Capital Markets

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CAPITAL MARKET PARTICIPANTS

1

STUDY GUIDE 1: CAPITAL MARKET PARTICIPANTS

Get Through Intro

Capital markets deal with numerous financial instruments like shares, bonds, mortgages, commodities, derivatives etc. Many types of participants take part in transacting these financial instruments. It is this participation in the buying and selling process that creates a market mechanism and provides capital to the market. Capital market should provide information to the various participants so that they make investment decision analyzing the current market situation. Efficient functioning of the market is dependent on flow of information and monetary support from participants. Thus market participants play a key role in building a strong and stable capital market. A stable capital market helps the whole economy and financial infrastructure of a country.

Learning Outcomes

a) Understand the role played by securities exchanges
b) Understand the basics of debt and equity
c) Know about investors and borrowers
d) Discuss the role of various intermediaries
e) Understand the role played by the regulator

Case Study

John likes to invest in the stock market. He logs onto his broker's website and submits an order for buying shares. After reading a research report from his broker and his conviction, he decided to buy a specific stock. At the end of the day, he got a confirmation from his broker that his buy order was completed. After two days, the stocks are delivered to John's account. Behind the scenes, numerous players were involved to ensure that John's order is executed smoothly. In this chapter we will learn about the various players involved in a transaction and the role played by them.

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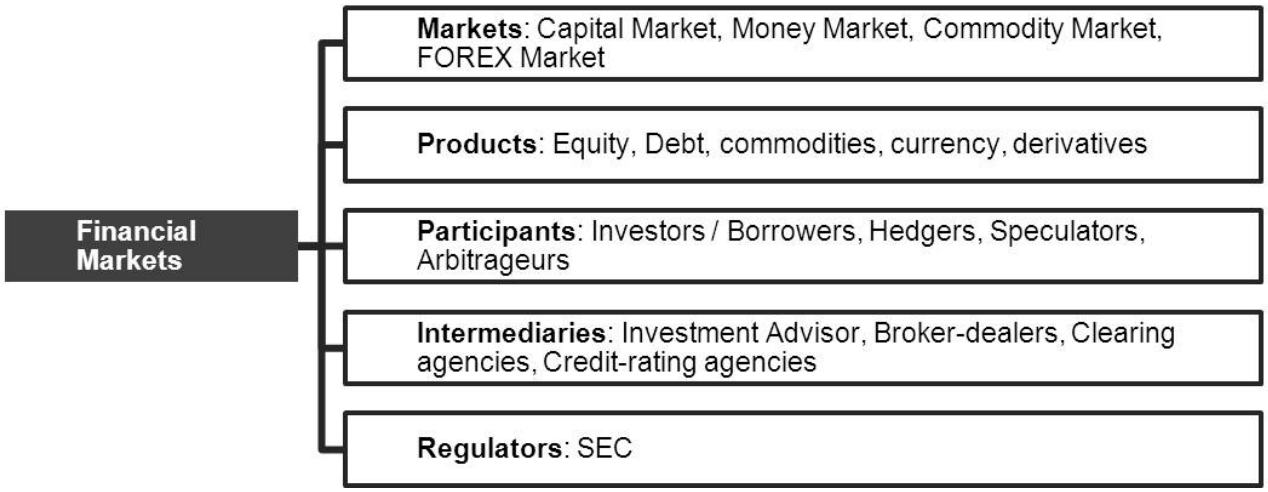
1. Understand the role played by securities exchanges. [Learning Outcome a]

1. Components of financial markets

Components of financial markets include:

- Markets
- Products
- Participants
- Intermediaries
- Regulator

Diagram 1: Financial Markets



2. Securities Exchanges

Securities exchanges are markets where securities are bought and sold. Securities Exchanges are Self-Regulatory Organisations (SROs).

A "national securities exchange" is a securities exchange that has registered with the SEC under Section 6 of the Securities Exchange Act of 1934.

Depending on the securities that are bought and sold, securities exchanges include:

- Stock exchange where equity shares can be bought and sold
- Commodity exchange where various commodities can be bought and sold
- Money market where short term (up to one year) debt securities can be bought and sold
- Forex market where various currencies can be bought and sold

3. Financial intermediation

Securities exchanges perform the important function of financial intermediation. They do this in two ways:

a) Primary market

When a company wants to raise funds from investors, it approaches the securities exchange through an Initial Public Offering (IPO). During the IPO stage, the securities exchange plays the important role of bringing together:

- **Borrower:** This is the company that is coming out with the IPO and
- **Lenders:** These are investors who are interested in investing in the IPO

b) Secondary market

Once the IPO is completed, the securities get listed on the securities exchange and start regular trading. At this stage, the securities exchange plays the important role of bringing together:

- **Buyers:** These are individuals / entities who are interested in buying shares of various companies listed on the securities exchange

- **Sellers:** These are individuals / entities who are interested in selling shares that they are already holding in their portfolio.

4. List of securities exchanges in the US

There are currently sixteen securities exchanges registered as national securities exchanges with the SEC under Section 6(a) of the Securities Exchange Act. These include:

- NYSE MKT LLC (formerly NYSE AMEX and the American Stock Exchange)

- BATS Exchange, Inc.

