Free Interest Rate + Default Risk Premium + Liquidity Premium + Option Adjusted Spread

Bond managers incorporate the basic characteristics of a bond and its market into models, such as multiple discriminate analysis or CDS analysis, to forecast changes in the credit spread. Option pricing models may also be used to determine the value of embedded options or to forecast changes in the option adjusted spread. Note that forecasts are not nearly as important when using fundamental valuation strategies, since buying bonds that are cheaper because of a temporary mispricing by the market and selling the same type of bonds when the market starts pricing the bonds at their intrinsic value will yield better results regardless of how the bond market changes.

A pure yield pickup strategy (aka substitution swap) is based on the yield pickup swap, which takes advantage of temporary mispricing of bonds, buying bonds that are underpriced relative to the same types of bonds held in the portfolio, thus paying a higher yield, and selling those In the portfolio that are overpriced, which, consequently, pay a lower yield. A pure yield pickup strategy can profit from either a higher coupon income or a higher yield to maturity, or both. However, the bonds must be identical in regard to durations, call features, and default ratings and any other feature that may affect its market value; otherwise, the different prices will probably reflect the differences in credit quality or features rather than a mispricing by the market. Nowadays, it is more difficult to profit from yield pickup strategies, since quant firms are constantly scouring the investment universe for mispriced securities.

A tax swap allows an investor to sell bonds at a loss to offset taxes on capital gains and then repurchase the bonds later with similar but not identical characteristics. The bonds cannot be identical because of wash sale rules that apply to bonds as well stocks. However, the wash sale criteria that apply to bonds are less defined, allowing the purchase of similar bonds with only minor differences.

An intermarket-spread swap is undertaken when the current yield spread between 2 groups of bonds is out of line with their historical yield spread and that the spread is expected to narrow within the investment horizon of the bond portfolio. Spreads exist between bonds of different credit quality, and between differences in features, such as being callable or non-callable, or puttable or non-puttable. For instance, callable/non-callable bond swaps may be profitable if the spread between the 2 is expected to narrow as interest rates decline. As interest rates decline, callable bonds are limited to their call price, since, if the bonds are called, that is what the bondholder will receive. Hence, the price spread between callable and noncallable bonds is narrower during high interest rates and wider during low interest rates. Thus, as interest rates decline, the callable/noncallable spread increases.



## New innovations in Bond

The financial services industry is noteworthy for relentless change. The pace of financial innovation can be relentless, especially in new product development and in product management.

Meanwhile, the industry also has drawn criticism, especially in recent years, for innovations whose full impacts were little understood at the times of their launch, sometimes with unexpected consequences many years down the road. Such is particularly the case with whole classes of new debt securities, debt instruments, and bond types.

### 01. Catastrophe Bonds

Catastrophe bonds are a new species of sovereign debt that act like debt securities until such time as a natural disaster strikes, then they essentially morph into casualty insurance policies that, in effect, pay the issuer.

### 02. Collateralized Debt Obligation

A Collateralized Debt Obligation, or CDO, is a species of debt security that is backed by yet other debt instruments. Bonds built upon bonds, if you will.

### 03. Collateralized Loan Obligation

The Collateralized Loan Obligation, or CLO, is a variation on the concept of the Collateralized Debt Obligation, or CDO. This time, however, the underlying assets are not publicly traded bonds.

### 04. Collateralized Mortgage Obligation

A Collateralized Mortgage Obligation, or CMO, is a form of Collateralized Loan Obligation, or CLO, that is built upon pools of mortgages, often home mortgages.

### 05. Covered Bonds

Covered Bonds have been common in Europe for a significant period of time, but only recently have begun to be issued in the United States. Though they have some

superficial resemblance to a Collateralized Mortgage Obligation, or CMO, there is a crucial difference that dramatically reduces the risk to the holder. In fact, proponents of this bond type point how its structure leads to less risk and higher quality overall.

#### 06. Credit Default Swap

The Credit Default Swap, or CDS, is not a debt instrument per se. Rather, it is a variety of portfolio insurance. In the financial crisis of 2008, problems with pricing and valuing CDS contracts, as well with the ability of counter parties to meet their contractual obligations, were rife and exacerbated the economic crunch.

#### 07. Deathbed Bonds

Deathbed Bonds are featured in various investment schemes that have drawn the attention of regulators. These schemes are utilized by speculators who try to take advantage of provisions in the bond covenants that are designed to make them more attractive to long-term individual investors.

#### 08. Junk Bond Finance

Junk Bond Finance, using high yield debt as a substitute for equity financing, became a hot topic in the 1980s, then fell into some disrepute, but still holds a significant place in the financial system.

#### 09. Mortgage Backed Security

A Mortgage Backed Security, or MBS, is a debt security backed by home mortgages. It is generally synonymous with Collateralized Mortgage Obligation, or CMO.

#### 10. Real Estate Mortgage Investment Conduit

A Real Estate Mortgage Investment Conduit, or REMIC, is yet another synonym, generally speaking, for Collateralized Mortgage Obligation, or CMO, and Mortgage Backed Security, or MBS.

#### 11. Sukuk

One of the core principals underlying Islamic finance is avoiding the payment or collecting of interest. To appeal to strict Muslim investors and savers, a variety of financial instruments have been created that serve the same purpose as bonds and other debt securities, but on which interest technically is not paid. Sukuk is a term referring to various types of quasi-debt securities that have been developed to meet the strictures of Islamic finance.

#### 12. Tranche

A variety of debt securities listed above are divided into what are called different tranches. These debt instruments include, for example:

- Collateralized Debt Obligation, or CDO
- Collateralized Loan Obligation, or CLO
- Collateralized Mortgage Obligation, or CMO
- Mortgage Backed Security, or MBS
- Real Estate Mortgage Investment Conduit, or REMIC

Each tranche has different terms and conditions, and a different risk/return profile from its siblings derived from the same pool of underlying assets. Read on for more details.

### **Bond portfolio Management Strategies**

Bond portfolio management strategies are based on managing fixed income investments in pursuit of a particular objective – usually maximizing return on investment by minimizing risk and managing interest rates. The management of the portfolio can be done by professional investment managers or by investors themselves. Here's a look at the key strategies:

#### **1. Interest Rate Anticipation**

Bond portfolio management strategies that involve forecasting interest rates and altering a bond portfolio to take advantage of those forecasts are called “interest rate anticipation” strategies. Interest rates are the most important factor in the pricing of bonds. The price of a bond is based on its interest rate, or yield, at any particular time. The most important influence on a bond's yield is the term structure of interest rates. Generally, the

market interest rate for any particular term of bond is represented by the yields on government bonds, as these are viewed as highly liquid and of very low default risk.

Basic interest rate anticipation strategy involves moving between long-term government bonds and very short-term treasury bills, based on a forecast of interest rates over a certain time horizon.

Since long-term bonds change the most in value for a given change in interest rates, a manager would want to hold long-term bonds when rates are falling. This would provide the maximum increase in price for a portfolio. The reverse is true in a rising interest rate environment. Long-term bonds fall the most in price for a given rise in interest rates and a manager would want to hold treasury bills. Treasury bills have a very short duration and do not change very much in value.

Yield curve strategies are more sophisticated interest rate anticipation strategies that take into account the differences in interest rates for different terms of bonds, called the “term structure” of interest rates. A chart of the interest rates for bonds of different terms is called the “yield curve.” A yield curve strategy would position a bond portfolio to profit the most from an expected change in the yield curve, based on an economic or market forecast.

## **2. Sector Rotation in Bonds**

Bond portfolio management strategies based on sector rotation involve varying the weight of different types of bonds held within a portfolio. An investment manager will form an opinion on the valuation of a specific sector of the bond market, based on fundamental credit factors, technical factors (such as supply and demand), and relative valuations compared to historical norms within that sector. A manager will usually compare her portfolio to the weightings of the benchmark index that she is being compared to on a performance basis.

## **3. Security Selection for Bonds**

Security selection for bond management involves fundamental and credit analysis and quantitative valuation techniques at the individual security level. Fundamental analysis of a bond considers the nature of the security and the potential cash flows attached to it. Credit analysis evaluates the likelihood that the payments will continue to be made over the bond’s term. Modern quantitative techniques use statistical analysis and advanced mathematical techniques to attach values to the cash flows and assess the probabilities inherent in their nature.

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UNIT: II(Introduction to Derivatives)

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S. No	Question	Option - I	Option - II	Option - III	Option - IV	Answer
1	Which of the following is not a strategy for income immunization?	Cash matching strategy	Horizon matching strategy	Contingent immunization	Duration matching strategy	Contingent immunization
2	A market interest rate for specific type of bond is classified as bond's	required rate of return	required option	required rate of redemption	required rate of earning	required rate of return
3	Bond's promised rate of return is also considered as	yield to earning	yield to investors	yield to maturity	yield to return	yield to maturity
4	Price of an outstanding bond decreases when market rate is	increased	decreased	earned	never changed	increased
5	Rate of interest which is usually discussed by investors whenever rate of return is discussed, is classified as	yield to earning	yield to investors	yield to maturity	yield to return	yield to maturity
6	If default probability is zero and bond is not called then yield to maturity is	mature expected return rate	lower than expected return rate	higher than expected return rate	equal to expected return rate	equal to expected return rate
7	Which of the following is a disadvantage of the immunization approach?	Immunization requires periodic rebalancing of the portfolio	Immunization neutralizes the effects of price risk and reinvestment risk	Immunization is suitable for investors who want to accumulate value	Immunization assumes that the yield curve is upward sloping	Immunization requires periodic rebalancing of the portfolio

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8	Which of the following provides income that is fully exempt from taxation for the individual investor?	Treasury bills	Municipal bonds	Treasury notes	Preferred stocks	Municipal bonds
9	Which of the following is a residual claim on a firm's assets?	Common stock	Preferred stock	Preference shares	Participating preferred stock	Common stock
10	Which of the following occurs four trading days before the date of record?	Payment date	Distribution date	Declaration date	Ex-dividend date	Ex-dividend date
11	Which of the following types of assets is least risky?	Long-term corporate bonds	Stocks	Options and futures	Short-term corporate bonds	Short-term corporate bonds
12	Which of the following types of assets offers the highest expected return?	Stocks	Long-term government bonds	Options and futures	Long-term corporate bonds.	Options and futures
13	Which of the following types of financial assets represents a creditor relationship with an entity?	Futures	Options	Bonds	Stocks	Bonds
14	Which of the following types of assets represents ownership interest in a corporation?	Options	Options	Stocks	Futures	Stocks
15	Financial assets are also called:	tangible assets	physical assets	real assets	Securities	Securities
16	Second mortgages pledged against bond's security are referred as	loan mortgages	medium mortgages	senior mortgages	junior mortgages	junior mortgages
17	Long period of bond maturity leads to	more price	stable prices	standing	mature	more price

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		change		prices	prices	change
18	If coupon rate is equal to going rate of interest then bond will be sold	at par value	below its par value	more than its par value	seasoned par value	at par value
19	Falling interest rate leads change to bondholder income which is	reduction in income	increment in income	matured income	frequent income	reduction in income
20	Bonds issued by corporations and exposed to default risk are classified as	corporation bonds	default bonds	risk bonds	zero risk bonds	corporation bonds
21	Coupon payment is calculated with help of interest rate, then this rate considers as	payment interest	par interest	coupon interest	yearly interest rate	coupon interest
22	An effect of interest rate risk and investment risk on a bond's yield is classified as	reinvestment premium	investment risk premium	maturity risk premium	defaulter's premium	maturity risk premium
23	Coupon payment of bond which is fixed at time of issuance	remains same	becomes stable	becomes change	becomes low	remains same
24	Exchange markets and over counter markets are considered as two types of	floating market	risky market	secondary market	primary market	secondary market
25	Current market price of common stock is Rs. 15 and conversion rate received on conversion is Rs. 320 to calculate	Rs. 3,800	Rs. 2,800	Rs. 4,800	Rs. 5,800	Rs. 4,800
26	Bonds that are backed by cash flow from project and are sold to finance particular project are classified as	finance bonds	revenue bonds	financing bonds	project bonds	revenue bonds
27	Treasury notes that provide returns tied to inflation rate are classified as	clean price bonds	discount index bonds	premium index bonds	inflation index bonds	inflation index bonds



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28	Type of bonds in which there are many maturity dates and part of issue is paid off at every maturity date is considered as	pledged bonds	serial bonds	series bonds	parallel bonds	serial bonds
29	Which of the following bonds do not pay interest during the life of the bonds?	Municipal bonds	Callable bonds	Convertible bonds	Zero coupon bonds	Zero coupon bonds
30	_____ is a temporary restriction on program trading in a particular security or market, usually to reduce dramatic price movements.	SuperDot	NYSE direct	Trading curb	Ticker tape	Trading curb
31	Bond prices are expressed as a percentage of:	Discount value	Par value	Future value	Intrinsic value	Par value
32	Which of the following industry is sensitive to business cycle and price changes?	Growth industry	Cyclical industry	Defensive industry	Interest sensitive industry	Cyclical industry
33	On which of the following financial statements would you expect to find assets, liabilities, and stockholders' equity?	Balance sheet	Income statement	Statement of cash flows	Statement of changes in equity	Balance sheet
34	Which of the following is a passive bond management strategy?	Intermarket spread swap	Rate anticipation swap	Bond laddering	Pure yield pickup swap	Bond laddering
35	Which of the following is not a portfolio strategy for investors who want to accumulate value over some	Buy and hold	Cash matching	Contingent immunization	Duration matching	Buy and hold

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	horizon?					
36	Which of the following strategies involves cash matching over the short horizon and duration matching over the long horizon?	Contingent immunization	Horizon matching	Duration matching	Price immunization	Horizon matching
37	When interest rates increase, the duration of a 20-year bond selling at a discount:	remains the same	increases at first, then declines	decreases at first, then increases	decreases	decreases
38	Of the alternatives available, the bond that has the longest duration is the bond with a:	30-year maturity and a 11% coupon	20-year maturity and a 13% coupon	15-year maturity and a 4% coupon	28-year maturity and a 0% coupon	28-year maturity and a 0% coupon
39	Which bond has the longest duration?	15-year maturity, 0% coupon	30-year maturity, 8% coupon	20-year maturity, 6% coupon	20-year maturity, 10% coupon	30-year maturity, 6% coupon
40	Of the alternatives available, the bond that has the shortest duration is the bond with a	30-year maturity, 10% coupon	20-year maturity, 8% coupon	20-year maturity, 0% coupon	20-year maturity, 6% coupon	20-year maturity, 8% coupon

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41	If a bond manager swaps a bond for one that is identical in terms of coupon rate, maturity and credit quality, but offers a higher yield to maturity, the swap is	a substitution swap	a tax swap	an international swap	an interest rate anticipation swap	a substitution swap
42	The duration of a zero-coupon bond is	shorter than the bond's maturity in years	equal to the bond's maturity in years	equal to one-half the bond's maturity in years	equal to the bond's maturity in years divided by its yield to maturity	equal to one-half the bond's maturity in years
43	The interest rate risk of a bond normally is	lower for longer duration	lower for zero-coupon bonds	greater for shorter maturities	lower for higher coupons	lower for higher coupons
44	If a bond manager swaps a bond for another bond with a higher yield to maturity and a longer duration, the swap is	an international swap	an national swap	a substitution swap	a pure yield pickup swap	a pure yield pickup swap
45	The duration of a bond normally decreases with a decrease in	convexity	inflation	coupon rate	time to maturity	time to maturity
46	Which of the following might be found in a bond indenture?	A dividend restriction clause	A sinking fund clause	A subordination clause	All Clause	All Clause
47	The contract between a bond issuer and a bondholder is called	a debenture	a collateral	a general obligation	an indenture	an indenture

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48	Which of the following would cause the required return on a bond to increase, everything else held equal?	The bond is senior to the issuer's other bonds	The borrower is subject to dividend restrictions	The bond's rating changes from B to BB	The bond is callable	The bond is callable
49	"The yield curve will be downward sloping if the market believes that future short-term interest rates will be less than current short-term interest rate." This statement about the term structure of interest rates is most consistent with the:	unbiased expectations hypothesis.	local expectations hypothesis.	forward rate hypothesis	market segmentations hypothesis	local expectations hypothesis.
50	Which of the following is another name for an unsecured bond?	Junk bond	Speculative bond	Obligation trust bond	Debenture	Obligation trust bond
51	Which of the following would cause a bond's required return to increase?	Rating changes from B to BB.	Call provision	Dividend restrictions	Bond is convertible	Call provision
52	Which of the following causes a lower required return on a bond?	The bond is callable	The bond is convertible	The bond's rating changes from AA to A	credit rating	The bond is convertible
53	Which of the following causes a lower required return on a bond?	Dividend restrictions are placed on the company.	The bond is subordinated to other debt.	The bond has no collateral	Bond callable	Dividend restrictions are placed on the company.
54	Bonds rated double A and higher are called:	speculative grade bonds.	supreme bonds.	investment grade bonds	high-grade bonds	high-grade bonds

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BATCH-2017-2019

55	_____ was the first to introduce mortgage pass-through securities.	Chase Manha tatan	Citicorp	FNMA	GNMA	GNMA
56	_____ are financial assets.	Bonds	Machines	Stocks	Bond and Stock	Bond and Stock
57	Firms that specialize in helping companies raise capital by selling securities are called _____.	commercial b anks	investment banks	savings ban ks	credit unio ns	investment banks
58	The sale of a mortgage portfolio by setting up mortgage pass-through securities is an example of _____.	credit enhanc ement	securitizatio n	unbundling	derivative s	securitizatio n
59	The means by which individuals hold their claims on real assets in a well-developed economy are _____.	investment as sets	depository a ssets	derivative a ssets	financial a ssets	financial ass ets
60	A substitution swap is an exchange of bonds undertaken to _____.	change the credit risk of a portfolio.	extend the duration of a portfolio.	reduce the duration of a portfolio.	profit from apparent mispricing between two bonds.	profit from apparent mispricing between two bonds.

Introduction to Derivatives: Definition – Types – Market index: Types of index; Introduction to futures and options; Forward contract – Limitations – Features, futures Vs forward contract. Introduction to options – Distinction between futures and options, pay off for derivative contracts.

### **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.

### **Four Types of Derivative contracts**

Derivative contracts are of several types. The most common types are forwards, futures, options and swap.

#### **1. Forward Contracts**

A forward contract is an agreement between two parties – a buyer and a seller to purchase or sell something at a later date at a price agreed upon today. Forward contracts, sometimes called forward commitments, are very common in everyone life. Any type of contractual agreement that calls for the future purchase of a good or service at a price agreed upon today and without the right of cancellation is a forward contract.

#### **2. Future Contracts**

A futures contract is an agreement between two parties – a buyer and a seller – to buy or sell something at a future date. The contract trades on a futures exchange and is subject to a daily settlement procedure. Future contracts evolved out of forward contracts and possess many of the same characteristics. Unlike forward contracts, futures contracts trade on organized exchanges, called future markets. Future contracts also differ from forward contracts in that they are subject to a daily settlement procedure. In the daily settlement, investors who incur losses pay them every day to investors who make profits.

#### **3. Options Contracts**

Options are of two types – calls and puts. Calls give the buyer the right but not the obligation to buy a given quantity of the underlying asset, at a given price on or before a given future date. Puts give the buyer the right, but not the obligation to sell a given quantity of the underlying asset at a given price on or before a given date.

#### 4. Swaps

Swaps are private agreements between two parties to exchange cash flows in the future according to a prearranged formula. They can be regarded as portfolios of forward contracts. The two commonly used swaps are interest rate swaps and currency swaps.

1. **Interest rate swaps:** These involve swapping only the interest related cash flows between the parties in the same currency.
2. **Currency swaps:** These entail swapping both principal and interest between the parties, with the cash flows in one direction being in a different currency than those in the opposite direction.

#### Market Index

A market index is a weighted average of several stocks or other investment vehicles from a section of the stock market, and it is calculated from the price of the selected stocks. Market indexes are intended to represent an entire stock market and track the market's changes over time.

Index values help investors track changes in market values over long periods of time. For example, the widely used Standard and Poor's 500 Index is computed by combining 500 large-cap U.S. stocks into one index value. Investors can track changes in the index's value over time and use it as a benchmark for their own portfolio returns.

#### Types of Index

##### Global

- BBC Global 20
- FTSE/Mondo Vision Exchanges Index
- MSCI World
- S&P Global 100
- S&P Global 1200
- Russell Global Launched 17/01/07
- The Global Dow - Global version of the Dow Jones Industrial Average
- Dow Jones Global Titans 50
- Dow Jones Global Total Stock Market Index
- FTSE All-World index series



**India**

- Bombay Stock Exchange(BSE) - Sensex
- National Stock Exchange of India(NSE) - Nifty-Fifty
- MCX Stock Exchange [Multi commodity exchange- SX-40]

**Introduction to futures**

A Futures Contract is a legally binding agreement to buy or sell any underlying security at a future date at a pre determined price. The Contract is standardised in terms of quantity, quality, delivery time and place for settlement at a future date (In case of equity/index futures, this would mean the lot size). Both parties entering into such an agreement are obligated to complete the contract at the end of the contract period with the delivery of cash/stock.

Each Futures Contract is traded on a Futures Exchange that acts as an intermediary to minimize the risk of default by either party. The Exchange is also a centralized marketplace for buyers and sellers to participate in Futures Contracts with ease and with access to all market information, price movements and trends. Bids and offers are usually matched electronically on time-price priority and participants remain anonymous to each other. Indian equity derivative exchanges settle contracts on a cash basis.

To avail the benefits and participate in such a contract, traders have to put up an initial deposit of cash in their accounts called as the margin. When the contract is closed, the initial margin is credited with any gains or losses that accrue over the contract period. In addition, should there be changes in the Futures price from the pre agreed price, the difference is also settled daily and the transfer of such differences is monitored by the Exchange which uses the margin money from either party to ensure appropriate daily profit or loss. If the minimum maintenance margin or the lowest amount required is insufficient, then a margin call is made and the concerned party must immediately replenish the shortfall. This process of ensuring daily profit or loss is known as mark to market. However, if and ever a margin call is made, funds have to be delivered immediately as not doing so could result in the liquidation of your position by the Exchange or Broker to recover any losses that may have been incurred. When the delivery date is due, the amount finally exchanged would hence, be the spot differential in value and not the contract price as every gain and loss till the due date has been accounted for and appropriated accordingly.

For example, on one hand we have A, who holds equity of XYZ Company, currently trading at Rs 100. A expects the price go down to Rs 90. This ten-rupee differential could result in reduction of investment value.

On the other hand, we have B, who has been tracking the performance of XYZ Company and given his intuition and expertise, feels that the stock price could increase to Rs 130 in the next three months. He wishes to buy the stock at a lower price now to sell later when the price increases in the future, thereby making a quick profit in the bargain. However, he can only pay a nominal sum now and arrange for the necessary funds to buy the stock in three months.

Now, A and B submit their orders to the Exchange to enter into a futures contract with a maturity period of three months (this is the maximum available time limit on the Exchange for the Futures segment). Once the orders are matched and traded, both traders hold their desired Futures positions as decided, so now A would hold a short position against his holdings. Thus if the stock price fell below Rs 100, A would not lose the value of his holdings as he remains hedged against the lowering of price.

In the above example A would be the seller of the contract while B would be the buyer. A's market position hence would be short (sell) while B would go long (buy). This thus reflects the expectations that each party has from the Futures Contract they have participated in - B hopes that the asset price is going to increase, while A expects that it will decrease.

Futures are used to both hedge and speculate possible price movements of stock. Participants in a Futures market can profit from such contracts because they can enjoy benefits without actually having to hold on the stock until expiry. In the above example, B is holding his buy position with the expectation of a possible increase in the price until the contract expires and can also hedge his position by entering into a another Futures Contract with C as a seller, with the same Contract specifications – ie – quantity, quality, price, time period and location. B would thus, be able to deflect or offset any loss he may incur in his agreement with A.

To sum up, Futures are leveraged standardised contracts with linear returns in reference to the underlying asset and are traded on a secure and monitored Exchange platform, thereby reducing credit risk.

### **Introduction to option**

Options are a financial derivative sold by an option writer to an option buyer. The contract offers the buyer the right, but not the obligation, to buy (call option) or sell (put option) the underlying asset at an agreed-upon price during a certain period of time or on a specific date. The agreed upon price is called the strike price. American options can be exercised any time before the expiration date of the option, while European options can only be exercised on the expiration date (exercise date). Exercising means utilizing the right to buy or the sell the underlying security.

Options are versatile securities. Traders buy options to speculate or to hedge current holdings. Trader also attempt to generate income through option writing. Option on stocks typically represent 100 shares. So if an option costs \$0.35, buying one option would cost \$35 (\$0.35 x 100).

In terms of speculation, option buyers and writers have conflicting views regarding the outlook on the performance of an underlying security.

### **Call Option**

Call options provide the option buyer with the right to buy an underlying security at the strike price, so the buyer wants the stock to go up. Conversely, the option writer needs to give the underlying security to the option buyer, at the strike price, in the event that the stock's market price exceeds the strike price.

An option writer who sells a call option believes that the underlying stock's price will drop or stay the same relative to the option's strike price during the life of the option, as that is how they will reap maximum profit. The writer's maximum profit is the premium received when selling the option.

If the buyer is right, and the stock rises above the strike price, the buyer will be able to acquire the stock for a lower price (strike price) and then sell it for a profit at the current market price. However, if the underlying stock is not above the strike price on the expiration date, the option buyer loses the premium paid for the call option.

Risk to the call buyer is limited to the premium paid for the option, no matter how much the underlying stock moves. The profit at expiration, if applicable, is:  $\text{Current market price of Underlying} - (\text{Strike Price} + \text{Premium paid}) = \text{Profit}$ . This would be multiplied by the number of contracts and then multiplied by 100 (assuming each contract represents 100 shares). This will give the total profit or loss to the trader in dollars.

The risk to the call writer is much greater. Their maximum profit is the premium received, but they face infinite risk because the stock price could continue to rise against them. To offset this risk, many option writers use covered calls.

### **Put Option**

Put options give the option buyer the right to sell at the strike price, so the put buyer wants the stock to go down. The opposite is true for a put option writer. For example, a put option buyer is bearish on the underlying stock and believes its market price will fall below the specified strike price on or before a specified date. On the other hand, an option writer who writes a put option believes the underlying stock's price will stay the same or increase over the life of the option.

If the underlying stock's price closes above the specified strike price on the expiration date, the put option writer's maximum profit is achieved. They get to keep the entire premium received.

Conversely, a put option holder benefits from a fall in the underlying stock's price below the strike price. If the underlying stock's price falls below the strike price, the put option writer is obligated to purchase shares of the underlying stock at the strike price. The put option buyer's profit, if applicable, is calculated by taking the Strike Price – (Current market price + Premium paid). This is then multiplied by 100 (if each contract is 100 shares) and the number of contracts bought.

The risk to the option writer if the stock price falls is that they have to buy the stock at the strike price. Some traders write put options at strike prices where they want to buy stock anyway. If the price falls to that price, they buy the stock because the option buyer will exercise the option. They get the stock at the price they want, with the added benefit of receiving the option premium.

### **Forward contract**

A forward is an agreement between two counterparties - a buyer and seller. The buyer agrees to buy an underlying asset from the other party (the seller). The delivery of the asset occurs at a later time, but the price is determined at the time of purchase.

### **Features of forward contracts**

- Highly customized - Counterparties can determine and define the terms and features to fit their specific needs, including when delivery will take place and the exact identity of the underlying asset.

- All parties are exposed to counterparty default risk - This is the risk that the other party may not make the required delivery or payment.
- Transactions take place in large, private and largely unregulated markets consisting of banks, investment banks, government and corporations.
- Underlying assets can be a stocks, bonds, foreign currencies, commodities or some combination thereof. The underlying asset could even be interest rates.
- They tend to be held to maturity and have little or no market liquidity.
- Any commitment between two parties to trade an asset in the future is a forward contract.

### **Example: Forward Contracts**

Let's assume that you have just taken up sailing and like it so well that you expect you might buy your own sailboat in 12 months. Your sailing buddy, John, owns a sailboat but expects to upgrade to a newer, larger model in 12 months. You and John could enter into a forward contract in which you agree to buy John's boat for \$150,000 and he agrees to sell it to you in 12 months for that price. In this scenario, as the buyer, you have entered a long forward contract. Conversely, John, the seller will have the short forward contract. At the end of one year, you find that the current market valuation of John's sailboat is \$165,000. Because John is obliged to sell his boat to you for only \$150,000, you will have effectively made a profit of \$15,000. (You can buy the boat from John for \$150,000 and immediately sell it for \$165,000.) John, unfortunately, has lost \$15,000 in potential proceeds from the transaction.

Like all forward contracts, in this example, no money exchanged hands when the contract was negotiated and the initial value of the contract was zero.

### **Limitations of Forward contract**

- 1) There is not a liquid market for forward contracts, no secondary market. Might be hard to match up the two parties to the transaction.
- 2) High default risk. No outside party guaranteeing the transaction, like there is in the futures market.
- 3) Requires actual delivery to complete the contract.

### **Future Vs Forward Contract**

<b>BASIS FOR COMPARISON</b>	<b>FORWARD CONTRACT</b>	<b>FUTURES CONTRACT</b>
Meaning	Forward Contract is an agreement between parties to buy and sell the underlying asset at a specified date and agreed rate in future.	A contract in which the parties agree to exchange the asset for cash at a fixed price and at a future specified date, is known as future contract.
What is it?	It is a tailor made contract.	It is a standardized contract.
Traded on	Over the counter, i.e. there is no secondary market.	Organized stock exchange.
Settlement	On maturity date.	On a daily basis.
Risk	High	Low
Default	As they are private agreement, the chances of default are relatively high.	No such probability.
Size of contract	Depends on the contract terms.	Fixed
Collateral	Not required	Initial margin required.
Maturity	As per the terms of contract.	Predetermined date
Regulation	Self regulated	By stock exchange
Liquidity	Low	High

**Difference between futures and option**

<b>BASIS FOR COMPARISON</b>	<b>FUTURES</b>	<b>OPTIONS</b>
Meaning	Futures contract is a binding	Options are the contract in which the

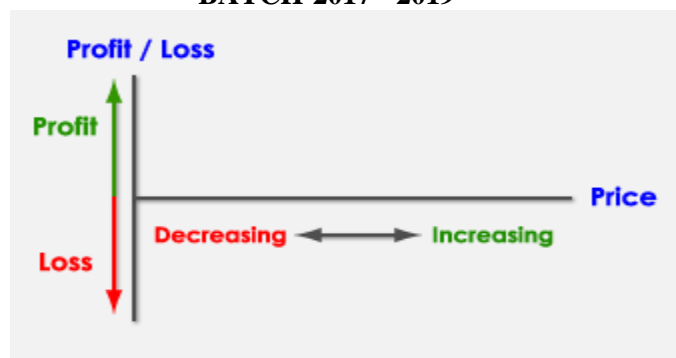
<b>BASIS FOR COMPARISON</b>	<b>FUTURES</b>	<b>OPTIONS</b>
	agreement, for buying and selling of a financial instrument at a predetermined price at a future specified date.	investor gets the right to buy or sell the financial instrument at a set price, on or before a certain date, however the investor is not obligated to do so.
Obligation of buyer	Yes, to execute the contract.	No, there is no obligation.
Execution of contract	On the agreed date.	Anytime before the expiry of the agreed date.
Risk	High	Limited
Advance payment	No advance payment	Paid in the form of premiums.
Degree of profit/loss	Unlimited	Unlimited profit and limited loss.

**Pay off for derivative contracts**

**“Pay off diagrams” a good way to understand the profits and losses with a strategy**

A convenient way to envision what happens with option strategies as the value of the underlying asset changes is with the use of a profit and loss diagram, known as a “payoff diagram”. A Payoff diagram is a graphical representation of the potential outcomes of a strategy. Results may be depicted at any point in time, although the graph usually depicts the results at expiration of the options involved in the strategy.

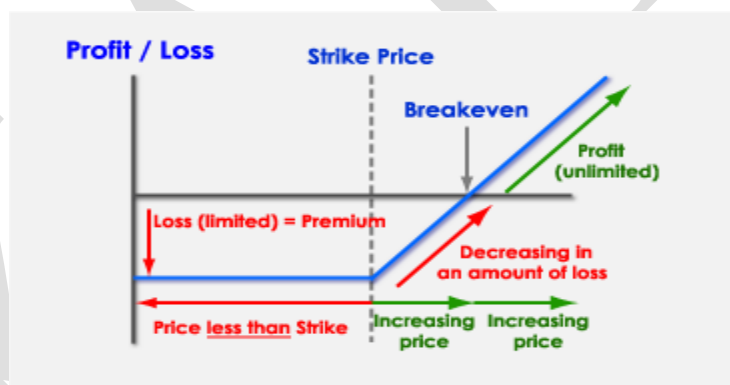




The vertical axis of the diagram reflects profits or losses on option expiration day resulting from particular strategy, while the horizontal axis reflects the underlying asset price on option expiration day. At expiration, there is no time value left, so the option will sell for its intrinsic value. By convention, the diagrams ignore the effect of commissions you have to pay.

**“Profit or loss in Baht are graphed on the vertical axis  
Various underlying asset prices are graphed on the horizontal axis”**

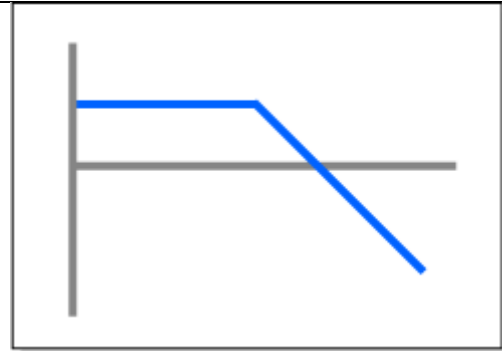
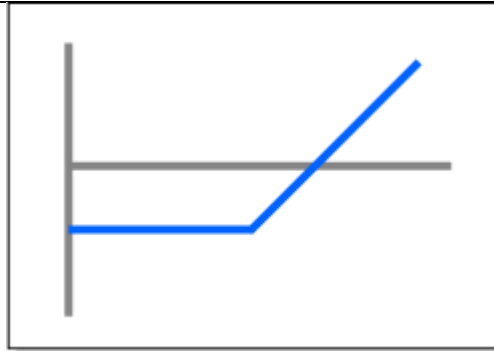
#### Example - Long Call Options



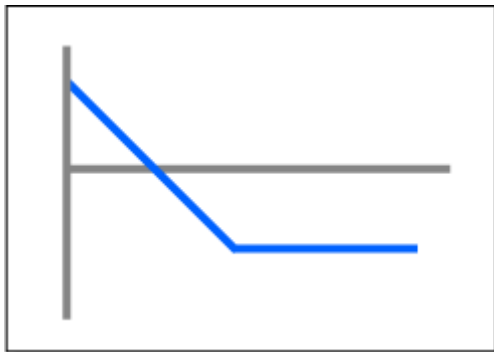
According to the Payoff diagram of Long Call Options strategy, it can be seen that if the underlying asset price is lower than the strike price, the call options holders lose money which is the equivalent of the premium value, but if the underlying asset price is more than the strike price and continually increasing, the holders' loss is decreasing until the underlying asset price reach the breakeven point, and since then the call options holders profit from their long call positions.

#### More payoff examples of 4 main strategies of options investment

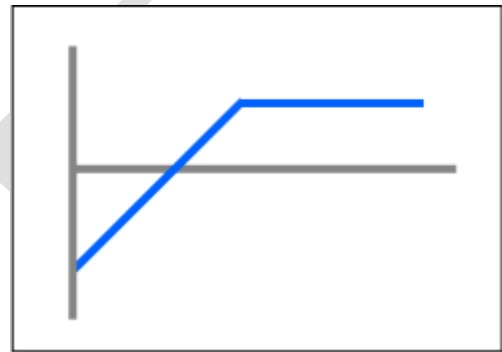
Long Call Options	Short Call Options
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Long Put Options



Short Put Options



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- 1) There is not a liquid market for forward contracts, no secondary market. Might be hard to match up the two parties to the transaction.
- 2) High default risk. No outside party guaranteeing the transaction, like there is in the futures market.
- 3) Requires actual delivery to complete the contract.

### **Future Vs Forward Contract**

<b>BASIS FOR COMPARISON</b>	<b>FORWARD CONTRACT</b>	<b>FUTURES CONTRACT</b>
Meaning	Forward Contract is an agreement between parties to buy and sell the underlying asset at a specified date and agreed rate in future.	A contract in which the parties agree to exchange the asset for cash at a fixed price and at a future specified date, is known as future contract.
What is it?	It is a tailor made contract.	It is a standardized contract.
Traded on	Over the counter, i.e. there is no secondary market.	Organized stock exchange.
Settlement	On maturity date.	On a daily basis.
Risk	High	Low
Default	As they are private agreement, the chances of default are relatively high.	No such probability.
Size of contract	Depends on the contract terms.	Fixed
Collateral	Not required	Initial margin required.
Maturity	As per the terms of contract.	Predetermined date
Regulation	Self regulated	By stock exchange
Liquidity	Low	High

**Difference between futures and option**

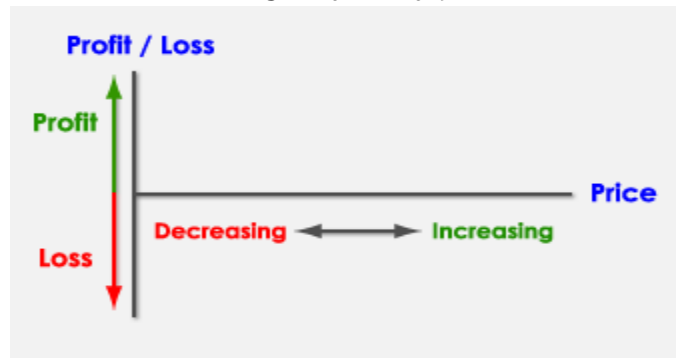
<b>BASIS FOR COMPARISON</b>	<b>FUTURES</b>	<b>OPTIONS</b>
Meaning	Futures contract is a binding	Options are the contract in which the

<b>BASIS FOR COMPARISON</b>	<b>FUTURES</b>	<b>OPTIONS</b>
	agreement, for buying and selling of a financial instrument at a predetermined price at a future specified date.	investor gets the right to buy or sell the financial instrument at a set price, on or before a certain date, however the investor is not obligated to do so.
Obligation of buyer	Yes, to execute the contract.	No, there is no obligation.
Execution of contract	On the agreed date.	Anytime before the expiry of the agreed date.
Risk	High	Limited
Advance payment	No advance payment	Paid in the form of premiums.
Degree of profit/loss	Unlimited	Unlimited profit and limited loss.