- BATS Y-Exchange, Inc.

- BOX Options Exchange LLC

- NASDAQ OMX BX, Inc. (formerly the Boston Stock Exchange)

- C2 Options Exchange, Incorporated

- Chicago Board Options Exchange, Incorporated

- Chicago Stock Exchange, Inc.

- EDGA Exchange, Inc.

- EDGX Exchange, Inc.

- International Securities Exchange, LLC

- The NASDAQ Stock Market LLC

- National Stock Exchange, Inc.

- New York Stock Exchange LLC

- NYSE Arca, Inc.

- NASDAQ OMX PHLX, Inc. (formerly Philadelphia Stock Exchange)

Certain exchanges are also registered with the SEC through a notice filing under Section 6(g) of the Securities Exchange Act for the purpose of trading security futures. Some of these include

- Board of Trade of the City of Chicago, Inc.
- CBOE Futures Exchange, LLC
- Chicago Mercantile Exchange
- One Chicago, LLC
- The Island Futures Exchange, LLC
- NQLX LLC

Test Yourself 1

In the primary market, money is raised through _____

A Initial Public Offering to general public
B Private equity route
C Borrowing from employees
D Pledging shares to banks

Test Yourself 2

Which of the following is an exchange registered with SEC for trading of security futures under Section 6(g)?

A The NASDAQ Stock Market LLC
B National Stock Exchange, Inc.
C New York Stock Exchange LLC
D Chicago Mercantile Exchange

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2. Understand the basics of debt and equity.

[Learning Outcome b]

1. Preferred investment avenues: Debt and equity

Now that we understand the role played by securities exchanges, let us now understand the avenues preferred by:

- **Investors** to invest their surplus funds and
- **Borrowers** to borrow funds from

While there are a number of avenues preferred by investors (to invest their funds) and borrowers (to borrow funds from), the two most preferred avenues are debt (fixed income) and equity.

a) Debt

i. Debt represents an obligation or liability that needs to be repaid. When an entity borrows using the debt route, the entity becomes a debtor and needs to repay the borrowed amount within a specific timeframe. The investor gets back the lent money on maturity. The investor doesn't get any stake in the entity to whom the money has been lent.

ii. Borrowing using the debt route is a preferred route for individuals, companies and the Government.

iii. Investment in debt securities is for those with low risk appetite, who are happy with low to moderate returns.

iv. At the time of borrowing, the borrowing entity specifies

- the amount to be borrowed,
- duration for which it is borrowing and
- the interest rate it will pay on the borrowed amount

The borrowing entity needs to return the borrowed principal on maturity. In the interim period interest is paid either quarterly, semi-annually or annually, which is specified at the time of borrowing.

b) Equity

i. Equity represents fractional ownership. When a company borrows from investors by offering equity shares in return, the company is offering a stake in the entity to investors. The investor will get a stake in the company, which will be proportional to the number of shares owned.

ii. Shareholders have the right to vote on important decisions of the company like appointment of key persons (CEO, Board of Directors etc.) and their compensation, mergers and acquisitions etc.

iii. Borrowing using the equity route is a preferred route for companies.

iv. Equity investment is for those with high risk appetite, but also has the potential to give high returns.

v. A company doesn't need to return the funds borrowed through equity, to the investors, within a specific timeframe.

vi. An investor earns income from investment in equity shares in two ways:

- **Dividends:** The investor will have a share in the profits of the company, which is distributed by the company in the form of dividends. Dividends are paid out of reserves of the company.

- **Capital gain:** As the company grows and its revenues, profits grow; the value of the shares will appreciate. The profit made by an investor from the sale of shares is known as capital gain.

Now that we know about the two most preferred avenues for borrowing, before learning about various market participants, we need to know about public companies. They are the major borrowers in the equity market and the debt market and hence it is important to learn about public companies before learning about market participants.

2. Public Companies

Public companies play a major role in the savings, investment, and retirement plans of many Americans and hence they are a key part of the American economy. An investor can invest in shares of public companies in the following ways:

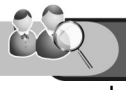
- Buying shares of public companies directly
- Through a mutual fund or
- Through a pension plan

a) What is a Public Company?

There are two commonly understood ways in which a company is considered public:

- **first**, the company's securities are listed on the securities exchange and traded regularly among investors; and

- **second**, the company discloses certain business and financial information on a regular basis to the public



Example

Some of the examples of biggest public companies in the United States include:

- Exxon Mobil, Chevron Texaco engaged in exploration, refining and marketing of oil and gas products
- Wal-Mart, JC Penny, Sears engaged in retailing
- Apple engaged in manufacturing of electronics like iPod, iPhones, iPads etc.
- Boeing engaged in making aircrafts
- Facebook and Twitter which are one of the largest social networking sites in the world
- Citigroup, Goldman Sachs, American Express, Bank of America, JP Morgan engaged in banking business
- Coca-Cola and PepsiCo engaged in making beverages etc.

In general, the term 'public company' is used to refer to a company that has public reporting obligations. Companies are subject to public reporting requirements if they:

- Sell securities in a public offering (such as an initial public offering, or IPO);
- Allow their investor base to reach a certain size, which triggers public reporting obligations; or
- Voluntarily register with the Securities Exchange Commission (SEC)

Some of the reasons why companies raise funds from the public through issue of shares include:

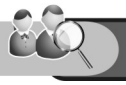
- Paying off debt
- Launching new products or services
- Expanding into new markets or regions
- Enlarging facilities or building new ones
- Funding acquisition/s
- Regulatory requirement/s etc.

3. Types of stock

Companies raise funds by issuing mainly two types of stock: common stock and preferred stock

i. Common stock

These are also known as ordinary shares. These are the most basic form of shares issued by any company. Common stockholders own a stake in the company which is proportional to the number of shares they hold. They are entitled to dividends declared by the company and also have voting rights on important company decisions at annual shareholder meetings.



Example

In May 2012, Facebook came out with an IPO of 421 million common shares for $38 a share. The company raised $16 billion and its shares trade on the NASDAQ.

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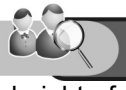
ii. Preferred stock

These shareholders get preference for dividend payments over common stockholders. If the company files for bankruptcy and its assets go into liquidation, then preferred stockholders get preference over common stockholders for payment but after payment to other creditors. Common stockholders enjoy voting rights at various company meetings which usually preferred stockholders don't have. The rate of dividend is fixed beforehand, but payment every year is not guaranteed. If dividend payment is skipped in a year, that year's dividend is carried forward to the next year.



Example

During the height of the sub-prime crisis in September 2008, Goldman Sachs offered preferred stock worth $5 billion to Warren Buffet's Berkshire Hathaway. These shares were entitled to an annual dividend of 10% or a total of $500 million in dividends. Goldman Sachs bought back these shares from Berkshire Hathaway in March 2011 at a premium of 10%.

Test Yourself 3

What is the risk appetite for investors who invest in debt securities?

A High
B Low
C Medium
D Negligible

Test Yourself 4

Which of the following have the right to vote in company decisions?

A Debt Holder
B Preferred Equity Holders
C Equity Holders
D All of the above

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3. Know about investors and borrowers.

[Learning Outcome c]

Concept of investors and borrowers

In most financial markets there are two sets of people / entities: **investors and borrowers**

1. Investors

Investors are individuals / entities who have more money than the need for their basic needs and day-to-day requirements. They have surplus funds that they can invest to earn returns on these investments. Investors can include:

- Individuals
- Companies
- Government

Investors are in a better position as they have surplus funds. Investors that transact in securities can be classified into buyers and sellers.

a) Buyers

As the name suggests, these investors buy securities to benefit from regular income when the hold the securities and make capital gain when the sell the securities. Depending on the time horizon for holding securities buyers can be classified into groups.

- **Traders:** Buyers that buy securities and sell them on the same day or over the next few days are termed as traders.

- **Short term investors:** Buyers who buy securities and hold them for the next few months or a couple of years are termed as short term investors.

- **Long term investors:** Buyers who buy securities and hold them for say more than five years are known as long term investors.

b) Sellers

As the name suggests, these investors sell securities that they have bought in the past. Depending on the price at which the securities were bought and the price at which they were sold, it may result in a capital gain or a capital loss.

- **Capital gain:** When securities are bought at a lower price and sold at a higher price, the profit made is known as capital gain.

- **Capital loss:** When securities are bought at a higher price and sold at a lower price, the loss made is known as capital loss.

2. Borrowers

Borrowers are individuals / entities who have less money than they need for their basic needs and day-to-day requirements. They have a shortfall and hence they borrow to meet the shortfall. Borrowers can include:

- **Individuals:** They mostly borrow to meet their consumption requirements and to purchase long term assets like home etc.

- **Companies:** They mostly borrow to meet their working capital requirements, expansion, purchasing new equipment, financing acquisitions etc.

- **Government:** The Government mostly borrows to fund its planned and non-planned expenses. The Government mainly relies on its tax revenues to fund its various expenditures. When the overall revenue falls short of expectation, there is a deficit, which is then funded by borrowings.

Test Yourself 5

Entities or Individual having surplus cash to invest are called _____

A Borrowers
B Hedgers
C Investors
D Market maker

Test Yourself 6

How does the government fund deficit when revenue falls short of expectations?

A Through cost cutting
B Market borrowings
C Additional revenue source
D Postponing expenditure

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4. Discuss the role of various intermediaries.

[Learning Outcome d]

Intermediaries

In debt / equity markets, there are various entities that function as intermediaries between investors and borrowers. These intermediaries are also known as market participants. Some of the market participants include:

a) Investment advisers
b) Broker-dealers
c) Market centers
d) Clearing agencies
e) Credit rating agencies
f) Self-regulatory Organisations (SROs)
g) Transfer agents

Let us understand the features and roles of each of these market participants.

1. Investment Advisers

Investment advisers are engaged in the business of providing securities related advice to investors in exchange for a fee.

An investment adviser may be an individual person or a firm. Investment advisers are in the business of providing investment advice to investors on which securities to invest in. The clients of investment advisers may include individuals as well as corporates. Investment advisers also issue research reports or analysis regarding securities. They do these activities for compensation.