**Pay off for derivative contracts**

**“Pay off diagrams” a good way to understand the profits and losses with a strategy**

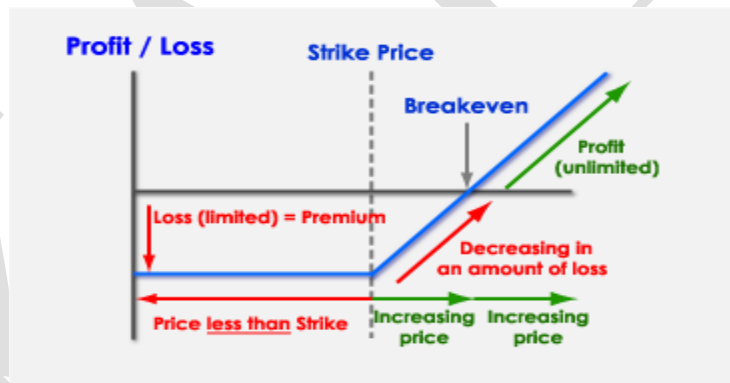
A convenient way to envision what happens with option strategies as the value of the underlying asset changes is with the use of a profit and loss diagram, known as a “payoff diagram”. A Payoff diagram is a graphical representation of the potential outcomes of a strategy. Results may be depicted at any point in time, although the graph usually depicts the results at expiration of the options involved in the strategy.



The vertical axis of the diagram reflects profits or losses on option expiration day resulting from particular strategy, while the horizontal axis reflects the underlying asset price on option expiration day. At expiration, there is no time value left, so the option will sell for its intrinsic value. By convention, the diagrams ignore the effect of commissions you have to pay.

**“Profit or loss in Baht are graphed on the vertical axis  
Various underlying asset prices are graphed on the horizontal axis”**

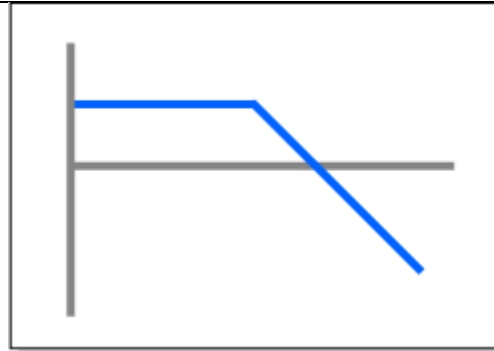
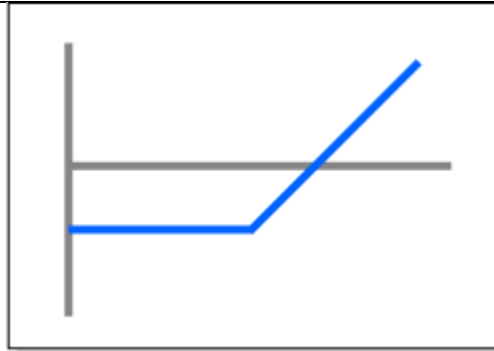
#### Example - Long Call Options



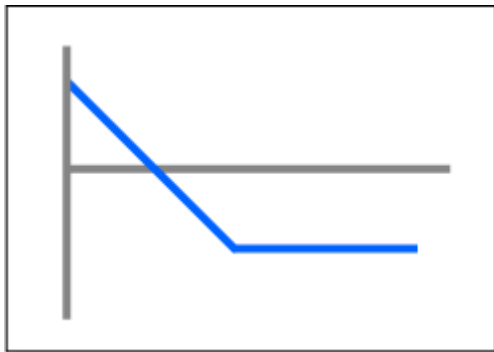
According to the Payoff diagram of Long Call Options strategy, it can be seen that if the underlying asset price is lower than the strike price, the call options holders lose money which is the equivalent of the premium value, but if the underlying asset price is more than the strike price and continually increasing, the holders' loss is decreasing until the underlying asset price reach the breakeven point, and since then the call options holders profit from their long call positions.

#### More payoff examples of 4 main strategies of options investment

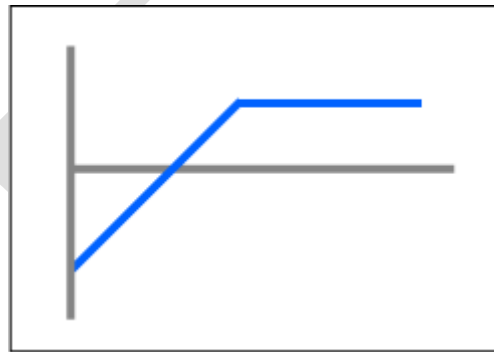
Long Call Options	Short Call Options
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Long Put Options



Short Put Options



**UNIT-III**

**SYLLABUS**

Futures and options , trading systems – Basis of trading – Eligibility of stock for futures and options trading – Clearing and settlement; clearing entities – Members – Banks – Mechanism – settlement mechanism – Regularity framework- Case studies in relevant topics.

**Futures and Option Trading System**

The Futures and Options Trading System provides a fully automated trading environment for screen-based, floor-less trading on a nationwide basis and an online monitoring and surveillance mechanism. The system supports an order driven market and provides complete transparency of trading operations.

Orders, as and when they are received, are first time stamped and then immediately processed for potential match. If a match is not found, then the orders are stored in different 'books'. Orders are stored in price-time priority in various books in the following sequence:

- Best Price
- Within Price, by time priority.

**Order Matching Rules**

The best buy order will match with the best sell order. An order may match partially with another order resulting in multiple trades. For order matching, the best buy order is the one with highest price and the best sell order is the one with lowest price. This is because the computer views all buy orders available from the point of view of a seller and all sell orders from the point of view of the buyers in the market. So, of all buy orders available in the market at any point of time, a seller would obviously like to sell at the highest possible buy price that is offered. Hence, the best buy order is the order with highest price and vice-versa. Members can pro actively enter orders in the system which will be displayed in the system till the full quantity is matched by one or more of counter-orders and result into trade(s). Alternatively members may be reactive and put in orders that match with existing orders in the system. Orders lying unmatched in the system are 'passive' orders and orders that come in to match the existing orders are called 'active' orders. Orders are always matched at the passive order price. This ensures that the earlier orders get priority over the orders that come in later.



### **Order Conditions**

A Trading Member can enter various types of orders depending upon his/her requirements. These conditions are broadly classified into 2 categories: time related conditions and price-related conditions.

### **Time Conditions**

**DAY** - A Day order, as the name suggests, is an order which is valid for the day on which it is entered. If the order is not matched during the day, the order gets cancelled automatically at the end of the trading day.

**IOC** - An Immediate or Cancel (IOC) order allows a Trading Member to buy or sell a security as soon as the order is released into the market, failing which the order will be removed from the market. Partial match is possible for the order, and the unmatched portion of the order is cancelled immediately.

### **Price Conditions**

**Limit Price/Order** - An order that allows the price to be specified while entering the order into the system.

**Market Price/Order** - An order to buy or sell securities at the best price obtainable at the time of entering the order.

**Stop Loss (SL) Price/Order** - The one that allows the Trading Member to place an order which gets activated only when the market price of the relevant security reaches or crosses a threshold price. Until then the order does not enter the market.

A sell order in the Stop Loss book gets triggered when the last traded price in the normal market reaches or falls below the trigger price of the order. A buy order in the Stop Loss book gets triggered when the last traded price in the normal market reaches or exceeds the trigger price of the order.

E.g. If for stop loss buy order, the trigger is 93.00, the limit price is 95.00 and the market (last traded) price is 90.00, then this order is released into the system once the market price reaches or exceeds 93.00. This order is added to the regular lot book with time of triggering as the time stamp, as a limit order of 95.00

### **Basis of Trading – F&O**

In stock market F&O represent the future and option market of derivative segment. Derivative are the financial instrument whose value is derived from underlying asset and it is most popular in India.

Some shares also have futures and options contracts available. They are available in lots. Futures are contracts with a certain expiry date. You are basically betting that the price of the share will be higher than the price at which you bought it on the expiry date. Options are even more complicated. You don't get any shares or dividends if you trade in F&O. The risks are very much higher.

Futures and Options (F&O) are two types of derivatives available for the trading in India stock markets.

In futures trading, trader takes the buy/sell positions in an index (i.e. NIFTY) or a stock (i.e. Reliance) contract. If, during the course of the contract life, the price moves in traders favor (rises in case you have a buy position or falls in case you have a sell position), trader makes profit. In case the price movement is adverse, trader incurs losses.

Few fundamental things you should know about F&O trading:

- The F&O segment accounts for most trading across stock exchanges in India. They are the most popular trading instruments worldwide.
- To take the buy/sell position on index/stock futures, trader has to place certain % of order value as margin. Which mean if a trader buy future contract worth of Rs 4 Lakhs, he pays just around 10% cash to broker (known as margin money) which is Rs 40,000. This gives opportunity to trade more with little cash.
- Profit or losses are calculated every day until trader sells the contract or it expires.
- Margin money is calculated every day. Which means if the trader doesn't have enough cash (margin money) in his account (on any day when trader is holding the position), he has to deposit the margin money to broker or broker can sell his F&O contract and recover the money.

- Unlike stocks; derivative has an expiry. Which means if trader do not sell until a pre-decided expiry date, the contract is expired and profit or loss is shared with you by the broker.
- Future Trading can be done on the indices (Nifty, Sensex etc). NIFTY Futures are among the most traded future contracts in India.

In the Futures and Options segment at NSE and BSE; trading is available in mainly two types of contracts:

- Index Futures & Options

At NSE; Index F&O are available for 6 indices. This includes; CNX Nifty Index, CNX IT index, Bank Nifty Index and Nifty Midcap 50 index.

CNX Nifty Index (based on the Nifty index.)

BANK Nifty Index (based on the BANK NIFTY index)

CNXIT Index (based on the CNX IT index)

Nifty Midcap 50 Index ( based on the Nifty Midcap 50 index)

CNX Infrastructure Index (based on the CNX Infrastructure index)

CNX PSE Index (based on the CNX PSE index)

Similar way BSE offers trading in future for underlying assets as following indexes:

- SENSEX
- BSE100
- BSETECK
- BANKEX
- Futures & Options on Individual Securities

Stock exchanges offer F&O contracts for individual scripts (i.e. Reliance, TCS etc.); which are traded in the Capital Market segment of the Exchange.

NSE offers F&O trading in 135 securities stipulated by the SEBI. The stock exchange defines the characteristics of the futures contract such as the underlying security, market lot, and the maturity date of the contract.

**Eligibility criteria of stocks on which stock options and single stock futures could be introduced**

This is in partial modification to SEBI circular SMDRP/DC/CIR-13/02 dated December 18, 2002, SEBI/DNPD/Cir-26/2004/07/16 dated July 16, 2004 and SEBI/DNPD/Cir-31/2006 dated September 22, 2006 regarding criteria for selecting the stock in derivatives segment.

As a surveillance measure SEBI has required the Exchanges to use the following stock's selection criteria with immediate effect:

1. The eligibility criteria for inclusion of scrips in F&O segment shall be as under:
  - The stock shall be chosen from amongst the top 500 stocks in terms of average daily market capitalization and average daily traded value in the previous six months on a rolling basis.
  - The stock's median quarter sigma order size over the last six months shall be not less than Rs. 5 lakhs.
  - The market wide position limit (MWPL) in the stock shall not be less than Rs. 100 crores.

2. The criteria for exclusion of scrips in F&O segment shall be as under:

For an existing F&O stock, the continued eligibility criteria is that market wide position limit in the stock shall not be less than Rs. 60 crores and stock's median quarter-sigma order size over the last six months shall be not less than Rs. 2 lakh.

The stock shall be excluded if the above criteria is not fulfilled for consecutively three months.

3. Further, once the stock is excluded from the F&O list, it shall not be considered for re-inclusion for a period of one year.

### **Trading, Clearing & Settlement**

Trading on the derivatives segment takes place on all days of the week (except Saturdays and Sundays and holidays declared by the Exchange in advance). The market timings of the derivatives segment are:

Normal market / Exercise market open time : 09:15 hrs

Normal market close time : 15:30 hrs

Setup cutoff time for Position limit/Collateral value : 16:15hrs

Trade modification / Exercise market end time : 16:15hrs

Note: The Exchange may however close the market on days other than the above schedule holidays or may open the market on days originally declared as holidays. The Exchange may also extend, advance or reduce trading hours when it deems fit and necessary.

### **PRICE BANDS**

There are no day minimum/maximum price ranges applicable in the derivatives segment. However, in order to prevent erroneous order entry, operating ranges and day minimum/maximum ranges are kept as below:

- For Index Futures: at 10% of the base price
- For Futures on Individual Securities: at 10% of the base price
- For Index and Stock Options: A contract specific price range based on its delta value is computed and updated on a daily basis.

In view of this, orders placed at prices which are beyond the operating ranges would reach the Exchange as a price freeze.

## **TRADING SYSTEM**

The Futures and Options Trading System provides a fully automated trading environment for screen-based, floor-less trading on a nationwide basis and an online monitoring and surveillance mechanism. The system supports an order driven market and provides complete transparency of trading operations.

## **ORDER CONDITIONS**

### **TIME CONDITIONS**

**DAY** - Day order, as the name suggests, is an order which is valid for the day on which it is entered. If the order is not matched during the day, the order gets cancelled automatically at the end of the trading day.

**IOC** -An Immediate or Cancel (IOC) order allows a Trading Member to buy or sell a security as soon as the order is released into the market, failing which the order will be removed from the market. Partial match is possible for the order, and the unmatched portion of the order is cancelled immediately.

### **PRICE CONDITIONS**

**LIMIT PRICE/ORDER** -An order that allows the price to be specified while entering the order into the system.

**MARKET PRICE/ORDER** -An order to buy or sell securities at the best price obtainable at the time of entering the order.

**STOP LOSS (SL) PRICE/ORDER** -The one that allows the Trading Member to place an order which gets activated only when the market price of the relevant security reaches or crosses a threshold price. Until then the order does not enter the market.

### **OTHER CONDITIONS**

- Market price: Market orders are orders for which no price is specified at the time the order is entered (i.e. price is market price). For such orders, the system determines the price.
- Trigger price: Price at which an order gets triggered from the stop-loss book.
- Limit price: Price of the orders after triggering from stop-loss book.

- Pro: Pro means that the orders are entered on the trading member's own account.
- Cli: Cli means that the trading member enters the orders on behalf of a client.

### **CLEARING MECHANISM**

A Clearing Member's open position is arrived by aggregating the open position of all the Trading Members (TM) and all custodial participants clearing through him. A TM's open position in turn includes his proprietary open position and clients' open positions.

### **SETTLEMENT SCHEDULE**

The settlement of trades takes place on T +0/ T+1 working day basis at the discretion of the member. Members with a funds pay-in obligation are required to have clear funds in their primary clearing account before the stipulated Payin time. on the settlement day. The payout of funds is credited to the primary clearing account of the members thereafter.

<b>PRODUCT</b>	<b>SETTLEMENT</b>	<b>SCHEDULE</b>
Futures Contracts on Index or Global Index Individual Security	Daily Settlement	Closing price of the futures contracts on the trading day. (closing price for a futures contract shall be calculated on the basis of the last half an hour weighted average price of such contract)
Un-expired illiquid futures contracts (including Global Indices)	Daily Settlement	Theoretical Price computed as per formula $F = S + \text{ert}$
Futures Contracts on Index or Individual Securities	Final Settlement	Closing price of the relevant underlying index / security in the Capital Market segment of NSE, on the last trading day of the futures contracts.
Futures Contracts on Global Indices (S&P 500 and DJIA)	Final Settlement	The Special Opening Quotation (SOQ) of the Global Indices S&P 500 and DJIA on the last trading day of the options contracts



Options Contracts on Index and Individual Securities	Final Exercise Settlement	Closing price of such underlying security (or index) on the last trading day of the options contract.
Options Contracts on Global Indices	Final Exercise Settlement	The Special Opening Quotation (SOQ) of the Global Indices S&P 500 and DJIA on the last trading day of the options contracts

## **SETTLEMENT MECHANISM**

### **DAILY MTM SETTLEMENT FOR FUTURES**

All futures contracts for each member are marked-to-market (MTM) to the daily settlement price of the relevant futures contract at the end of each day. The profits/losses are computed as the difference between:

1. The trade price and the day's settlement price for contracts executed during the day but not squared up.
2. The previous day's settlement price and the current day's settlement price for brought forward contracts.
3. The buy price and the sell price for contracts executed during the day and squared up. Daily settlement price on a trading day is the closing price of the respective futures contracts on such day.

### **FINAL SETTLEMENT FOR FUTURES:**

On the expiry day of the futures contracts, after the close of trading hours, NSCCL marks all positions of a CM to the final settlement price and the resulting profit/loss is settled in cash. Final settlement price is the closing price of the relevant underlying index/security in the capital market segment on the last trading day of the contract.

### **DAILY PREMIUM SETTLEMENT FOR OPTIONS**

Buyer of an option is obligated to pay the premium towards the options purchased by him. Similarly, the seller of an option is entitled to receive the premium for the option sold by him.

The premium payable amount and the premium receivable amount are netted to compute the net premium payable or receivable amount for each client for each option contract.

### **FINAL EXERCISE SETTLEMENT FOR OPTIONS**

Final exercise settlement is effected for all open long in-the-money strike price options existing at the close of trading hours, on the expiration day of an option contract. All such long positions are exercised and automatically assigned to short positions in option contracts with the same series, on a random basis. The investor who has long in-the-money options on the expiry date will receive the exercise settlement value per unit of the option from the investor who is short on the option.

### **Clearing entities**

Clearing and settlement activities in the currency derivatives segment are undertaken by clearing corporation with the help of following entities:

4. Clearing members
5. Clearing banks

### **Clearing Members**

Primarily, the CM performs the following functions: Y Clearing - Computing obligations of all his TMs i.e. determining positions to settle. Y Settlement - Performing actual settlement. Only funds settlement is allowed at present in Index as well as Stock futures and options contracts Y Risk Management - Setting position limits based on upfront deposits / margins for each TM and monitoring positions on a continuous basis.

### **TYPES OF CLEARING MEMBERS**

Self-clearing Members: Trading-cum-clearing member, clear and settle their own trades as well as trades of other trading members (TMs).

Trading cum Clearing Members: Professional clearing members (PCM)- clear and settle trades executed by TMs.

Professional Clearing Members (PCM): The members clearing their own trades and trades of others, and the PCMs -bring in additional security deposits in respect of every TM whose trades they undertake to clear and settle.

### **ELIGIBILITY OF CLEARING MEMBER**

Net worth of at least Rs. 300 lakhs.

Deposit of Rs. 50 lakhs to NSCCL which forms part of the security deposit of the CM

Additional incremental deposits of Rs.10 lakhs to NSCCL for each additional TM in case the CM undertakes to clear and settle deals for other TMs.

### **Clearing Banks**

Funds settlement - clearing banks.

For settlement - All clearing members are required to open a separate bank account with the Clearing Corporation designated clearing bank for F & O segment.

The clearing members keep a margin amount in these bank accounts.

### **Clearing Mechanism**

Define Clearing can be defined as the procedure by which an organization acts as an intermediary and assumes the role of both buyer and seller for transactions in order to reconcile orders between transacting parties.

### **CLEARING MECHANISM**

A clearing member's open position calculation is arrived by aggregating the open position of all the members(TM) and all custodial participants clearing through him. TMs open position in turn includes

Proprietary open position & Client open position The proprietary positions are calculated on net basis (buy - sell) and client positions are calculated on gross of net positions of each client i.e., a buy trade is off- set by a sell trade and a sell trade is off-set by a buy trade.

EXAMPLE OF CLEARING MECHANISM• For a CM - XYZ, with TMs clearing through him - ABC and PQR

### **Settlement Mechanism**

Under settlement mechanism function a clearing member Performs actual settlement.

Only funds settlement is allowed at present in Index as well as Stock, futures and options contracts

### **FUTURES CONTRACTS ON INDEX OR INDIVIDUAL SECURITIES**

Daily Mark-to-Market Settlement:- 1. The positions in the futures contracts for each member are marked -to- market to the price of the futures contracts at the end of each trade day. 2. The profits/ losses are computed as the difference between the trade price or the

previous day's settlement price and current settlement price 3. The CMs who have suffered a loss are required to pay the mark-to-market loss amount to NSCCL which is in turn passed on to the members who have made a profit. 4. This is known as daily mark-to-market settlement. 5. The pay-in and pay-out of the mark-to-market settlement is on T+1 days (T = Trade day). 6. The mark to market losses or profits are directly debited or credited to the CMs clearing bank account.

#### **FUTURES CONTRACTS ON INDEX OR INDIVIDUAL SECURITIES**

##### **Final Settlement**

1. On the expiry of the futures contracts, NSCCL marks all positions of a CM to the final settlement price and the resulting profit / losses settled in cash.
2. The final settlement profit / loss are computed as the difference between trade price or the previous day's settlement price and final settlement price
3. Final settlement loss/ profit amount is debited/ credited to the relevant CMs clearing bank account on T+1 day (T= expiry day).
4. Open positions in futures contracts cease to exist after their expiration day.

#### **OPTIONS CONTRACTS ON INDEX OR INDIVIDUAL SECURITIES**

##### **Daily Premium Settlement:-**

1. Premium settlement is cash settled and settlement style is premium style.
2. The premium payable position and premium receivable positions are netted across all option contracts for each at the client level to determine the net premium payable or receivable amount, at the end of each day.
3. The CMs who have a premium payable position is required to pay the premium amount to NSCCL which is in turn passed on to the members who have a premium receivable position.
4. This is known as daily premium settlement.

#### **INTERIM EXERCISE SETTLEMENT FOR OPTIONS ON INDIVIDUAL SECURITIES**

Interim exercise settlement for Option contracts on Individual Securities is affected for valid exercised option positions at in- the-money strike prices, at the close of the trading hours, on the day of exercise.

The interim exercise settlement value is the difference between the strike price and the settlement price of the relevant option contract. Exercise settlement value is debited/ credited to the relevant CMs clearing bank account on T+1 day (T= exercise date).

## **FINAL EXERCISE SETTLEMENT**

Final Exercise settlement is effected for option positions at in - the-money strike prices existing at the close of trading hours, on the expiration day of an option contract

Final Exercise is Automatic on expiry of the option contracts. Option contracts, which have been exercised, shall be assigned and allocated to Clearing Members at the client level .

Exercise settlement is cash settled by debiting/ crediting of the clearing accounts of the relevant Clearing Members with the respective Clearing Bank. Final settlement loss/ profit amount for option contracts on Indexes debited/ credited to the relevant CMs clearing bank account on T+1day (T = expiry day).

## **CORPORATE ACTION ADJUSTMENT**

The basis for any adjustment for corporate actions is such that the value of the position of the market participants, on the cum and ex-dates for the corporate action, continues to remain the same as far as possible.

This facilitates in retaining the relative status of positions, namely in-the-money, at-the-money and out-of-money.

This also addresses issues related to exercise and assignments.

Corporate actions can be broadly classified under stock benefits and cash benefits.

The cash benefit declared by the issuer of capital is cash dividend.

## **CORPORATE ACTION ADJUSTMENT**

Stock Benefits declared by the issuer of capital include:

1. bonus,
2. rights,
3. merger/de-merger,
4. amalgamation,
5. splits,
6. consolidations,
7. hive-off,
8. warrants and
9. secured premium notes (SPNs).

Any adjustment for corporate actions is carried out on the last day on which a security is traded on a cum basis in the underlying equities market, after the close of trading hours.

#### **CORPORATE ACTION ADJUSTMENT**

Adjustments may entail modifications to positions and/or contract specifications as listed below:

1. Strike price
2. Position
3. Market lot/multiplier

The adjustments are carried out on any or all of the above, based on the nature of the corporate action.

The adjustments for corporate actions are carried out on all open, exercised as well as assigned positions.

#### **Regulatory framework**

With the amendment in the definition of "securities" under SC(R)A (to include derivative contracts in the definition of securities), derivatives trading takes place under the provisions of the Securities Contracts (Regulation) Act, 1956 and the Securities and Exchange Board of India Act, 1992.

Dr. L.C Gupta Committee constituted by SEBI had laid down the regulatory framework for derivative trading in India. SEBI has also framed suggestive bye-law for Derivative Exchanges/Segments and their Clearing Corporation/House which lays down the provisions for trading and settlement of derivative contracts. The Rules, Bye-laws & Regulations of the Derivative Segment of the Exchanges and their Clearing Corporation/House have to be framed in line with the suggestive Bye-laws. SEBI has also laid the eligibility conditions for Derivative Exchange/Segment and its Clearing Corporation/House. The eligibility conditions have been framed to ensure that Derivative Exchange/Segment & Clearing Corporation/House provide a transparent trading environment, safety & integrity and provide facilities for redressal of investor grievances. Some of the important eligibility conditions are –

1. Derivative trading to take place through an online screen based Trading System.
2. The Derivatives Exchange/Segment shall have online surveillance capability to monitor positions, prices, and volumes on a real time basis to deter market manipulation.
3. The Derivatives Exchange/ Segment should have arrangements for dissemination of information about trades, quantities and quotes on a real time basis through atleast two information vending networks, which are easily accessible to investors across the country.
4. The Derivatives Exchange/Segment should have arbitration and investor grievances redressal mechanism operative from all the four areas / regions of the country.
5. The Derivatives Exchange/Segment should have satisfactory system of monitoring investor complaints and preventing irregularities in trading.
6. The Derivative Segment of the Exchange would have a separate Investor Protection Fund.
7. The Clearing Corporation/House shall perform full novation, i.e. the Clearing Corporation/House shall interpose itself between both legs of every trade, becoming the legal counterparty to both or alternatively should provide an unconditional guarantee for settlement of all trades.
8. The Clearing Corporation/House shall have the capacity to monitor the overall position of Members across both derivatives market and the underlying securities market for those Members who are participating in both.
9. The level of initial margin on Index Futures Contracts shall be related to the risk of loss on the position. The concept of value-at-risk shall be used in calculating required level of initial margins. The initial margins should be large enough to cover the one-day loss that can be encountered on the position on 99% of the days.
10. The Clearing Corporation/House shall establish facilities for electronic funds transfer (EFT) for swift movement of margin payments.
11. In the event of a Member defaulting in meeting its liabilities, the Clearing Corporation/House shall transfer client positions and assets to another solvent Member or close-out all open positions.



12. The Clearing Corporation/House should have capabilities to segregate initial margins deposited by Clearing Members for trades on their own account and on account of his client. The Clearing Corporation/House shall hold the clients' margin money in trust for the client purposes only and should not allow its diversion for any other purpose.

13. The Clearing Corporation/House shall have a separate Trade Guarantee Fund for the trades executed on Derivative Exchange / Segment. Presently, SEBI has permitted Derivative Trading on the Derivative Segment of BSE and the F&O Segment of NSE.

### **The regulatory framework for derivatives in securities**

Securities Contract (Regulation) Act, 1956 (**SCRA**) is enacted to prevent undesirable transactions in securities. Initially, Bombay High Court in *Brooke Bond India Limited v. UB Limited*, (1994) 79 Comp Cas 346 took a view that the SCRA, is not intended to regulate private transaction in shares of public limited companies, not listed on the stock exchange. However the Supreme Court in *Bhagwati Developers (P) Ltd. v. Peerless General Finance & Investment Co. Ltd.*, (2013) 9 SCC 584 did not endorse the view of Bombay High Court and made it clear that the provisions of the SCRA apply to public limited company, though they are not listed in the stock exchange.

### **Regulation of options**

Section 2(d) of the SCRA expressly defines "option in securities" to mean a contract for the purchase or sale of a right to buy or sell, or a right to buy and sell, securities in future, and includes a teji, a mandi, a tejimandi, a galli, a put, a call or a put and call in securities. The definition makes it clear that it is not the contract for sale of securities but a contract for sale of a right to sell securities in future. Section 20 of the SCRA specifically provided that all options in securities entered into after the commencement of SCRA or those entered before SCRA but remained to be performed were illegal. Thus options were expressly prohibited under SCRA. However, this provision was deleted by the Securities Laws (Amendment) Act, 1995.

### **Regulation of forwards under SCRA**

The Central Government vide Notification dated 27/6/1969 (1969 Notification) issued under Section 16 of the SCRA (which empowers the Central Government to prohibit certain contracts in specified securities), had prohibited all kinds of contracts for sale or purchase of securities except spot delivery contract or contract for cash or hand delivery or special delivery in any security under SCRA. Any other contract could only be entered into with the permission of the Central Government. The 1969 Notification sought to restrict forward contracts. In 2000, the 1969 Notification was rescinded. Securities Laws Amendment Act 1999 with effect from 22/2/2000 amended the definition of “securities” in SCRA to include “derivatives”. It also inserted the definition of “derivatives” which reads: “Derivate” includes -(A) a security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security; (B) a contract which derives its value from the prices, or index of prices, of underlining securities. By the aforesaid amendment, section 18A was inserted in SCRA providing that a derivative contract shall be valid if they are settled in the stock exchange.

### **Stand of SEBI**

SEBI vide its Notification No SO 184(E) dated 1/3/2000 had issued directions having effect similar to that of the 1969 Notification. It is relevant to note that forward contracts which were prohibited by 1969 Notification are not the same as option contract. Unlike an option, a forward contract does not depend upon the exercise of an option by one of the parties. The distinction between a forward contract and options, is noticed by in decision of Division Bench of the Bombay High Court in Jethalal C. Thakkar v. R.N. Kapur, AIR 1956 Bom 74, as below:

*“A clear distinction must be borne in mind between a case where there is a present obligation under a contract and the performance is postponed to a later date, and a case where there is no present obligation at all and the obligation arises by reason of some condition being complied with or some contingency occurring.”*

This distinction was also recognized by the Division Bench of the Calcutta High Court in the matter of East Indian Produce Ltd. v. Naresh Acharya Bhaduri [1988]64 Comp Cas 259 (Cal)(DB) wherein it held that restriction on spot delivery contracts applied to contracts for sale or purchase of securities and not options in securities which were separately prohibited under the erstwhile Section 20 of SCRA. In BOI Finance Ltd. v. Custodian (1997) 10 SCC 488, Supreme Court ruled that in case of a ready-forward contract, a ready leg (i.e. purchase or sale of securities at a stated price which is executed on payment of consideration for the spot delivery of the security certificates together with transfer forms) is valid and lawful but the forward leg (i.e. repurchase of the same securities on the later date at a specified price to be paid) is hit by the provisions of the SCRA and accordingly shall be ignored.

Yet and inspite of deletion of Section 20 of the SCRA in the year 1995, SEBI for long took a stand that options are not a spot delivery contracts but forward contracts. In informal guidance note given to Vulcan Engineers Ltd. relating to the purchase and sale of shares of the company at a pre-agreed price under the put/call options, SEBI stated that:

***“As [this] (put / call) option would be exercised in a future date...the transaction would not qualify as a spot delivery contract under SCRA S. 2(i), nor as a legal and valid derivative contract in terms of S. 18A.”***

In relation to the public takeover of Cairn India Limited where the parties had entered into put and call options arrangements, SEBI took a view that put option and call option arrangements and the right of first refusal do not conform to the requirements of a spot delivery contract nor with that of a contract of derivatives as provided under Section 18A of the SCRA and, therefore the put and call option arrangement along with the right of first refusal are in illegal.

Bombay High Court in the case of MCX Stock Exchange Ltd vs Securities & Exchange Board of India & Ors 2012 (114) BomLR 1002 held as follows:

*“In the case of an option, a concluded contract for purchase or repurchase arises only upon the exercise of the option. Under the notification that has been issued under the SCRA, a contract for the sale or purchase of securities has to be a spot delivery contract or a contract for cash or hand delivery or special delivery. In the present case, the contract for sale or purchase of the securities would fructify only upon the exercise of the option in future. If the option were not to be exercised by them, no contract for sale or purchase of securities would come into existence. Moreover, if the option were to be exercised, there is nothing to indicate that the performance of the contract would be by anything other than by a spot delivery, cash or special delivery.”*

Bombay High Court thus took a view that once a contract is arrived at upon the option being exercised, the contract would be fulfilled by spot delivery and would, therefore, not be unlawful. However SEBI's petition for special leave was disposed of by the Supreme Court with the consent of the parties and with an observation that in making amendments in the Regulation, SEBI shall not be bound by any observations or comments made by the High Court in the impugned judgment.

Eventually, by Notification dated 3/10/2013, SEBI rescinded the notification number S.O.184(E), dated the 1/3/2000, and declared that contracts in derivatives, as are permissible under law and options shall be valid provided inter alia the price or consideration payable for the sale or purchase of the underlying securities pursuant to exercise of any option contained therein, is in compliance with all the laws for the time being in force as applicable. With the aforesaid notification of SEBI a long standing debate on validity of options came to be settled.



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COURSE NAME: BONDS, DERIVATIVES AND COMMODITY MARKET MANAGEMENT

COURSE CODE: 17MBAPF401C

UNIT: III(Futures and Options)

BATCH-2017-2019

S.No	Question	Option - I	Option - II	Option - III	Option - IV	Answer
1	Rate of return on non-callable bonds is added into value of issuer option to calculate	return on assets	return on callable bond	return on non-callable bonds	return on equity	return on callable bond
2	Bonds that does not pay any interest rate are considered as	interest free bond	zero coupon bond	price less coupon bond	useless price bonds	zero coupon bond
3	Principal value of TIPS is increased or decreased and is based on measure of	consumer price index	manufacturing price index	auction selling index	inflation payment index	consumer price index
4	Type of contract which involves future exchange of assets at a specified price is classified as	future contracts	present contract	spot contract	forward contract	forward contract
5	When price of underlying asset increases then good option is	buy the call option	sell the call option	buy the put option	sell the put option	buy the call option
6	Which of the following is not a financial derivative?	Stock	Futures	Options	Forward contracts	Stock
7	By hedging a portfolio, a bank manager	reduces interest rate risk.	increases reinvestment risk.	increases exchange rate risk.	increases the probability of gains.	reduces interest rate risk.
8	Which of the following is a reason to hedge a portfolio?	To increase the probability of gains.	To limit exposure to risk.	To profit from capital gains when interest rates fall.	All of the above.	To limit exposure to risk.
9	Hedging risk for a long position is accomplished by	taking another long position.	taking a short position.	taking additional long and short positions in equal amounts.	taking a neutral position.	taking a short position.

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10	Hedging risk for a short position is accomplished by	taking a long position.	taking another short position.	taking additional long and short positions in equal amounts.	taking a neutral position.	taking a long position.
11	A contract that requires the investor to buy securities on a future date is called a	short contract.	long contract.	hedge.	cross.	long contract.
12	A long contract requires that the investor	sell securities in the future.	buy securities in the future.	hedge in the future.	close out his position in the future.	buy securities in the future.
13	A person who agrees to buy an asset at a future date has gone	long.	short.	back.	ahead.	long.
14	A short contract requires that the investor	sell securities in the future.	buy securities in the future.	hedge in the future.	close out his position in the future.	sell securities in the future.
15	To say that the forward market lacks liquidity means that	forward contracts usually result in losses.	forward contracts cannot be turned into cash.	it may be difficult to make the transaction.	forward contracts cannot be sold for cash.	it may be difficult to make the transaction.
16	Forward contracts are risky because they	are subject to lack of liquidity	are subject to default risk.	hedge a portfolio.	are subject to lack of liquidity and default risk	are subject to lack of liquidity and default risk
17	The advantage of forward contracts over future contracts is that they	are standardized.	have lower default risk.	are more liquid.	more flexible.	more flexible.
18	Futures contracts are regularly traded on the	Chicago Board of Trade.	New York Stock Exchange.	American Stock Exchange.	Chicago Board of Options Exchange.	Chicago Board of Trade.

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19	When interest rates fall, a bank that perfectly hedges its portfolio of Treasury securities in the futures market	suffers a loss.	experiences a gain.	has no change in its income.	close out his position in the future.	has no change in its income.
20	Parties who have bought a futures contract and thereby agreed to ----- ----- (take delivery of) the bonds are said to have taken a position.	sell; short	buy; short	sell; long	buy; long	buy; long
21	Parties who have sold a futures contract and thereby agreed to ----- -- (deliver) the bonds are said to have taken a position. (a) sell	sell; short	buy; short	sell; long	buy; long	sell; short
22	On the expiration date of a futures contract, the price of the contract	always equals the purchase price of the contract.	always equals the average price over the life of the contract.	always equals the price of the underlying asset.	always equals the average of the purchase price and the price of underlying asset.	always equals the price of the underlying asset.
23	The price of a futures contract at the expiration date of the contract	equals the price of the underlying asset.	equals the price of the counterparty.	equals the hedge position.	equals the value of the hedged asset.	equals the price of the underlying asset.
24	Elimination of riskless profit opportunities in the futures market is	hedging.	arbitrage.	speculation.	underwriting.	arbitrage.
25	If you sold a short contract on financial futures you hope interest rates	rise.	fall.	are stable.	fluctuate.	rise.