Investors execute the investment advice given by investment advisors for buying / selling securities through brokers.

Example

Some of the well-known investment adviser firms in the United States include:

- Pacific Investment Management Company LLC (PIMCO)
- The Vanguard Group Inc.
- Capital Research and Management Company
- JP Morgan Investment Management Inc.
- Wellington Management Company LLC
- Blackrock Fund Advisors

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2. Broker-Dealers

Investors themselves cannot directly buy or sell securities on the securities exchange. They have to go through a broker. Brokers play the important role of routing orders placed by investors to the securities exchange or to other market makers.

Most "brokers" and "dealers" must register with the SEC and join a "self-regulatory organization," or SRO.

a) Broker

The SEC Act defines a "broker" broadly as “any person engaged in the business of effecting transactions in securities for the account of others”.

b) Dealer

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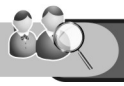
The SEC Act defines a "dealer" as “any person engaged in the business of buying and selling securities for his own account, through a broker or otherwise”. Unlike a broker, who acts as agent, a dealer acts as a principal.
Broker-dealers charge a fee to handle trades between the buyers and sellers of securities. This is known as brokerage. A broker-dealer may

- buy securities from their customer who is selling or
- sell from their own inventory to its customer who is buying



Example

Some of the well-known stock brokers in the United States include:

- Charles Schwab
- EverTrade
- E*Trade
- Interactive brokers
- TradeStation
- TD Ameritrade
- OptionsHouse

Financial responsibility of broker-dealers

Broker-dealers must meet certain financial responsibility requirements, including:

- maintaining minimum amounts of liquid assets, or net capital;
- taking certain steps to safeguard the customer funds and securities; and
- making and preserving accurate books and records

Types of Brokerage Accounts offered by brokerage firms

i. A **cash account** is a type of brokerage account in which the investor must pay the full amount for securities purchased. In a cash account, the investor is not allowed to borrow funds from his / her broker to pay for transactions in the account. In short it is the investor purchasing securities with his / her own money rather than with money borrowed from the broker.

ii. A **margin account** is a type of brokerage account in which the brokerage firm can lend money to the investor to buy securities. The investor needs to offer collateral for the money borrowed from the broker. The securities bought by the investor in the brokerage account can be offered as collateral to the broker for the borrowed funds. The investor needs to pay interest on the money borrowed from the broker in the margin account.

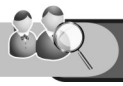
There are risks associated with buying securities on margin. For example, if an investor buys securities on margin and the price of the securities goes down, then the brokerage firm can ask the borrower to bring in additional cash or securities to the margin account immediately. If the borrower doesn't do that, then the brokerage firm may sell some securities from the borrower's account to cover any shortfall, without informing the borrower in advance. The brokerage firm can decide which securities it may want to sell. Even if the brokerage firm notifies the borrower on the number of days he / she has to cover the shortfall, it still may sell the borrower's securities before that time period, if it wishes so. A brokerage firm may at any time change the threshold at which customers are subject to a margin call.

Types of Orders

The most common types of orders are market orders, limit orders, and stop-loss orders.

a) Market order

A market order is an order to buy or sell a security that gets executed immediately once it is entered into the system. Even though it is guaranteed that the order will get executed, the price at which it will get executed is not guaranteed.



Example

Aaron is an investor who wishes to buy shares of ABC Corp at market prices. He will ask the broker to enter a market order. Once the order is entered into the system, the system will search for a seller who is willing to sell shares of ABC Corp at the last traded price (market price) or a price nearest to the last traded price and execute the order into a trade.

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b) Limit order

If an investor wishes to buy or sell a security at a specific price or better then he / she can ask the broker to enter a limit order.

- A buy limit order can only be executed at the limit price or lower, and
- a sell limit order can only be executed at the limit price or higher

Example

- **Buy limit order:** An investor wants to purchase shares of ABC stock for no more than $10. The investor could submit a limit order for this amount and this order will only execute if the price of ABC stock is $10 or lower.
- **Sell limit order:** An investor wants to sell shares of ABC stock for no less than $10. The investor could submit a limit order for this amount and this order will only execute if the price of ABC stock is $10 or higher.

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c) Stop order

It is also referred to as a stop-loss order. It is an order to buy or sell a stock once the price of the stock reaches the specified price, known as the stop price. When the stop price is reached, a stop order becomes a market order.

Executing an Order

Once the investor places an order to buy or sell securities with the broker, it is up to the broker to decide where and how to execute the order. Depending on where and how the broker chooses to execute the order can impact the overall cost of the transaction, including the price the investor pays for the stock.

The broker has a Duty of "Best Execution"

Many broking firms use automated systems to handle the orders they receive from their customers. In deciding how to execute orders, the broker has a duty to seek the best execution that is reasonably available for its customers' orders. That means the broker must evaluate the orders it receives from all customers in the aggregate and periodically assess which competing markets offer the most favourable terms of execution.