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26	If you sold a short futures contract you will hope that interest rates	rise.	fall.	are stable.	fluctuate.	rise.
27	If you bought a long contract on financial futures you hope that interest rates	rise.	fall.	are stable.	fluctuate.	fall.
28	If you bought a long futures contract you hope that bond prices	rise.	fall.	are stable.	fluctuate.	rise.
29	Assume you are holding Treasury securities and have sold futures to hedge against interest rate risk. if interest rates rise	the increase in the value of the securities equals the decrease in the value of the futures contracts.	the decrease in the value of the securities equals the increase in the value of the futures contracts.	the increase in the value of the securities exceeds the decrease in the values of the futures contracts.	both the securities and the futures contracts increase in value.	the decrease in the value of the securities equals the increase in the value of the futures contracts.
30	When a financial institution hedges the interest-rate risk for a specific asset, the hedge is called a	macro hedge.	micro hedge.	cross hedge.	futures hedge.	micro hedge.
31	the financial institution is hedging interest-rate risk on its overall portfolio, then the hedge is a	macro hedge.	micro hedge.	cross hedge.	futures hedge.	micro hedge.

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32	The number of futures contracts outstanding is called	liquidity.	volume.	float.	open interest.	open interest.
33	Which of the following features of futures contracts were not designed to increase liquidity?	Standardized contracts	Traded up until maturity	Not tied to one specific type of bond	Marked to market daily	Marked to market daily
34	Which of the following features of futures contracts were not designed to increase liquidity?	Standardized contracts	Traded up until maturity	Not tied to one specific type of bond	Can be closed with off setting trade	Can be closed with off setting trade
35	Futures differ from forwards because they are	used to hedge portfolios.	used to hedge individual securities.	used in both financial and foreign exchange markets.	a standardized contract.	a standardized contract.
36	Futures differ from forwards because they are	used to hedge portfolios.	used to hedge individual securities.	used in both financial and foreign exchange markets.	marked to market daily.	marked to market daily.
37	If a firm is due to be paid in deutsche marks in two months, to hedge against exchange rate risk the firm should	sell foreign exchange futures short.	buy foreign exchange futures long.	stay out of the exchange futures market.	a standardized contract.	sell foreign exchange futures short.
38	If a firm must pay for goods it has ordered with foreign currency, it can hedge its foreign exchange rate risk by	sell foreign exchange futures short.	buy foreign exchange futures long.	stay out of the exchange futures market.	a standardized contract.	buy foreign exchange futures long.
39	Options are contracts that give the purchasers the	option to buy or sell an underlying asset.	the obligation to buy or sell an underlying asset.	the right to hold an underlying asset.	the right to switch payment streams.	option to buy or sell an underlying asset.

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40	The price specified on an option that the holder can buy or sell the underlying asset is called the	premium.	call.	strike price.	put.	strike price.
41	The price specified on an option that the holder can buy or sell the underlying asset is called the	premium.	strike price.	exercise price	strike price. and exercise price	strike price. and exercise price
42	The seller of an option has the	right to buy or sell the underlying asset.	the obligation to buy or sell the underlying asset.	ability to reduce transaction risk.	right to exchange one payment stream for another.	the obligation to buy or sell the underlying asset.
43	The seller of an option is	obligated; right	right; obligation	obligated; obligation	right; right	obligated; right
44	The amount paid for an option is the	strike price.	premium.	discount.	commission.	premium.
45	An option that can be exercised at any time up to maturity is called a(n)	swap.	stock option.	European option.	American option.	American option.
46	An option that can only be exercised at maturity is called a(n)	swap.	stock option.	European option.	American option.	European option.
47	Options on individual stocks are referred to as	stock options.	futures options.	American options.	individual options.	stock options.
48	Options on futures contracts are referred to as	stock options.	futures options.	American options.	individual options.	futures options.
49	An option that gives the owner the right to buy a financial instrument at the exercise price within a specified period of time is a	call option.	put option.	American option.	European option.	call option.

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50	A call option gives the owner	the right to sell the underlying security.	the obligation to sell the underlying security.	the right to buy the underlying security.	the obligation to buy the underlying security.	the right to buy the underlying security.
51	A call option gives the seller	the right to sell the underlying security.	the obligation to sell the underlying security.	the right to buy the underlying security.	the obligation to buy the underlying security.	the obligation to sell the underlying security.
52	An option that gives the owner the right to sell a financial instrument at the exercise price within a specified period of time is a	call option.	put option.	American option.	European option.	put option.
53	A put option gives the owner	the right to sell the underlying security.	the obligation to sell the underlying security.	the right to buy the underlying security.	the obligation to buy the underlying security.	the right to sell the underlying security.
54	A put option gives the seller	the right to sell the underlying security.	the obligation to sell the underlying security.	the right to buy the underlying security.	the obligation to buy the underlying security.	the obligation to buy the underlying security.
55	An option allowing the owner to sell an asset at a future date is a	put option.	call option.	swap.	forward contract.	put option.
56	If you buy a call option on treasury futures at 115, and at expiration the market price is 110,	the call will be exercised.	the put will be exercised.	the call will not be exercised.	the put will not be exercised.	the call will not be exercised.

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57	The main reason to buy an option on a futures contract rather than the futures contract is	to reduce transaction cost.	to preserve the possibility for gains.	to limit losses.	remove the possibility for gains.	to preserve the possibility for gains.
58	The main disadvantage of hedging with futures contracts as compared to options on futures contracts is that futures	remove the possibility of gains.	increase the transactions cost.	are not as an effective a hedge.	do not remove the possibility of losses.	remove the possibility of gains.
59	An increase in the exercise price, all other things held constant, will	increase	decrease	increase or decrease	Not enough information is given.	decrease
60	A financial contract that obligates one party to exchange a set of payments it owns for another set of payments owned by another party is called a	hedge.	call option.	put option.	swap.	swap.

**UNIT-IV**

**SYLLABUS**

Introduction to commodity trading: commodity derivatives – Commodity exchanges in India – Types of instruments available for trading – Pricing – Commodity derivatives, hedging, speculation, arbitrage in commodity derivative markets. Case studies in relevant topics.

**Commodity Trading**

Commodity trading is an exciting and sophisticated type of investment. While this type of trading has many similarities to stock trading, the biggest difference is the asset that is traded. Commodity trading focuses on purchasing and trading commodities like gold rather than company shares as in stock trading. Like stocks, commodities are traded on exchanges where investors work as a team to purchase or trade products in an attempt to generate profit from the fluctuation of market prices or because they need that particular product.

**The Definition, Marketplace and Players of Commodity Trading**

A commodity is either grown or produced naturally in the environment. Some examples of commodities include platinum, gold, cotton, wheat, cattle, lumber, oil, orange juice, pork bellies and sugar. Generally, the most traded commodities are oil, gold and silver and are included in both international and national marketplaces along with a variety of other commodities. The prices of these commodities are primarily based on their demand and supply. Traditionally, large businesses have been the main participants in the commodities market. However, there are many individual investors who now have access to this market via the internet. Large businesses and companies need commodities to operate – clothing manufacturers require cotton, supermarkets and restaurants need cattle and construction companies need lumber.

**Commodity derivatives**

As it is known that commodities are the raw or primary product that could be satisfied the need like Soybean, gold silver and base metals. As every person want to generate secondary sources of income. In India Commodity Market is a market where different commodities are traded on its derivative contract. Derivative is the contract whose value is derived from the underlying asset or the contract where delivery of security or commodity held on specific future date. The main purpose of commodity derivative is also to reduce risk of future price uncertainty and provide the industry knowledge as well investment opportunity to a general investor.

Like a stock market NSE provide a platform to trade in different shares, for commodities MCX and NCDEX are the Exchange in which trading on commodity derivative contract held.

MCX (Multi Commodity Exchange ) mainly known for the trading of

Bullions metals i.e. Gold, Silver and also platinum

Base Metals (Zinc, Aluminium Lead, Nickel, Coper, )

Energy(Crude Oil and Natural Gas)

And NCDEX(National commodity derivative Exchange) manily known for trading in Derivative contract of agricultural Produced like Refsoyaoil, Rmseed,Guarseed, Chana, Dhaniya .

As all this commodities are traded on its future contract that has a specific expiry date of that contract and each individual can buy or sell a specific quantity of a individual commodity.

Different Commodities has different lot size Like

Gold -100, Silver-30, Zinc Aluminium and Lead has lot size of 5000 and Coper-1000 , Nickel-250, Crude Oil- 100 and Natural Gas has lot size of 1250.

To purchase a single lot of a commodity, you doesn't have to pay full amount you just have pay a margin amount that is decided by the Exchange.

Like if you want to buy 1lot of Zinc September Contract and its CMP is 153.20 than  $153.20 \times 5000 = 766000$  \* 4–8% would be the investment.

For a beginner a proper knowledge about the market is most important as Bullions, Base Metals and Energy are the international commodities

Thus there are so many factors Like Import and Export, Demand of a Commodity in International Market, Value of Currency and off course the technical analysis play a vital role for investment according to his or her risk. for beginner it is better to work with proper Invest adviser guidance.

A commodity market is a market that trades in primary economic sector rather than manufactured products. Soft commodities are agricultural products such as wheat, coffee, cocoa, fruit and sugar. Hard commodities are mined, such as gold and oil. Investors access about 50 major commodity markets worldwide with purely financial transactions increasingly outnumbering physical trades in which goods are delivered. Futures contracts are the oldest way of investing in commodities. Futures are



secured by physical assets. Commodity markets can include physical trading and derivatives trading using spot prices, forwards, futures, and options on futures. Farmers have used a simple form of derivative trading in the commodity market for centuries for price risk management.

A financial derivative is a financial instrument whose value is derived from a commodity termed an underlier. Derivatives are either exchange-traded or over-the-counter (OTC). An increasing number of derivatives are traded via clearing houses some with Central Counterparty Clearing, which provide clearing and settlement services on a futures exchange, as well as off-exchange in the OTC market.

Derivatives such as futures contracts, Swaps (1970s-), Exchange-traded Commodities (ETC) (2003-), forward contracts have become the primary trading instruments in commodity markets. Futures are traded on regulated commodities exchanges. Over-the-counter (OTC) contracts are "privately negotiated bilateral contracts entered into between the contracting parties directly".

Exchange-traded funds (ETFs) began to feature commodities in 2003. Gold ETFs are based on "electronic gold" that does not entail the ownership of physical bullion, with its added costs of insurance and storage in repositories such as the London bullion market. According to the World Gold Council, ETFs allow investors to be exposed to the gold market without the risk of price volatility associated with gold as a physical commodity.

### **Commodity Exchanges in India**

A commodities exchange is an exchange where various commodities and derivatives products are traded. Most commodity markets across the world trade in agricultural products and contracts based on them. These contracts can include spot prices, forwards, futures and options on futures. As of now there are six commodity exchange market in India. These six exchanges are explained below one by one.

#### **1. National Multi Commodity Exchange:**

**Establishment:** 2002

**Headquarter:** Ahmedabad

**Promoters:**

- Central warehousing corporation
- Gujarat State Agricultural Marketing Board
- Gujarat Agricultural Industries Corporation Limited

- National Institute of Agricultural Marketing
- Neptune Overseas
- Punjab National Bank

**Trading Commodities:**

- Castor Seeds
- Rapeseed
- Mustard
- Soyabean
- Sesame
- Copra
- Black Pepper
- Gram
- Gold
- Aluminum
- Copper
- Lead
- Nickel
- Zinc
- Rubber
- Jute
- Coffee
- Isabgoal

**2. Multi Commodity Exchange of India Ltd (MCX):**

**Establishment:** Nov. 2003

**Headquarter:** Mumbai

**Achievements:** MCX holds 86% market share of commodity exchange in India. It operates in more than 40 commodities. It is the world's largest exchange in silver and gold.

**Promoters:**

- National spot exchange limited, India energy exchange, Singapore mercantile exchange global board of trade, IBS Forex, National Bulk Handling Corporation, ticker plant lilited.

**Trading Commodities:**

- Metal

- Bullion
- Fibre
- Energy
- Spices
- Plantations
- Pulses
- Petrochemicals
- Cereals

### **3. National Commodity and Derivatives Exchange Limited (NCDEX)**

**Establishment:** Dec. 2003

**Headquarter:** Mumbai

**Promoters:** ICICI Bank, LIC, NABARD, CANARA BANK, PNB, CRISIL, IFFCO, Goldman Sachs, Intercontinental Exchange, Renuka Sugar, J.P. Capital

**Commodity Traded:** It facilitates the trade of 57 commodities.

- Cereals and pulses
- Fibres
- Oil and oil seeds
- Spices
- Plantation products
- Gold silver
- Steel
- Copper
- Crude Oil
- Brent Crude Oil
- Polyvinyl chloride

**4. Indian Commodity Exchange (ICEX):** It is a screen based online derivatives exchange for commodities.

**Establishment:** Nov. 2009

**Headquarter:** Gurgaon

**Promoters:** It has Reliance Exchange Next Ltd. as anchor investor and has MMCTC Ltd. India Bulls financial Services Ltd., Indian Potash Ltd., KRIBHCO and IDFC.

**Commodity Traded:**

- Gold
- Silver
- Copper
- Lead
- Crude oil
- Natural gas
- Mustard
- Soyabean
- Soyabean oil
- Jute
- Menthe oil
- Iron ore

**5. Shariah Index:** The Bombay stock exchange and Taqwaa advisory and Shariah investment solutions have launched it.

**Establishment:** Dec. 2010

**Headquarter:** Gurgaon

This is the first Shariah index created in India utilizing the strict guidelines and local expertise of a domestic Shariah Advisory Board. The index comprises the 50 largest and most liquid shariah compliant stocks within BSE-500.

**6. Universal Commodity Exchange:** It's a national level electronic commodity exchange in India.

**Establishment:** April, 2013

**Promoters:** Commex Technology, IDBI Bank, IFFCO, NABARD and REC.

**Commodity Traded:** It deals in 11 commodities.

- Gold
- Silver
- Crude oil
- Chana
- Rubber
- Mustard
- Soyabean

- Refined soya oil
- Turmeric

### **Types of Trading Instruments**

Because traders rely on small price movements for profits, there are two important factors to consider when deciding which instruments to trade: liquidity and volatility. To review, liquidity describes the ability to execute orders of any size quickly and efficiently without causing a significant change in price. In simple terms, liquidity refers to the ease with which shares (or contracts) can be bought and sold. Liquidity can be measured in terms of:

- Width - How tight is the bid/ask spread?
- Depth - How deep is the market (how many orders are resting beyond the best bid and best offer)?
- Immediacy - How quickly can a large market order be executed?
- Resiliency - How long does it take the market to bounce back after a large order is filled?

Markets with good liquidity typically trade with tight bid/ask spreads and with enough market depth to quickly fill orders. Liquidity is important because it helps ensure that your orders will be:

- Filled
- Filled with minimal slippage
- Filled without substantially affecting price

Volatility measures the amount and speed at which a price moves up and down. When a trading instrument experiences volatility, it provides an opportunity to profit from the change in price. Any change in price - whether rising or falling - creates an opportunity to profit; it is difficult to make a profit if price stays the same.

You can get a good idea about an instrument's liquidity and volatility by looking at:

- Average daily trading volume (ADTV) - the average number of shares or contracts that are traded in a day or over a specified period of time. When ADTV is high, the instrument has good liquidity and can be easily traded.
- Average daily trading range - the average difference between the high and low prices for a given instrument over a specified period of time. A wider trading range equates to more volatility, which, for traders, means greater potential for profits (and losses).

Volume indicators can be added to any price chart; volume typically appears as a histogram beneath the price chart. Each bar of the histogram represents the volume that occurred during the corresponding price bar. For example, if you are trading with a 5-minute chart, each price bar shows the price movement that took place during that 5-minute period, and each volume bar indicates the trading activity for the same period. A moving average can be added to volume to determine the average values. A 20-day moving average, for example, would show the average daily trading volume over the previous 20 days.

The average daily trading range shows how much price movement there is, on average, over a selected time period. This value can be determined by calculating the difference between the daily high and low prices over a specified number of days. An easy way to do this is to apply a moving average to a daily chart that uses the high-low price (rather than just the high or low) in its calculation. The length of the moving average will determine the number of days that are used in the calculation.

### **Popular Instruments**

Most traders choose instruments that trade under good liquidity and with enough price movement to allow profits. That said, just because the e-mini S&P 500 (ES) contract fits that bill, doesn't mean it will be appropriate for your trading style or risk tolerance. Finding an instrument that matches your style may take a bit of research. As a starting point, these instruments tend to be popular among active traders:

#### **1. Commodities**

Commodities are typically bought and sold through futures contracts on exchanges that standardize the quantity and minimum quality of the commodity being traded. The main categories of commodities include agricultural, livestock and meat, energy, precious metals and industrial metals. The most actively traded commodities include crude oil and its derivatives (i.e., heating oil and gasoline); precious metals; and agricultural products such as corn, sugar, soybeans, wheat, coffee and cotton.

## 2. E-minis

An "e-mini" is an electronically traded futures contract that represents a portion of a standard futures contract. As futures contracts, the e-minis represent an agreement to buy or sell the cash value of the underlying index at a specified future date. The contracts are sized at a certain value times the futures price; this value depends on the particular e-mini. The e-mini S&P 500, for example, has a contract size of \$50 times the e-mini S&P 500 futures price. If the value of the e-mini S&P 500 is \$1,320, the value of the contract is \$66,000 (\$50 X \$1320). The value of the contract changes as the price of the futures moves. Mini contracts are available on a variety of products; however, traders typically refer to the e-mini stock index futures contracts when discussing e-minis: the e-mini S&P 500 (ES), e-mini Russell 2000 (TF), e-mini Dow (YM) and the e-mini Nasdaq 100 (NQ) contracts.

## 3. Exchange Traded Funds

Exchange traded funds (ETFs) are uniquely structured investment funds that track broad-based or sector indexes, commodities and baskets of assets. ETFs trade just like stocks on regulated exchanges and can be sold short and purchased on margin. And, like stocks, ETF prices fluctuate throughout each trading session in response to market events and investor activity. Some of the most actively traded ETFs include SPDR S&P 500 (ARCA:SPY), MSCI Emerging Markets Index Fund (ARCA:EEM), S&P 500 VIX Short-Term Futures ETN (ARCA:VXX), Financial Select Sector SPDR (ARCA:XLF), Russell 2000 Index Fund (ARCA:IWM), MSCI Japan Index Fund (ARCA:EWJ) and PowerShares QQQ Trust (Nasdaq:QQQ).

## 4. Forex

Forex is the foreign exchange market where currencies are traded. The forex markets are the largest and most actively traded financial markets in the world, accounting for more than \$4 trillion in average daily volume. Forex is appealing to many traders and investors for a variety of reasons including its relative stability, its round-the-clock nature and access to significant leverage. The four pairs that are the most heavily traded are known as the "majors." They include the euro/U.S. dollar (EUR/USD); U.S. dollar/Japanese yen (USD/JPY); U.S. dollar/Swiss franc (USD/CHF); and the British pound/U.S. dollar (GBP/USD).



## 5. Stocks

Stocks are a type of investment that signifies ownership in a company. The number of companies in which investors and traders can buy stock has been steadily declining over the past decade as firms are delisted, go private or are bought out. In 2000, for example, there were 6,639 listed stocks; by the end of 2012, that number had dropped to 3,687. Despite the shrinking list of publicly traded companies, stocks continue to be popular among active traders because of their liquidity. The actual trading volume varies day to day; however, certain stocks including Bank of America (NYSE:BAC), Zynga (Nasdaq:ZNGA), Sirius XM Radio (Nasdaq:SIRI), Ford (NYSE:F), Standard Pacific (NYSE:SPF) and Intel (Nasdaq:INTC) tend to hang out at the top of the list.

## 6. Treasuries

Treasuries are negotiable U.S. government debt obligations backed by the full faith and credit of the United States. The four that trade with the most volume are the 10-Year Note, 30-Year Bond, 5-Year Note and 2-Year Note. There are also exchange traded funds available that provide exposure to government debt markets, including the iShares Barclays 20+ Year Treasury Bond (ARCA:TLT) and the ProShares Ultra Short 20+ Year Treasury (ARCA:TBT).

## Hedging

A hedge is an investment to reduce the risk of adverse price movements in an asset. Normally, a hedge consists of taking an offsetting position in a related security, such as a futures contract.

Hedging is analogous to taking out an insurance policy. If you own a home in a flood-prone area, you will want to protect that asset from the risk of flooding – to hedge it, in other words – by taking out flood insurance. There is a risk-reward tradeoff inherent in hedging; while it reduces potential risk, it also chips away at potential gains. Put simply, hedging isn't free. In the case of the flood insurance policy, the monthly payments add up, and if the flood never comes, the policy holder receives no payout. Still, most people would choose to take that predictable, circumscribed loss rather than suddenly lose the roof over their head.

A perfect hedge is one that eliminates all risk in a position or portfolio. In other words, the hedge is 100% inversely correlated to the vulnerable asset. This is more an ideal than a reality on the ground, and even the hypothetical perfect hedge is not without cost.

Basis risk refers to the risk that an asset and a hedge will not move in opposite directions as expected; "basis" refers to the discrepancy.

### **Hedging Through Derivatives**

Derivatives are securities that move in terms of one or more underlying assets. They include options, swaps, futures and forward contracts. The underlying assets can be stocks, bonds, commodities, currencies, indices or interest rates. Derivatives can be effective hedges against their underlying assets, since the relationship between the two is more or less clearly defined.

For example, if Morty buys 100 shares of Stock plc (STOCK) at \$10 per share, he might hedge his investment by taking out a \$5 American put option with a strike price of \$8 expiring in one year. This option gives Morty the right to sell 100 shares of STOCK for \$8 any time in the next year. If one year later STOCK is trading at \$12, Morty will not exercise the option and will be out \$5. He's unlikely to fret, though, since his unrealized gain is \$200 (\$195 including the price of the put). If STOCK is trading at \$0, on the other hand, Morty will exercise the option and sell his shares for \$8, for a loss of \$200 (\$205 including the price of the put). Without the option, he stood to lose his entire investment.

The effectiveness of a derivative hedge is expressed in terms of delta, sometimes called the "hedge ratio." Delta is the amount the price of a derivative moves per \$1 movement in the price of the underlying asset.

### **Hedging Through Diversification**

Using derivatives to hedge an investment enables for precise calculations of risk, but requires a measure of sophistication and often quite a bit of capital. Derivatives are not the only way to hedge, however. Strategically diversifying a portfolio to reduce certain risks can also be considered a—rather crude—hedge. For example, Rachel might invest in a luxury goods company with rising margins. She might worry, though, that a recession could wipe out the market for conspicuous consumption. One way to combat that would be to buy tobacco stocks or utilities, which tend to weather recessions well and pay hefty dividends.

This strategy has its tradeoffs: If wages are high and jobs are plentiful, the luxury goods maker might thrive, but few investors would be attracted to boring counter-cyclical stocks, which might fall as capital flows to more exciting places. It also has its risks: There is no guarantee that the luxury goods stock and the hedge will move in opposite directions. They could both drop due to one catastrophic event, as happened during the financial crisis,

or for unrelated reasons, such as floods in China drive tobacco prices up, while a strike in Mexico does the same to silver.

### **Speculation**

Speculation is the act of conducting a financial transaction that has substantial risk of losing all value but with the expectation of a significant gain. With speculation, the risk of loss is more than offset by the possibility of a huge gain. Otherwise, there would be very little motivation to speculate. It may sometimes be difficult to distinguish between speculation and investment, and whether an activity qualifies as speculative or investing can depend on a number of factors, including the nature of the asset, the expected duration of the holding period, and the amount of leverage.

**Definition:** Speculation involves trading a financial instrument involving high risk, in expectation of significant returns. The motive is to take maximum advantage from fluctuations in the market.

**Description:** Speculators are prevalent in the markets where price movements of securities are highly frequent and volatile. They play very important roles in the markets by absorbing excess risk and providing much needed liquidity in the market by buying and selling when other investors don't participate.

### **Arbitrage**

Arbitrage is the simultaneous purchase and sale of an asset to profit from an imbalance in the price. It is a trade that profits by exploiting the price differences of identical or similar financial instruments on different markets or in different forms. Arbitrage exists as a result of market inefficiencies and would therefore not exist if all markets were perfectly efficient.

Arbitrage occurs when a security is purchased in one market and simultaneously sold in another market at a higher price, thus considered to be risk-free profit for the trader. Arbitrage provides a mechanism to ensure prices do not deviate substantially from fair value for long periods of time. With advancements in technology, it has become extremely difficult to profit from pricing errors in the market. Many traders have computerized trading systems set to monitor fluctuations in similar financial instruments. Any inefficient pricing setups are usually acted upon quickly, and the opportunity is often eliminated in a matter of seconds. Arbitrage is a necessary force in the financial marketplace.

### A Simple Arbitrage Example

As a simple example of arbitrage, consider the following. The stock of Company X is trading at \$20 on the New York Stock Exchange (NYSE) while, at the same moment, it is trading for \$20.05 on the London Stock Exchange (LSE). A trader can buy the stock on the NYSE and immediately sell the same shares on the LSE, earning a profit of 5 cents per share. The trader could continue to exploit this arbitrage until the specialists on the NYSE run out of inventory of Company X's stock, or until the specialists on the NYSE or LSE adjust their prices to wipe out the opportunity.

### Types of arbitrage

#### Spatial arbitrage

Also known as **geographical arbitrage**, this is the simplest form of arbitrage. In spatial arbitrage, an arbitrageur looks for price differences between geographically separate markets. For example, there may be a bond dealer in Virginia offering a bond at 100-12/23 and a dealer in Washington bidding 100-15/23 for the same bond. For whatever reason, the two dealers have not spotted the difference in the prices, but the arbitrageur does. The arbitrageur immediately buys the bond from the Virginia dealer and sells it to the Washington dealer.

#### Merger arbitrage

Also called risk arbitrage, merger arbitrage generally consists of buying/holding the stock of a company that is the target of a takeover while shorting the stock of the acquiring company.

Usually the market price of the target company is less than the price offered by the acquiring company. The spread between these two prices depends mainly on the probability and the timing of the takeover being completed as well as the prevailing level of interest rates.

The bet in a merger arbitrage is that such a spread will eventually be zero, if and when the takeover is completed. The risk is that the deal "breaks" and the spread massively widens.

#### Municipal bond arbitrage

Also called municipal bond relative value arbitrage, municipal arbitrage, or just muni arb, this hedge fund strategy involves one of two approaches. The term "arbitrage" is also used in the context of the Income Tax Regulations governing the investment of proceeds of municipal bonds; these regulations, aimed at the issuers or beneficiaries of tax-exempt

municipal bonds, are different and, instead, attempt to remove the issuer's ability to arbitrage between the low tax-exempt rate and a taxable investment rate.

Generally, managers seek relative value opportunities by being both long and short municipal bonds with a duration-neutral book. The relative value trades may be between different issuers, different bonds issued by the same entity, or capital structure trades referencing the same asset (in the case of revenue bonds). Managers aim to capture the inefficiencies arising from the heavy participation of non-economic investors (i.e., high income "buy and hold" investors seeking tax-exempt income) as well as the "crossover buying" arising from corporations' or individuals' changing income tax situations (i.e., insurers switching their munis for corporates after a large loss as they can capture a higher after-tax yield by offsetting the taxable corporate income with underwriting losses). There are additional inefficiencies arising from the highly fragmented nature of the municipal bond market which has two million outstanding issues and 50,000 issuers, in contrast to the Treasury market which has 400 issues and a single issuer.

Second, managers construct leveraged portfolios of AAA- or AA-rated tax-exempt municipal bonds with the duration risk hedged by shorting the appropriate ratio of taxable corporate bonds. These corporate equivalents are typically interest rate swaps referencing Libor or SIFMA. The arbitrage manifests itself in the form of a relatively cheap longer maturity municipal bond, which is a municipal bond that yields significantly more than 65% of a corresponding taxable corporate bond. The steeper slope of the municipal yield curve allows participants to collect more after-tax income from the municipal bond portfolio than is spent on the interest rate swap; the carry is greater than the hedge expense. Positive, tax-free carry from muni arb can reach into the double digits. The bet in this municipal bond arbitrage is that, over a longer period of time, two similar instruments—municipal bonds and interest rate swaps—will correlate with each other; they are both very high quality credits, have the same maturity and are denominated in the same currency. Credit risk and duration risk are largely eliminated in this strategy. However, basis risk arises from use of an imperfect hedge, which results in significant, but range-bound principal volatility. The end goal is to limit this principal volatility, eliminating its relevance over time as the high, consistent, tax-free cash flow accumulates. Since the inefficiency is related to government tax policy, and hence is structural in nature, it has not been arbitrated away.

Note, however, that many municipal bonds are callable, and that this imposes substantial additional risks to the strategy.

### **Convertible bond arbitrage**

A convertible bond is a bond that an investor can return to the issuing company in exchange for a predetermined number of shares in the company.

A convertible bond can be thought of as a corporate bond with a stock call option attached to it.

The price of a convertible bond is sensitive to three major factors:

- Interest rate: When rates move higher, the bond part of a convertible bond tends to move lower, but the call option part of a convertible bond moves higher (and the aggregate tends to move lower).
- Stock price: When the price of the stock the bond is convertible into moves higher, the price of the bond tends to rise.
- credit spread: If the creditworthiness of the issuer deteriorates (e.g. rating downgrade) and its credit spread widens, the bond price tends to move lower, but, in many cases, the call option part of the convertible bond moves higher (since credit spread correlates with volatility).

Given the complexity of the calculations involved and the convoluted structure that a convertible bond can have, an arbitrageur often relies on sophisticated quantitative models in order to identify bonds that are trading cheap versus their theoretical value.

Convertible arbitrage consists of buying a convertible bond and hedging two of the three factors in order to gain exposure to the third factor at a very attractive price.

For instance an arbitrageur would first buy a convertible bond, then sell fixed income securities or interest rate futures (to hedge the interest rate exposure) and buy some credit protection (to hedge the risk of credit deterioration). Eventually what he'd be left with is something similar to a call option on the underlying stock, acquired at a very low price. He could then make money either selling some of the more expensive options that are openly traded in the market or delta hedging his exposure to the underlying shares.

### **Depository receipts**

A depository receipt is a security that is offered as a "tracking stock" on another foreign market. For instance, a Chinese company wishing to raise more money may issue a depository receipt on the New York Stock Exchange, as the amount of capital on the local

exchanges is limited. These securities, known as ADRs (American depositary receipt) or GDRs (global depositary receipt) depending on where they are issued, are typically considered "foreign" and therefore trade at a lower value when first released. Many ADR's are exchangeable into the original security (known as fungibility) and actually have the same value. In this case there is a spread between the perceived value and real value, which can be extracted. Other ADR's that are not exchangeable often have much larger spreads. Since the ADR is trading at a value lower than what it is worth, one can purchase the ADR and expect to make money as its value converges on the original. However, there is a chance that the original stock will fall in value too, so by shorting it one can hedge that risk.

### **Cross-border arbitrage**

Cross-border arbitrage exploits different prices of the same stock in different countries:

Example: Apple is trading on NASDAQ at US\$108.84. The stock is also traded on the German electronic exchange, XETRA. If 1 euro costs US\$1.11, a cross-border trader could enter a buy order on the XETRA at €98.03 per Apple share and a sell order at €98.07 per share.

Some brokers in Germany do not offer access to the U.S. exchanges. Hence if a German retail investor wants to buy Apple stock, he needs to buy it on the XETRA. The cross-border trader would sell the Apple shares on XETRA to the investor and buy the shares in the same second on NASDAQ. Afterwards, the cross-border trader would need to transfer the shares bought on NASDAQ to the German XETRA exchange, where he is obliged to deliver the stock.

In most cases, the quotation on the local exchanges is done electronically by high-frequency traders, taking into consideration the home price of the stock and the exchange rate. This kind of high-frequency trading benefits the public as it reduces the cost to the German investor and enables him to buy U.S. shares.

### **Dual-listed companies**

A dual-listed company (DLC) structure involves two companies incorporated in different countries contractually agreeing to operate their businesses as if they were a single enterprise, while retaining their separate legal identity and existing stock exchange listings. In integrated and efficient financial markets, stock prices of the twin pair should move in lockstep. In practice, DLC share prices exhibit large deviations from theoretical parity.



Arbitrage positions in DLCs can be set up by obtaining a long position in the relatively underpriced part of the DLC and a short position in the relatively overpriced part. Such arbitrage strategies start paying off as soon as the relative prices of the two DLC stocks converge toward theoretical parity. However, since there is no identifiable date at which DLC prices will converge, arbitrage positions sometimes have to be kept open for considerable periods of time. In the meantime, the price gap might widen. In these situations, arbitrageurs may receive margin calls, after which they would most likely be forced to liquidate part of the position at a highly unfavorable moment and suffer a loss. Arbitrage in DLCs may be profitable, but is also very risky.

A good illustration of the risk of DLC arbitrage is the position in Royal Dutch Shell—which had a DLC structure until 2005—by the hedge fund Long-Term Capital Management (LTCM, see also the discussion below). Lowenstein (2000) describes that LTCM established an arbitrage position in Royal Dutch Shell in the summer of 1997, when Royal Dutch traded at an 8 to 10 percent premium. In total, \$2.3 billion was invested, half of which was long in Shell and the other half was short in Royal Dutch (Lowenstein, p. 99). In the autumn of 1998, large defaults on Russian debt created significant losses for the hedge fund and LTCM had to unwind several positions. Lowenstein reports that the premium of Royal Dutch had increased to about 22 percent and LTCM had to close the position and incur a loss. According to Lowenstein (p. 234), LTCM lost \$286 million in equity pairs trading and more than half of this loss is accounted for by the Royal Dutch Shell trade.

### **Private to public equities**

The market prices for privately held companies are typically viewed from a return on investment perspective (such as 25%), whilst publicly held and or exchange listed companies trade on a Price to earnings ratio (P/E) (such as a P/E of 10, which equates to a 10% ROI). Thus, if a publicly traded company specialises in the acquisition of privately held companies, from a per-share perspective there is a gain with every acquisition that falls within these guidelines. E.g., Berkshire Hathaway and Halydean Corporation. Private to public equities arbitrage is a term which can arguably be applied to investment banking in general. Private markets to public markets differences may also help explain the overnight windfall gains enjoyed by principals of companies that just did an Initial Public Offering (IPO).

### **Regulatory arbitrage**

Regulatory arbitrage is where a regulated institution takes advantage of the difference between its real (or economic) risk and the regulatory position. For example, if a bank, operating under the Basel I accord, has to hold 8% capital against default risk, but the real risk of default is lower, it is profitable to securitise the loan, removing the low risk loan from its portfolio. On the other hand, if the real risk is higher than the regulatory risk then it is profitable to make that loan and hold on to it, provided it is priced appropriately. Regulatory arbitrage can result in parts of entire businesses being unregulated as a result of the arbitrage.

This process can increase the overall riskiness of institutions under a risk insensitive regulatory regime, as described by Alan Greenspan in his October 1998 speech on The Role of Capital in Optimal Banking Supervision and Regulation.

The term "Regulatory Arbitrage" was used for the first time in 2005 when it was applied by Scott V. Simpson, a partner at law firm Skadden, Arps, to refer to a new defence tactic in hostile mergers and acquisitions where differing takeover regimes in deals involving multi-jurisdictions are exploited to the advantage of a target company under threat.

In economics, regulatory arbitrage (sometimes, tax arbitrage) may be used to refer to situations when a company can choose a nominal place of business with a regulatory, legal or tax regime with lower costs. For example, an insurance company may choose to locate in Bermuda due to preferential tax rates and policies for insurance companies. This can occur particularly where the business transaction has no obvious physical location. In the case of many financial products, it may be unclear "where" the transaction occurs.

Regulatory arbitrage can include restructuring a bank by outsourcing services such as IT. The outsourcing company takes over the installations, buying out the bank's assets and charges a periodic service fee back to the bank. This frees up cashflow usable for new lending by the bank. The bank will have higher IT costs, but counts on the multiplier effect of money creation and the interest rate spread to make it a profitable exercise.

Example: Suppose the bank sells its IT installations for 40 million USD. With a reserve ratio of 10%, the bank can create 400 million USD in additional loans (there is a time lag, and the bank has to expect to recover the loaned money back into its books). The bank can often lend (and securitize the loan) to the IT services company to cover the acquisition cost of the IT installations. This can be at preferential rates, as the sole client using the IT installation is the bank. If the bank can generate 5% interest margin on the 400 million of new

loans, the bank will increase interest revenues by 20 million. The IT services company is free to leverage their balance sheet as aggressively as they and their banker agree to. This is the reason behind the trend towards outsourcing in the financial sector. Without this money creation benefit, it is actually more expensive to outsource the IT operations as the outsourcing adds a layer of management and increases overhead.

According to PBS Frontline's 2012 four-part documentary, "Money, Power, and Wall Street," regulatory arbitrage, along with asymmetric bank lobbying in Washington and abroad, allowed investment banks in the pre- and post-2008 period to continue to skirt laws and engage in the risky proprietary trading of opaque derivatives, swaps, and other credit-based instruments invented to circumvent legal restrictions at the expense of clients, government, and publics.

Due to the Affordable Care Act's expansion of Medicaid coverage, one form of Regulatory Arbitrage can now be found when businesses engage in "Medicaid Migration", a maneuver by which qualifying employees who would typically be enrolled in company health plans elect to enroll in Medicaid instead. These programs that have similar characteristics as insurance products to the employee, but have radically different cost structures, resulting in significant expense reductions for employers.

### **Telecom arbitrage**

Telecom arbitrage companies allow phone users to make international calls for free through certain access numbers. Such services are offered in the United Kingdom; the telecommunication arbitrage companies get paid an interconnect charge by the UK mobile networks and then buy international routes at a lower cost. The calls are seen as free by the UK contract mobile phone customers since they are using up their allocated monthly minutes rather than paying for additional calls.