The opportunity for "price improvement" is an important factor a broker should consider in executing its customers' orders. "Price improvement" is the opportunity, but not the guarantee, for an order to be executed at a better price than the current quote.

Of course, the additional time it takes some markets to execute orders may result in the investor getting a worse price than the current quote - especially in a fast-moving market. So, the broker is required to consider whether there is a trade-off between providing its customers' orders with the possibility, but not the guarantee, of better prices and the extra time it may take to do so.

Investors have options for directing trades

If for any reason, an investor wants to direct his / her trade to a particular exchange, the investor may be able to call the broker and ask the broker to do the same. But some brokers may charge for that service. Some brokers offer active traders the ability to direct orders to the market of their choice.

3. Market Centers

Buying and Selling Stock

When an investor calls his / her broker to buy or sell a stock - or places an order online through his / her broker's website – it is only the start of the transaction. A transaction goes through various stages which is known as the trade life cycle. Once the order is placed by the investor, as a next stage, the broker's firm then sends the order to a market center to be executed. This process of filling an investor's order is known as "trade execution."

The broker generally has a choice of following markets to execute the trade:

a) Securities Exchange

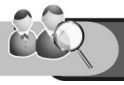
A securities exchange is a marketplace where traders can buy or sell stocks, bonds and other securities. For a stock that's listed on an exchange, the broker may direct the order to that exchange, to another exchange, or to a firm called a "market maker."

b) Market Maker

A "market maker" is a firm that stands ready to buy or sell a stock at publicly quoted prices. As a way to attract orders from brokers, some market makers will pay the broker for routing orders to them. This is called "payment for order flow." For a stock that trades in an over-the-counter (OTC) market, the broker may send the order to an "OTC market maker". Many OTC market makers also pay brokers for order flow.

Market makers are often heard of in the context of the NASDAQ or other "over the counter" (OTC) markets. Market makers that stand ready to buy and sell stocks listed on an exchange, such as the New York Stock Exchange, are called "third market makers". Many OTC stocks have more than one market-maker.

Market-makers generally must be ready to buy and sell at least 100 shares of a stock they make a market in. As a result, a large order from an investor may have to be filled by a number of market-makers at potentially different prices.



Example

Some of the examples of market makers in the US include

- Eagle Market Makers, Inc.
- Brendan E. Cryan & Co.
- J Streicher & Co. LLC
- Virtu Financial Capital Markets LLC

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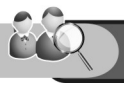
c) Electronic Communications Network (ECN)

The broker may route an order to an electronic communications network (ECN). An ECN is an electronic trading system that automatically matches buy and sell orders at specified prices for users of the system. ECNs register with the SEC as broker-dealers and are subject to Regulation

Subscribers, which are typically institutional investors, broker-dealers, and market-makers — can place trades directly with an ECN. Individual investors must currently have an account with a broker-dealer subscriber before their orders can be routed to an ECN for execution. When seeking to buy or sell securities, ECN subscribers typically use limit orders. ECNs post orders on their systems for other subscribers to view. The ECN will then automatically match orders for execution. An ECN may choose to facilitate compliance by a market-maker with its obligations under the Commission's Quote Rule by transmitting the ECN's best bid/offer to a national securities exchange or registered securities association for public display.



Example

Examples of some ECNs include

- LavaFlow ECN
- Maps ECN
- Sterling ECN

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d) Internalization

A broker may route an investor’s order to another division of the broker's firm to be filled out of the firm's own inventory. This is called "internalization." In this way, the broker's firm may make money on the "spread" - which is the difference between the price the firm paid for the security and the price at which the firm sells it to the investor.

4. Clearing Agencies

Clearing Agencies are Self-Regulatory Organizations (SROs) that are required to register with the SEC. Like all SROs, they are responsible for writing and enforcing their rules and disciplining members. There are two types of clearing agencies: Clearing corporations and depositories.

a) Clearing corporations compare member transactions (or report to members the results of exchange comparison operations), clear those trades and prepare instructions for automated settlement of those trades. Clearing corporations often act as intermediaries in making securities settlements. Examples of clearing corporations in the US include:

- National Securities Clearing Corporation (NSCC),
- Fixed Income Clearing Corporation (FICC) and
- Options Clearing Corporation

b) Depositories hold securities certificates in bulk form for their participants and maintain ownership records of the securities on their own books. Example of depository in the US includes Depository Trust Company (DTC).

Physical securities are maintained in vaults, and ownership records are maintained on the books of the depository. Clearing corporations generally instruct depositories to make delivery of securities that result from settlement of securities transactions. In addition, depositories receive instructions from participants to move securities from one participant's account to another participant's account, either for free or in exchange for a payment of money.

Clearance may be accomplished:

- on a **trade-by-trade** basis or
- through **netting**

Netting is the process of offsetting expected deliveries and payments against expected receipts of several trades. This settlement of trades may be done either bilaterally between the two counterparties or multilaterally among all members of a clearing corporation. This is done to yield balance orders reflecting a single day's trades or all open positions to date (continuous net settlement or "CNS").

Continuous net settlement is an accounting system that summarizes and nets each participant's daily transactions in each issue, including open positions from previous days. This is done to create a single long position or a single short position for the participant.