Such services were previously offered in the United States by companies such as FuturePhone.com. These services would operate in rural telephone exchanges, primarily in small towns in the state of Iowa. In these areas, the local telephone carriers are allowed to charge a high "termination fee" to the caller's carrier in order to fund the cost of providing service to the small and sparsely populated areas that they serve. However, Future Phone (as well as other similar services) ceased operations upon legal challenges from AT&T and other service providers.

### **Statistical arbitrage**

Statistical arbitrage is an imbalance in expected nominal values. A casino has a statistical arbitrage in every game of chance that it offers—referred to as the house advantage, house edge, vigorish or house vigorish.

**KARPAGAM ACADEMY OF HIGHER EDUCATION**

CLASS: II MBA – A and B

COURSE NAME: BONDS, DERIVATIVES AND COMMODITY MARKET MANAGEMENT

COURSE CODE: 17MBAPF401C

UNIT: IV(Introduction to Commodity Trading)

BATCH-2017-2019

S.No	Question	Option - I	Option - II	Option - III	Option - IV	Answer
1	Daily mark to market settlement is done	Till the date of contract expiry	As long as the contract makes a loss	On the last day of week	On the last trading day of the month	Till the date of contract expiry
2	.....is the actual process of exchanging money and goods.	Transfer	Settlement	Netting	Clearing	Settlement
3	.....work at making profits by taking advantage of discrepancy between prices of the same product across different markets.	Arbitraders	Speculators	Exchange	Hedgers	Arbitraders
4	Commodity exchanges enable producers and consumer to hedge their ..... given the uncertainty of the future.	seasonal risk	profit risk	production risk	price risk	price risk
5	Which of the following is not true about the national level exchanges?	Offers online trading	Recognized on permanent basis	Offers single commodity for trading	Volumes higher than regional exchanges	Offers single commodity for trading
6	Which of the following Exchange does not offer derivative trading in Soybean?	LME	NCDEX	CBOT	MCX	LME
7	.....Exchanges provide real time, online, transparent and vibrant spot platform for commodities.	Electronic Spot	Regional	Futures	Stock	Electronic Spot

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8	.....can only trade through their account or on account of their clients and however clear their trade through PCMs/STCMs.	Trading cum Clearing Member	Trading Member	Commodity Participant	Associate Member	Trading Member
9	The minimum network requirement for PCM on the NCDEX is.....	50 Lacs	500 Lacs	5000 Lacs	5 lacs	5000 Lacs
10	Members can opt to meet the security deposit requirement by way of .....	Cash	Bank Guarantee	Fixed Deposit Receipts	All of the Given Answer	All of the Given Answer
11	In the case of certain commodities like gold and silver, delivery is staggered over last..... days of the contract.	Two	Three	Five	Thirteen	Five
12	The cash settlement is only for the incremental gain/ loss as determined on the basis of .....	Final settlement price	Average price for the day	Opening price.	Last traded price	Final settlement price
13	Unit of trading for Wheat at NCDEX is .....	1 MT	3 MT	1 kg	10 MT	10 MT
14	By using the currency forward market to sell dollars forward, an ..... can lock on to a rate today and reduce his uncertainty.	Importer	Speculator	Exporter	Arbitrager	Exporter
15	..... is the last day on which the futures contract will be traded, at the end of which it will cease to exist.	Redemption Date	Expiry Date	Exercise Date	Maturity Date	Expiry Date
16	A ..... option gives the holder the right but not the obligation to buy an asset by a certain date for a certain price."	Put	ITM	OTM	Call	Call

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17	An ..... option is an option that would lead to a zero cash flow to the holder if it were exercised immediately.	In the money	At the money	Out of the money	Put	At the money
18	A call option with a strike price of 150 trades in the market at premium of Rs.12. The spot price is Rs.160. The time value of the option is Rs. ....	12	10	2	8	2
19	A put option with a strike price of 150 trades in the market at Rs.8. The spot price is Rs.160. The intrinsic value of the option is Rs. ....	0	8	2	10	0
20	A trader buys three-month put options on 1 unit of gold with a strike of Rs.17000/10 gms at a premium of Rs.70. Unit of trading is 1kg. On the day of expiration, the spot price of gold is Rs.16800/10 gms. What is his net payoff?	(+) 13,000	(+) 20,000	(-) 13,000	(-) 20,000	(+) 13,000
21	One unit of trading for Guar Seed futures is 10 MT and delivery unit is 10 MT. A trader sells 1 unit of Guar Seed at Rs.2500/Quintal on the futures market. A week later Guar Seed futures trade at Rs.2550/Quintal. How much profit/loss has he made on his position?	(-)5000	(+)5000	(+)50,000	(-)50,000	(-)5000
22	The ..... position is considered for exposure and daily margin purposes.	Short	Long	Net	Open	Open
23	When the futures price of a commodity appears underpriced in relation to its spot price, an opportunity for ..... arbitrage arises.	reverse cash and carry	cash and carry	Reverse only	cash only	reverse cash and carry



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24	A ..... order, is an order which is valid for the day on which it is entered.	Good till offset	Good till day	Good till filled	Good till cancelled	Good till day
25	CHARJDEL is a symbol for the ..... futures contract traded on NCDEX:	Copper	Chilli	Chana	Crude Oil	Chana
26	A trader sells 5 units of gold futures at Rs.16500 per 10 grams. What is the value of his open short position? Unit of trading is 1 Kg and delivery unit is one Kg.	Rs.82,500	Rs.82,50,000	Rs.8,25,000	Rs.82,000	Rs.82,50,000
27	The total number of outstanding contracts (long/short) at any point in time is called .....	Hedge Limit	Transaction Charge	Delivery Lot	Open Interest	Open Interest
28	A trader has sold crude oil futures at Rs.3750 per barrel. He wishes to limit his loss to 20%. He does so by placing a stop order to buy an offsetting contract if the price goes to or above .....	Rs.4650	Rs.4500	Rs.3825	Rs.3925	Rs.4500
29	On introduction of new contracts, the base price is the ..... of the underlying commodity in the prevailing spot markets.	previous days' average price	previous days' closing price	price decided by pre-open auction	price decided by the exchange	previous days' closing price
30	A trader requires to take a long gold futures position worth Rs.85,00,000 as part of his hedging strategy. Two month futures trade at Rs.17000 per 10 gms. Unit of trading is 1Kg and delivery unit is one Kg. How many units must he purchase to give	5 units	14 units	50 units	10 units	5 units

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	him the hedge?					
31	A trading member has proprietary and client positions in a March Chilli futures contract. On his proprietary account, he bought 700 trading units at Rs.6000 per Quintal and sold 250 at Rs.6015 per Quintal. On account of client A, he bought 200 trading units at Rs.6012 per Quintal, and on account of client B, he sold 100 trading units at Rs.5990 per Quintal. What is the outstanding position on which he would be margined?	750	950	450	850	750
32	For Intention Matching and Seller's Right contracts traded at NCDEX, one of the components of the amount of penalty imposed on a seller in case of a delivery default would be ..... percent of final settlement price.	2	2.5	3	3.5	2.5
33	If the value of claim, difference or dispute is more than ..... on the date of application, then such claim, difference or dispute are to be referred to a panel of three arbitrators.	Rs.10 Lakh	Rs.50 Lakh	Rs.25 Lakh	Rs.75 Lakh	Rs.50 Lakh

**KARPAGAM ACADEMY OF HIGHER EDUCATION**

CLASS: II MBA – A and B

COURSE NAME: BONDS, DERIVATIVES AND COMMODITY MARKET MANAGEMENT

COURSE CODE: 17MBAPF401C

UNIT: IV(Introduction to Commodity Trading)

BATCH-2017-2019

34	On respective ..... day, clearing members effect depository delivery in the depository clearing system as per delivery statement in respect of depository deals.	Pay-in	Expiration	Settlement	Pay-out	Pay-in
35	..... refers to issue of physical delivery against the credit in the demat account of the constituent.	Securitisation	De-materialisation	Re-materialisation	Liquidation	Re-materialisation
36	Any person seeking to dematerialize a commodity has to open an account with an approved	Clearing house	Exchange	Depository Participant	Bank	Depository Participant
37	Where a trade cancellation is permitted and trading member wishes to cancel a trade, it can be done only with the approval of the .....	Clearing Corporation	SEBI	RBI	Exchange	Exchange
38	In the case of settlements culminating into delivery, sales tax at the rates applicable in the state where the ..... is located will be payable.	Buyer	Delivery Center	Seller	Exchange	Delivery Center
39	After the sales tax/VAT obligations are determined, the seller client has to raise the .....	Award	Schedule	Commodity	Invoice	Invoice
40	The participants need to access the NSPOT trading system either as client through a member or as ..... of NSPOT.	Dealer	Agent	Member	Contractor	Member

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BATCH-2017-2019

41	Electronic spot exchange benefits the farmers by way of providing .....	counterparty guarantee	direct access to a national level transparent market	better holding capacity of the produce	All of the above	All of the above
42	In case the participant would need to , then he will have to deposit the goods in NSPOT pre-notified accredited warehouse before putting an order for the corresponding quantity in the NSPOT trading system	buy	sell	buy and sell	all of the above	sell
43	..... is an exciting and sophisticated type of investment.	Investment	Commodity Purchase	Commodity trading	Commodity Selling	Commodity trading
44	Derivative is the..... whose value is derived from the underlying asset or the contract where delivery of security or commodity held on specific future date	buy	contract	sell	buy and sell	contract
45	An "e-mini" is an electronically traded futures contract that represents a portion of a standard .....	futures contract.	forward trades	Options	Swaps	futures contract.
46	..... are uniquely structured investment funds that track broad-based or sector indexes, commodities and baskets of assets.	Single Underlying assets	Exchange traded funds	Multi - Lateral Understanding	Uni Lateral Understanding	Exchange traded funds
47	Forex is the foreign exchange market where ..... are traded.	commodity	Gold	Silver	currencies	currencies
48	A ..... is an investment to reduce the risk of adverse price	Gambling	hedge	Games	Speculation	hedge

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BATCH-2017-2019

	movements in an asset.					
49	a hedge consists of taking an offsetting position in a related security, such as a .....	futures contract.	forward trades	Options	Swaps	futures contract.
50	Hedging is analogous to taking out an .....	Bank Policy	Investment	insurance policy	Return	insurance policy
51	A perfect ..... is one that eliminates all risk in a position or portfolio.	Gambling	hedge	Games	Speculation	hedge
52	..... are prevalent in the markets where price movements of securities are highly frequent and volatile.	Gambling	hedge	Games	Speculators	Speculators
53	..... is the simultaneous purchase and sale of an asset to profit from an imbalance in the price.	hedge	Arbitrage	Gambling	Speculation	Arbitrage
54	..... arbitrage generally consists of buying/holding the stock of a company that is the target of a takeover while shorting the stock of the acquiring company.	Join	Takeover	merger	Amalgamation	merger
55	..... arbitrage companies allow phone users to make international calls for free through certain access numbers.	Telecom	Takeover	merger	Amalgamation	Telecom

**KARPAGAM ACADEMY OF HIGHER EDUCATION****CLASS: II MBA – A and B****COURSE NAME: BONDS, DERIVATIVES AND COMMODITY MARKET MANAGEMENT****COURSE CODE: 17MBAPF401C****UNIT: IV(Introduction to Commodity Trading)****BATCH-2017-2019**

56	Holding other factors constant, which one of the following bonds has the smallest price volatility?	A. 5-year, 0% coupon bond	B. 5-year, 12% coupon bond	C. 5 year, 14% coupon bond	D. 5-year, 10% coupon bond	C. 5 year, 14% coupon bond
57	A seven-year par value bond has a coupon rate of 9% and a modified duration of	7 years.	5.49 years.	5.03 years.	4.87 years.	5.03 years.
58	When interest rates decline, the duration of a 10-year bond selling at a premium	increases.	decreases.	remains the same.	increases at first, then declines.	increases.
59	The duration of a bond normally increases with an increase in	term to maturity.	yield to maturity.	coupon rate.	All of these are correct.	term to maturity.
60	In an options contract, the option lies with the	Buyer	Exchange	Both	Seller	Buyer

**UNIT- V**

**SYLLABUS**

Clearing, settlement and risk management in commodity trading, Calendar and settlement schedule – Position determination – Settlement mechanism - Settlement price – Margining – Final statement – Exception handling – Regularity framework. Case studies in relevant topics.

**Clearing & Settlement - Equities**

NSE Clearing carries out clearing and settlement functions as per the settlement cycles provided in the settlement schedule.

The clearing function of the clearing corporation is designed to work out a) what members are due to deliver and b) what members are due to receive on the settlement date. Settlement is a two way process which involves transfer of funds and securities on the settlement date.

NSE Clearing has also devised mechanism to handle various exceptional situations like security shortages, bad delivery, company objections, auction settlement etc.

Clearing is the process of determination of obligations, after which the obligations are discharged by settlement.

NSE Clearing has two categories of clearing members: trading clearing members and custodians. Trading members can trade on a proprietary basis or trade for their clients. All proprietary trades become the member's obligation for settlement. Where trading members trade on behalf of their clients they could trade for normal clients or for clients who would be settling through their custodians. Trades which are for settlement by Custodians are indicated with a Custodian Participant (CP) code and the same is subject to confirmation by the respective Custodian. The custodian is required to confirm settlement of these trades on T + 1 day by the cut-off time 1.00 p.m. Non-confirmation by custodian devolves the trade obligation on the member who had input the trade for the respective client.

A multilateral netting procedure is adopted to determine the net settlement obligations (delivery/receipt positions) of the clearing members. Accordingly, a clearing member would have either pay-in or pay-out obligations for funds and securities separately. In the case of securities in the Trade for Trade – Surveillance segment and auction trades, obligations are determined on a gross basis i.e. every trade results into a deliverable and receivable obligation of funds and securities. Members pay-in and pay-out obligations for funds and

securities are determined by 2.30 p.m. on T + 1 day and are downloaded to them so that they can settle their obligations on the settlement day (T+2).

#### **Auto Delivery Out facility**

For pay-in through NSDL / CDSL a facility has been provided to members wherein delivery-out instructions will be generated automatically by the Clearing Corporation based on the net delivery obligations of its Clearing Members. These instructions will be released on the T+1 day to NSDL / CDSL and the securities in the Clearing Members' pool accounts will be marked for pay-in. Clearing members desirous of availing this facility shall send a letter in the format provided in the Annexure.

#### **Cleared and non-cleared deals**

NSE Clearing carries out the clearing and settlement of trades executed on the exchange except Trade for trade - physical segment of capital market. Primary responsibility of settling these deals rests directly with the members and the Exchange only monitors the settlement. The parties are required to report settlement of these deals to the Exchange.

#### **More about Clearing & Settlement**

- Settlement Cycle
- Shortages Handling
- Securities Settlement
- Funds Settlement
- Data and Reports Download
- Penalties
- Electronic Reporting
- Non-cleared (Trade for Trade) Deals
- Inter-Institutional Deals and Block Deals

Any transfer of financial instruments, such as stocks, in the primary or secondary markets involves 3 processes:

1. execution
2. clearing
3. settlement



**Execution** is the transaction whereby the seller agrees to sell and the buyer agrees to buy a security in a legally enforceable transaction. Thereafter, all the processes that lead up to settlement is referred to as clearing, such as recording the transaction. Settlement is the actual exchange of money, or some other value, for the securities.

**Clearing** is the process of updating the accounts of the trading parties and arranging for the transfer of money and securities. There are 2 types of clearing: bilateral clearing and central clearing. In **bilateral clearing**, the parties to the transaction undergo the steps legally necessary to settle the transaction. **Central clearing** uses a third-party — usually a clearinghouse — to clear trades. Clearinghouses are generally used by the members who own a stake in the clearinghouse. Members are generally broker-dealers. Only members may directly use the services of the clearinghouse; retail customers and other brokerages gain access by having accounts with member firms. The member firms have financial responsibility to the clearinghouse for the transactions that are cleared. It is the responsibility of the member firms to ensure that the securities are available for transfer and that sufficient margin is posted or payments are made by the customers of the firms; otherwise, the member firms will have to make up for any shortfalls. If a member firm becomes financially insolvent, only then will the clearinghouse make up for any shortcomings in the transaction.

#### Clearing Settlement and risk management in commodity trading

National Clearing Limited (NSE Clearing) formerly known as National Securities Clearing Corporation Limited (NSCCL) is the clearing and settlement agency for all deals executed on the Derivatives (Futures & Options) segment. NSE Clearing acts as legal counter-party to all deals on NSE's F&O segment and guarantees settlement.

A Clearing Member (CM) of NSE Clearing has the responsibility of clearing and settlement of all deals executed by Trading Members (TM) on NSE, who clear and settle such deals through them.

**More about Clearing and Settlement**

- Clearing Members
- Clearing Banks
- Clearing Mechanism
- Settlement Schedule
- Settlement Price
- Settlement Mechanism
- Corporate Action Adjustment
- Data & Reports Download
- Penalties
- Custodial Participant Deals
- FII/MF position limits
- Securities Transaction Tax

**Settlement mechanism (Refer Unit 3)****Settlement Price**

Product	Settlement	Schedule
Futures Contracts on Index or Global Index Individual Security	Daily Settlement	Closing price of the futures contracts on the trading day. (closing price for a futures contract shall be calculated on the basis of the last half an hour weighted average price of such contract)
Un-expired illiquid futures contracts (including Global Indices)	Daily Settlement	Theoretical Price computed as per formula $F = S + \text{ert}$
Futures Contracts on Index or Individual Securities	Final Settlement	Closing price of the relevant underlying index / security in the Capital Market segment of NSE, on the last trading day of the futures contracts.
Futures Contracts on Global Indices (S&P	Final Settlement	The Special Opening Quotation (SOQ) of the Global Indices S&P 500 and DJIA on the last trading day of

500 and DJIA)		the futures contracts
Options Contracts on Index and Individual Securities	Final Exercise Settlement	Closing price of such underlying security (or index) on the last trading day of the options contract.
Options Contracts on Global Indices	Final Exercise Settlement	The Special Opening Quotation (SOQ) of the Global Indices S&P 500 and DJIA on the last trading day of the options contracts

### **Margin Trading**

**Definition:** In the stock market, margin trading refers to the process whereby individual investors buy more stocks than they can afford to. Margin trading also refers to intraday trading in India and various stock brokers provide this service. Margin trading involves buying and selling of securities in one single session. Over time, various brokerages have relaxed the approach on time duration. The process requires an investor to speculate or guess the stock movement in a particular session. Margin trading is an easy way of making a fast buck. With the advent of electronic stock exchanges, the once specialised field is now accessible to even small traders.

**Description:** The process is fairly simple. A margin account provides you the resources to buy more quantities of a stock than you can afford at any point of time. For this purpose, the broker would lend the money to buy shares and keep them as collateral.

In order to trade with a margin account, you are first required to place a request with your broker to open a margin account. This requires you to pay a certain amount of money upfront to the broker in cash, which is called the minimum margin. This would help the broker recover some money by squaring off, should the trader lose the bet and fail to recuperate the money.

Once the account is open, you are required to pay an initial margin (IM), which is a certain percentage of the total traded value pre-determined by the broker. Before you start trading, you need to remember three important steps. First, you need to maintain the

minimum margin (MM) through the session, because on a very volatile day, the stock price can fall more than one had anticipated.

For example, if a Tata Steel stock priced at Rs 400 falls 4.25 per cent and the IM and MM are 8 per cent and 4 per cent of the total value of the shares bought, respectively, then the trade-off  $8\% - 4.25\% = 3.75\%$  will be less than the MM. In this case, you will either have to give more money to the broker to maintain the margin or the trade will get squared off automatically by the broker.

Secondly, you need to square off your position at the end of every trading session. If you have bought shares, you have to sell them. And if you have sold shares, you will have to buy them at the end of the session.

Thirdly, convert it into a delivery order after trade, in which case you will have to keep the cash ready to buy all the shares you had bought during the session and to pay the broker's fees and additional charges.

If even one of these steps is missed, the broker will automatically square off the position in the market.

### **Example for Margin Trading**

Let us understand the margin trading derivatives with an example. When you trade in the future segment, you have to buy in lots. For example, one lot of Bank of India comprises 3000 shares. If you buy 3000 shares of Bank of India at Rs 130, the cost works out to Rs 39,000.

But, in margin trading in the derivative segment, you need to pay only margins and not the entire amount of Rs 390,000. At the moment, the margin fixed for Bank of India is just 13 per cent. So, you may end-up paying just Rs 52,000 in place of Rs 390,000. Margins in the derivatives segment vary from share to share and is fixed by the exchanges. This largely depends on the volatility and other aspects. For example, IndiaBulls Real Estate has a margin requirement of 19 per cent. What this means is that you need to pay as much as 19 per cent of the total value as margins for trading in the derivative segment of IndiaBulls Real Estate. For example, J P Associates commands a margin of as much as 21 per cent. This is largely on

account of the volatility of the stock. The higher the chances of the stock going down sharply, greater would be the margin set by the exchanges. In fact, the exchanges carefully analyze stocks and set margins. The Bank Nifty and the Nifty have the lowest margin of just 8 per cent. This is because the exchanges expect less volatility in the index as compared to individual stocks. Where to find margin requirements of the derivative segment? Most brokers would be able to provide you with the margin requirements for trading in the futures segment of the derivatives market. These margin requirements can change everyday depending on the volatility and movement of individual stocks and the markets as a whole.

### **Explanation for margin trading**

In the stock market, a margin is a loan that is made to the investor. It helps the investor to reduce the amount of her own cash that she uses to purchase securities. This creates leverage for the investor, causing gains and losses to be amplified. The loan must be paid back with interest.

- $\text{Margin \%} = \frac{\text{Market Value of the stock} - \text{Market value of the debt}}{\text{Market value of the stock}}$
- An initial margin loan in the U.S can be as much as 50%. The market value of the securities minus the amount borrowed can often be less than 50%, but the investor must keep a balance of 25-30% of the total market value of the securities in the margin account as a maintenance margin.

A margin in the futures market is the amount of cash an investor must put up to open an account to start trading. This cash amount is the initial margin requirement and it is not a loan. It acts as a down payment on the underlying asset and helps ensure that both parties fulfill their obligations. Both buyers and sellers must put up payments.

### **Initial Margin**

This is the initial amount of cash that must be deposited in the account to start trading contracts. It acts as a down payment for the delivery of the contract and ensures that the parties honor their obligations.

### **Maintenance Margin**

This is the balance a trader must maintain in his or her account as the balance changes due to price fluctuations. It is some fraction - perhaps 75% - of initial margin for a position. If the balance in the trader's account drops below this margin, the trader is required to deposit enough funds or securities to bring the account back up to the initial margin requirement. Such a demand is referred to as a margin call. The trader can close his position in this case but he is still responsible for the loss incurred. However, if he closes his position, he is no longer at risk of the position losing additional funds.

Futures (which are exchange-traded) and forwards (which are traded OTC) treat margin accounts differently. When a trader posts collateral to secure an OTC derivative obligation such as a forward, the trader legally still owns the collateral. With futures contracts, money transferred from a margin account to an exchange as a margin payment legally changes hands. A deposit in a margin account at a broker is collateral. It legally still belongs to the client, but the broker can take possession of it any time to satisfy obligations arising from the client's futures positions.

### **Variation Margin**

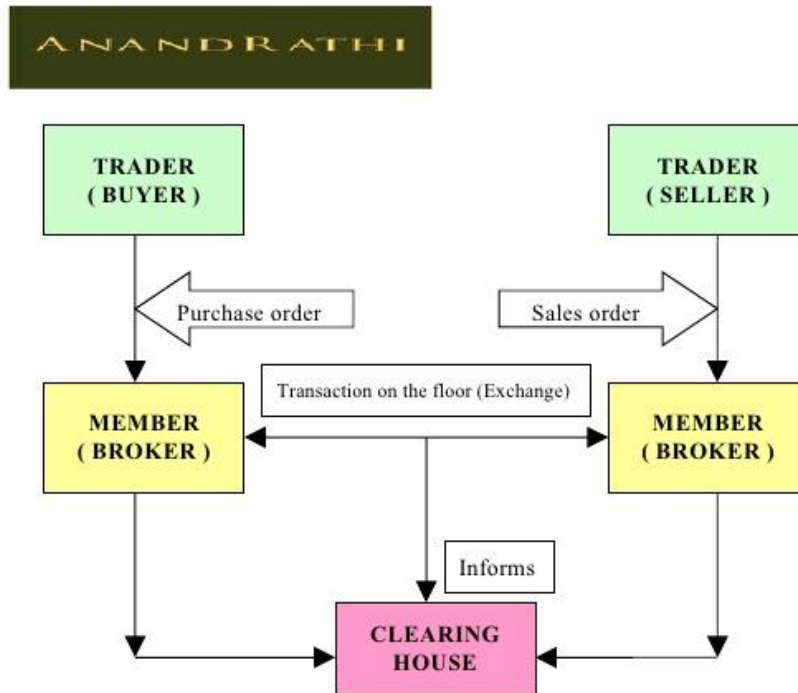
This is the amount of cash or collateral that brings the account up to the initial margin amount once it drops below the maintenance margin.

### **Settlement Price**

Settlement price is established by the appropriate exchange settlement committee at the close of each trading session. It is the official price that will be used by the clearing house to determine net gains or losses, margin requirements and the next day's price limits. Most often, the settlement price represents the average price of the last few trades that occur on the day. It is the official price set by the clearing house and it helps to process the day's gains and losses in marking to market the accounts. However, each exchange may have its own particular methodology. For example, on NYMEX (the New York Mercantile Exchange) and COMEX (The New York Commodity Exchange) settlement price calculations depend of the level of trading activity. In contract months with significant activity, the settlement price is

derived by calculating the weighted average of the prices at which trades were conducted during the closing range, a brief period at the end of the day. Contract months with little or no trading activity on a given day are settled based on the spread relationships to the closest active contract month, while on the Tokyo Financial Exchange settlement price is calculated as the theoretical value based on the expected volatility for each series set by the exchange.

### **Trading process and settlement process**



It has been observed that in most futures markets, actual physical delivery of the underlying assets is very rare and it hardly ranges from 1 percent to 5 percent. Most often buyers and sellers offset their original position prior to delivery date by taking an opposite positions. This is because most of futures contracts in different products are predominantly speculative instruments. For example, X purchases American Dollar futures and Y sells it. It leads to two contracts, first, X party and clearing house and second Y party and clearing house. Assume next day X sells same contract to Z, then X is out of the picture and the clearing house is seller to Z and buyer from Y, and hence, this process is goes on.

### **REGULATORY FRAMEWORK FOR CURRENCY FUTURES**

With a view to enable entities to manage volatility in the currency market, RBI on April 20, 2007 issued comprehensive guidelines on the usage of foreign currency forwards,



**ANANDRATHI**

swaps and options in the OTC market. At the same time, RBI also set up an Internal Working Group to explore the advantages of introducing currency futures. The Report of the Internal Working Group of RBI submitted in April 2008, recommended the introduction of exchange traded currency futures. With the expected benefits of exchange traded currency futures, it was decided in a joint meeting of RBI and SEBI on February 28, 2008, that an RBI-SEBI Standing Technical Committee on Exchange Traded Currency and Interest Rate Derivatives would be constituted. To begin with, the Committee would evolve norms and oversee the implementation of Exchange traded currency futures. The Terms of Reference to the Committee was as under:

1. To coordinate the regulatory roles of RBI and SEBI in regard to trading of Currency and Interest Rate Futures on the Exchanges.
2. To suggest the eligibility norms for existing and new Exchanges for Currency and Interest Rate Futures trading.
3. To suggest eligibility criteria for the members of such exchanges.
4. To review product design, margin requirements and other risk mitigation measures on an ongoing basis.
5. To suggest surveillance mechanism and dissemination of market information.
6. To consider microstructure issues, in the overall interest of financial stability.

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BATCH-2017-2019

S.No	Question	Option - I	Option - II	Option - III	Option - IV	Answer
1	Daily mark to market settlement is done	Till the date of contract expiry	As long as the contract makes a loss	On the last day of week	On the last trading day of the month	Till the date of contract expiry
2	.....is the actual process of exchanging money and goods.	Transfer	Settlement	Netting	Clearing	Settlement
3	.....work at making profits by taking advantage of discrepancy between prices of the same product across different markets.	Arbitraders	Speculators	Exchange	Hedgers	Arbitraders
4	Commodity exchanges enable producers and consumer to hedge their ..... given the uncertainty of the future.	seasonal risk	profit risk	production risk	price risk	price risk
5	Which of the following is not true about the national level exchanges?	Offers online trading	Recognized on permanent basis	Offers single commodity for trading	Volumes higher than regional exchanges	Offers single commodity for trading
6	Which of the following Exchange does not offer derivative trading in Soybean?	LME	NCDEX	CBOT	MCX	LME
7	.....Exchanges provide real time, online, transparent and vibrant spot platform for commodities.	Electronic Spot	Regional	Futures	Stock	Electronic Spot

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8	.....can only trade through their account or on account of their clients and however clear their trade through PCMs/STCMs.	Trading cum Clearing Member	Trading Member	Commodity Participant	Associate Member	Trading Member
9	The minimum networth requirement for PCM on the NCDEX is.....	50 Lacs	500 Lacs	5000 Lacs	5 lacs	5000 Lacs
10	Members can opt to meet the security deposit requirement by way of .....	Cash	Bank Guarantee	Fixed Deposit Receipts	All of the Given Answer	All of the Given Answer
11	In the case of certain commodities like gold and silver, delivery is staggered over last..... days of the contract.	Two	Three	Five	Thirteen	Five
12	The cash settlement is only for the incremental gain/ loss as determined on the basis of .....	Final settlement price	Average price for the day	Opening price.	Last traded price	Final settlement price
13	Unit of trading for Wheat at NCDEX is .....	1 MT	3 MT	1 kg	10 MT	10 MT
14	By using the currency forward market to sell dollars forward, an ..... can lock on to a rate today and reduce his uncertainty.	Importer	Speculator	Exporter	Arbitrager	Exporter
15	..... is the last day on which the futures contract will be traded, at the end of which it will cease to exist.	Redemption Date	Expiry Date	Exercise Date	Maturity Date	Expiry Date
16	A ..... option gives the holder the right but not the obligation to buy an asset by a certain date for a certain price."	Put	ITM	OTM	Call	Call

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17	An ..... option is an option that would lead to a zero cash flow to the holder if it were exercised immediately.	In the money	At the money	Out of the money	Put	At the money
18	A call option with a strike price of 150 trades in the market at premium of Rs.12. The spot price is Rs.160. The time value of the option is Rs. ....	12	10	2	8	2
19	A put option with a strike price of 150 trades in the market at Rs.8. The spot price is Rs.160. The intrinsic value of the option is Rs. ....	0	8	2	10	0
20	A trader buys three-month put options on 1 unit of gold with a strike of Rs.17000/10 gms at a premium of Rs.70. Unit of trading is 1kg. On the day of expiration, the spot price of gold is Rs.16800/10 gms. What is his net payoff?	(+) 13,000	(+) 20,000	(-) 13,000	(-) 20,000	(+) 13,000
21	One unit of trading for Guar Seed futures is 10 MT and delivery unit is 10 MT. A trader sells 1 unit of Guar Seed at Rs.2500/Quintal on the futures market. A week later Guar Seed futures trade at Rs.2550/Quintal. How much profit/loss has he made on his position?	(-)5000	(+)5000	(+)50,000	(-)50,000	(-)5000
22	The ..... position is considered for exposure and daily margin purposes.	Short	Long	Net	Open	Open
23	When the futures price of a commodity appears underpriced in relation to its spot price, an opportunity for ..... arbitrage arises.	reverse cash and carry	cash and carry	Reverse only	cash only	reverse cash and carry

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24	A ..... order, is an order which is valid for the day on which it is entered.	Good till offset	Good till day	Good till filled	Good till cancelled	Good till day
25	CHARJDEL is a symbol for the ..... futures contract traded on NCDEX:	Copper	Chilli	Chana	Crude Oil	Chana
26	A trader sells 5 units of gold futures at Rs.16500 per 10 grams. What is the value of his open short position? Unit of trading is 1 Kg and delivery unit is one Kg.	Rs.82,500	Rs.82,50,000	Rs.8,25,000	Rs.82,000	Rs.82,50,000
27	The total number of outstanding contracts (long/short) at any point in time is called .....	Hedge Limit	Transaction Charge	Delivery Lot	Open Interest	Open Interest
28	A trader has sold crude oil futures at Rs.3750 per barrel. He wishes to limit his loss to 20%. He does so by placing a stop order to buy an offsetting contract if the price goes to or above .....	Rs.4650	Rs.4500	Rs.3825	Rs.3925	Rs.4500
29	On introduction of new contracts, the base price is the ..... of the underlying commodity in the prevailing spot markets.	previous days' average price	previous days' closing price	price decided by pre-open auction	price decided by the exchange	previous days' closing price
30	A trader requires to take a long gold futures position worth Rs.85,00,000 as part of his hedging strategy. Two month futures trade at Rs.17000 per 10 gms. Unit of trading is 1Kg and delivery unit is one Kg. How many units must he purchase to give	5 units	14 units	50 units	10 units	5 units

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32	For Intention Matching and Seller's Right contracts traded at NCDEX, one of the components of the amount of penalty imposed on a seller in case of a delivery default would be ..... percent of final settlement price.	2	2.5	3	3.5	2.5
33	If the value of claim, difference or dispute is more than ..... on the date of application, then such claim, difference or dispute are to be referred to a panel of three arbitrators.	Rs.10 Lakh	Rs.50 Lakh	Rs.25 Lakh	Rs.75 Lakh	Rs.50 Lakh

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BATCH-2017-2019

34	On respective ..... day, clearing members effect depository delivery in the depository clearing system as per delivery statement in respect of depository deals.	Pay-in	Expiration	Settlement	Pay-out	Pay-in
35	..... refers to issue of physical delivery against the credit in the demat account of the constituent.	Securitisation	De-materialisation	Re-materialisation	Liquidation	Re-materialisation
36	Any person seeking to dematerialize a commodity has to open an account with an approved	Clearing house	Exchange	Depository Participant	Bank	Depository Participant
37	Where a trade cancellation is permitted and trading member wishes to cancel a trade, it can be done only with the approval of the .....	Clearing Corporation	SEBI	RBI	Exchange	Exchange
38	In the case of settlements culminating into delivery, sales tax at the rates applicable in the state where the ..... is located will be payable.	Buyer	Delivery Center	Seller	Exchange	Delivery Center
39	After the sales tax/VAT obligations are determined, the seller client has to raise the .....	Award	Schedule	Commodity	Invoice	Invoice
40	The participants need to access the NSPOT trading system either as client through a member or as ..... of NSPOT.	Dealer	Agent	Member	Contractor	Member



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UNIT: V(Commodity Trading)

BATCH-2017-2019

41	Electronic spot exchange benefits the farmers by way of providing .....	counterparty guarantee	direct access to a national level transparent market	better holding capacity of the produce	All of the above	All of the above
42	In case the participant would need to , then he will have to deposit the goods in NSPOT pre-notified accredited warehouse before putting an order for the corresponding quantity in the NSPOT trading system	buy	sell	buy and sell	all of the above	sell
43	..... is an exciting and sophisticated type of investment.	Investment	Commodity Purchase	Commodity trading	Commodity Selling	Commodity trading
44	Derivative is the..... whose value is derived from the underlying asset or the contract where delivery of security or commodity held on specific future date	buy	contract	sell	buy and sell	contract
45	An "e-mini" is an electronically traded futures contract that represents a portion of a standard .....	futures contract.	forward trades	Options	Swaps	futures contract.
46	..... are uniquely structured investment funds that track broad-based or sector indexes, commodities and baskets of assets.	Single Underlying assets	Exchange traded funds	Multi - Lateral Understanding	Uni Lateral Understanding	Exchange traded funds
47	Forex is the foreign exchange market where ..... are traded.	commodity	Gold	Silver	currencies	currencies
48	A ..... is an investment to reduce the risk of adverse price	Gambling	hedge	Games	Speculation	hedge

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	movements in an asset.					
49	a hedge consists of taking an offsetting position in a related security, such as a .....	futures contract.	forward trades	Options	Swaps	futures contract.
50	Hedging is analogous to taking out an .....	Bank Policy	Investment	insurance policy	Return	insurance policy
51	A perfect ..... is one that eliminates all risk in a position or portfolio.	Gambling	hedge	Games	Speculation	hedge
52	..... are prevalent in the markets where price movements of securities are highly frequent and volatile.	Gambling	hedge	Games	Speculators	Speculators
53	..... is the simultaneous purchase and sale of an asset to profit from an imbalance in the price.	hedge	Arbitrage	Gambling	Speculation	Arbitrage
54	..... arbitrage generally consists of buying/holding the stock of a company that is the target of a takeover while shorting the stock of the acquiring company.	Join	Takeover	merger	Amalgamation	merger
55	..... arbitrage companies allow phone users to make international calls for free through certain access numbers.	Telecom	Takeover	merger	Amalgamation	Telecom

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56	Holding other factors constant, which one of the following bonds has the smallest price volatility?	A. 5-year, 0% coupon bond	B. 5-year, 12% coupon bond	C. 5 year, 14% coupon bond	D. 5-year, 10% coupon bond	C. 5 year, 14% coupon bond
57	A seven-year par value bond has a coupon rate of 9% and a modified duration of	7 years.	5.49 years.	5.03 years.	4.87 years.	5.03 years.
58	When interest rates decline, the duration of a 10-year bond selling at a premium	increases.	decreases.	remains the same.	increases at first, then declines.	increases.
59	The duration of a bond normally increases with an increase in	term to maturity.	yield to maturity.	coupon rate.	All of these are correct.	term to maturity.
60	In an options contract, the option lies with the	Buyer	Exchange	Both	Seller	Buyer