The majority of equity trades in the United States are cleared and settled in CNS systems. CNS systems net the securities delivery obligations and the payment obligations of all clearing corporation participants.

Clearing corporations notify participants of their securities delivery and payment obligations each day. In addition, the clearing corporation guarantees the completion of all transactions and interposes itself as the contraparty to both sides of any transaction.

As with trading systems, the different clearing and settlement systems can be

- manual,
- semi-automated, or
- fully automated

Different types tend to predominate for certain securities.

5. Credit Rating Agencies

Credit Rating Agencies provide opinions on the credit worthiness of a company or security. They indicate the credit quality by means of a grade. The rating indicates the borrower’s ability to repay the debt and the chances of default. Generally, credit ratings distinguish between investment grade and non-investment grade. For example, a credit rating agency may assign a "triple A" or AAA credit rating as its top "investment grade" rating, and a "double B" or BB credit rating or below for "non-investment grade" or "high-yield" corporate bonds. Credit rating agencies registered as such with the SEC are known as “Nationally Recognized Statistical Rating Organizations.”

Ratings are given to debt instruments like:

- Bonds issued by the Government
- Bonds issued by corporates
- Mortgage backed securities (MBS)
- Bonds issued by Municipalities

Example

Some of the well-known credit rating agencies in the US include:

- Standard & Poor’s (S&P)
- Moody’s Investor Services
- Fitch Ratings

The ratings issued by credit rating agencies include:

Rating description	Moody's	S&P	Fitch
Prime	Aaa	AAA	AAA
High	Aa	AA	AA
Upper medium	A	A	A
Lower medium	Baa	BBB	BBB
Non-investment	Ba	BB	BB

6. Self-Regulatory Organizations (SROs)

An SRO manages its industry through the adoption of rules governing the conduct of its members. SROs also enforce the rules they adopt and discipline members for violating SRO rules. Two well-known SROs are

- Financial Industry Regulatory Authority (FINRA) and
- Municipal Securities Rulemaking Board (MSRB)

FINRA is the largest SRO in the securities industry. It is the frontline regulator of broker-dealers. MSRB makes rules regulating dealers of municipal securities.
The SEC oversees both FINRA and the MSRB. Other SROs include clearing agencies and securities exchanges.

7. Transfer Agents

Activities carried out by transfer agents include:

- recording changes of security ownership,
- maintaining the issuer's security holder records,
- cancelling and issuing certificates, and
- distribution of dividends

Because transfer agents stand between issuing companies and security holders, efficient transfer agent operations are critical to the successful completion of secondary trades. Transfer agents are required to be registered with the SEC, or if the transfer agent is a bank, with a bank regulatory agency.

There is no SRO that governs transfer agents. The SEC has announced rules and regulations for all registered transfer agents. The intent is to facilitate the prompt and accurate clearance and settlement of securities transactions and assure the safeguarding of securities and funds.

The rules include minimum performance standards regarding the issuance of new certificates and related recordkeeping and reporting rules, and the prompt and accurate creation of security holder records and the safeguarding of securities and funds. The SEC also conducts inspections of transfer agents.

Test Yourself 7

Broker-Dealers are required to register themselves with _____

A SEC
B FOMC
C SRO
D Treasury

Test Yourself 8

Opinion of the credit rating agency indicates which of the following?

A Credit worthiness of a company
B Borrower's ability to repay the debt
C Chances of default by the company
D All of the above

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5. Understand the role played by the regulator. [Learning Outcome e]

Regulator: Securities Exchange Commission (SEC)

1. Mission

The US Securities and Exchange Commission (SEC) has a three-part mission:

- Protect investors
- Maintain fair, orderly, and efficient markets
- Facilitate capital formation

2. Formation of the SEC

When the stock market crashed in October 1929, so did public confidence in the US markets. Congress held hearings to identify the problems and search for solutions. Based on its findings, Congress – in the peak year of the Depression – passed the Securities Act of 1933. The following year, it passed the Securities Exchange Act of 1934, which created the SEC.

The main purposes of these laws can be reduced to two common-sense notions:

- Companies offering securities for sale to the public must tell the truth about their business, the securities they are selling, and the risks involved in investing in those securities.

- Those who sell and trade securities – brokers, dealers, and exchanges – must treat investors fairly and honestly.

3. How the SEC goes about its mission

The mission of the U.S. Securities and Exchange Commission is to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation.

As more and more first-time investors turn to the markets to help secure their futures, pay for homes, and send children to college, SEC's investor protection mission is more compelling than ever.

As the US securities exchanges mature into global for-profit competitors, there is even greater need for sound market regulation.

a) Disclosure of information by public companies

The laws and rules that govern the securities industry in the United States derive from a simple and straightforward concept: all investors, whether large institutions or private individuals, should have access to certain basic facts about an investment prior to buying it, and so long as they hold it. To achieve this, the SEC requires public companies to disclose meaningful financial and other information to the public. This provides a common pool of knowledge for all investors to use to judge for themselves whether to buy, sell, or hold a particular security. Only through the steady flow of timely, comprehensive, and accurate information can people make sound investment decisions.

b) Regulation of key participants

The SEC oversees the key participants in the securities world, including securities exchanges, securities brokers and dealers, investment advisors, and mutual funds. Here the SEC is concerned primarily with promoting the disclosure of important market-related information, maintaining fair dealing, and protecting against fraud.

c) Enforcement authority

Crucial to the SEC's effectiveness in each of these areas is its enforcement authority. Each year the SEC brings hundreds of civil enforcement actions against individuals and companies for violation of the securities laws. Typical infractions include insider trading, accounting fraud, and providing false or misleading information about securities and the companies that issue them.

d) Investor education

One of the major sources of information on which the SEC relies to bring enforcement action is investors themselves — another reason that educated and careful investors are so critical to the functioning of efficient markets. To help support investor education, the SEC offers the public a wealth of educational information on the website **http://www.sec.gov/index.htm**, which also includes the EDGAR database of disclosure documents that public companies are required to file with the Commission.

Though the SEC is the primary overseer and regulator of the U.S. securities markets, it also works closely with many other institutions. Some of these include

- Congress,
- Other federal departments and agencies,
- Self-regulatory organizations (e.g. the stock exchanges),
- State securities regulators, and
- Various private sector organizations

In particular, the Chairman of the SEC, together with the Chairman of the Federal Reserve, the Secretary of the Treasury, and the Chairman of the Commodity Futures Trading Commission, serves as a member of the President's Working Group on Financial Markets.

Test Yourself 9

_____ is the regulator of the securities market in the US.

A FCRA
B Treasury
C SEC
D FOMC

Summary

- Securities exchanges are markets where securities are bought and sold. Securities Exchanges are Self-Regulatory Organizations (SROs).
- There are two types of market: Primary (IPO – company and investors) & secondary (between investors)
- Investors invest their surplus funds while borrowers borrow funds.
- Investors can be long term or short term investors, depending on their investment horizon.
- Borrowers include individuals, companies & government.
- Preferred investment avenues are debt and equity
- Debt represents an obligation or liability that needs to be repaid by borrower. Investors with low risk appetite prefer debt.
- Equity represents fractional ownership. Equity holders have say in decision making of the company. Investment in equity is high risk high return one.
- Public company has public reporting obligations.
- Stocks are of two types namely: Common and preferred
- Investment advisers provide advice in exchange for a fee.
- Broker dealers charge commission for facilitating trade.
- Broker order include market, limit or stop orders
- Clearing agencies aid in settlement of trades. Clearing corporation compares trades and prepares instructions for settlement. Depository keeps the records of security ownership.
- Credit rating agencies provide opinions on the credit worthiness of a company or security.
- SEC is the regulator of the securities market.

Answers to Test Yourself

Answer to TY 1

The correct option is **A**.

Initial Public Offering is used to raise money for the first time from general public. This is known as Primary market.

Answer to TY 2

The correct option is **D**.

Chicago Mercantile Exchange is registered with SEC as an exchange for trading of security futures.

Answer to TY 3

The correct option is **B**.

Their risk appetite is low; hence their return expectations are also low to medium.

Answer to TY 4

The correct option is **C**.

Equity holders have the right to vote in company decisions.

Answer to TY 5

The correct option is **C**.

Investors have surplus cash which they want to lend to other entities and earn interest / dividend on the money.

Answer to TY 6

The correct option is **B**.

The government will borrow from the market by issuing government securities

Answer to TY 7

The correct option is **A**.

Broker dealers are registered with the SEC and are self regulated through SRO.

Answer to TY 8

The correct option is **D**.

The rating of the rating agency is reflection of all the parameters mentioned in the options.

Answer to TY 9

The correct option is **C**.

SEC is the regulator of securities market.

Self Examination Questions

Question 1

The entity that hold securities certificates in bulk form for their participants and maintain ownership records of the securities on their own books are called _____.

A Clearing Corporation
B Security Holder
C SRO
D Depository

Question 2

The agency responsible for comparing member transactions, clearing trades and preparing instructions for automated settlement of those trades is called _____.

A Depository
B Stock Exchange
C Regulator
D Clearing Corporation

Question 3

Under the S&P debt rating scheme, the lowest rating for an investment grade bond is _____.

A BAA
B BBB
C AAA
D ABA

Question 4

Which of the following do not earn dividends?

A Debt Holder
B Preferred Equity Holders
C Equity Holders
D All of the above

Question 5

At the time of borrowing, the borrower specifies which of the following?

A Amount to be borrowed
B Duration for which it is borrowing and
C Interest rate it will pay on the borrowed amount
D All of the above

Question 6

In case of _____ instruments, the invested money is returned back to the investor.

A Equity
B Debt
C Preferred Equity
D All of the above

Question 7

One of the reasons for companies to borrow money is to _____.

A Purchase new equipment
B Pay taxes
C Interest payment
D All of the above

Question 8

Services provided by the investment advisors include _____.

A Trading on behalf of investors
B Issuing research reports
C Settlement of securities
D Paying cash

Question 9

SEC goes about its mission through all the following activities except:

A Regulation for disclosure of information by public companies
B Reporting to the NYSE
C Enforcement Authority
D Investor education

Question 10

Brokers route the client trades through which of the following venues for completing the client order?

A Stock Exchange
B Other brokers
C Internal books
D All of the above

Answers to Self Examination Questions

Answer to SEQ 1

The correct option is **D**.

Depository holds securities certificates in bulk form for their participants and maintains ownership records of the securities

Answer to SEQ 2

The correct option is **D**.

Clearing corporation is responsible for comparing member transactions, clearing trades and preparing instructions for automated settlement of those trades.

Answer to SEQ 3

The correct option is **B**.

Bonds with BBB or better rating are investment grade bonds.

Answer to SEQ 4

The correct option is **A**.

Debt holders earn interest for the money lent.

Answer to SEQ 5

The correct option is **D**.

The borrower specifies the amount, duration and interest rate offered at the time of borrowing.

Answer to SEQ 6

The correct option is **B**.

In case of Debt holders the money borrowed is returned to the investors at the end of the borrowing period.

Answer to SEQ 7

The correct option is **A**.

Companies often take debt to finance the buying of new equipment.

Answer to SEQ 8

The correct option is **B**.

Investment advisors offer investment advice to investors. They issue research reports for the benefit of clients.

Answer to SEQ 9

The correct option is **B**.

SEC does not need to report to NYSE. In fact NYSE is regulated by SEC.

Answer to SEQ 10

The correct option is **D**.

Brokers use exchanges, other brokers and internal books to match the client orders.

ASSET CLASSES

2

STUDY GUIDE 2: ASSET CLASSES

Get Through Intro

In this chapter we will study about asset classes that are mostly transacted in the cash market. Cash market refers to a transaction system where buyers pay the agreed price for the products on the spot. Hence these are also known as “Spot Markets”. So there is an immediate exchange of the product and the cash consideration. Cash market transactions take place either on a regulated exchange or over-the-counter (OTC).

Learning Outcomes

a) Discuss the traditional asset classes of equity, debt, commodity, forex
b) Know about alternate investment avenues
c) Know about basket and index
d) Know about structured products
e) Learn about the debt raised by the government
f) Learn about municipal bonds
g) Understand how securitization is carried out
h) Learn about agency debt

Case Study

Stacy has received the annual bonus. She plans to use this money for purchasing a car. The car purchase is planned after 8 months, on her birthday. Instead of keeping the cash in her savings account, she would like to earn some more income on the money. So she approaches her Bank and enquires about the time deposit available. Compared to the savings account, the bank is offering a 8 month long time deposit at attractive rates. So she goes ahead with the investment. The money is transferred to the bank and she receives a time deposit certificate from the bank. This is an example of a cash transaction.

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1. Discuss the traditional asset classes of equity, debt, commodity, forex. [Learning Outcome a]

Traditional Asset Classes

Traditional asset classes are the investments made in products like Debt, Equity, commodity, currency etc. The products here are plain vanilla products that are relatively simple to understand and appeal to general investors.

1. Equity

We have already looked at the characteristics of Equity in the previous chapter. We now proceed to looking at different Equity types.

a) Common Stock

A common stock represents fractional ownership in a corporation. The number of shares held by the investor determines the extent of ownership.

The key features include:

- Right to dividend payments
- Power to sell the stock to willing buyers
- Right to receive consideration in a merger
- Right to vote to elect directors and approve key decisions
- Right to receive a proportionate distribution of assets on corporate liquidation

Example

When Twitter raised money during its IPO, it offered 70m shares to the public. The statement from the company read: "We've priced our initial public offering of 70,000,000 shares of our common stock at a price to the public of $26 (£16) per share". Based on the IPO pricing, the micro blogging site was valued at more than $18bn.

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b) Depository Receipts

American Depository Receipts (ADR) or Depository receipts, in general, were introduced to ease the buying shares of foreign companies for the American investor. The investors had difficulties around different prices and currency values.

The history of ADRs dates back to 1927, when ADRs were issued as stock that trade in the United States but represent a specified number of shares in a foreign corporation. ADRs are bought and sold on American markets just like regular stocks, and are issued/sponsored in the U.S. by a bank or brokerage.

The company deposits a bulk lot of its locally listed shares with the sponsor bank. The foreign company also provides detailed financial information to the sponsor bank. The depositary bank sets the ratio of U.S. ADRs per home-country share. Generally the ratio is arrived such that the ADR listing price is between $10 and $100. The ADRs are then issued on New York Stock Exchange (NYSE), American Stock Exchange (AMEX) or the NASDAQ.

Example

Infosys listed its ADR on NASDAQ in March 1999. The ADR issued price was $ 34 and the ADR ratio was set at 1:1. In December 2012, Infosys transferred the listing of its ADR to the NYSE from the NASDAQ.

There are three different types of ADR issues:

- **Level 1:** This is the simplest type of ADR where foreign companies either don't qualify or don't wish to have their ADR listed on an exchange. They are traded on the OTC market. Level 1 ADRs do not have stringent regulatory requirements from the Securities and Exchange Commission (SEC).

- **Level 2:** This type of ADR is listed on an exchange or quoted directly on NYSE / NASDAQ. Level 2 ADRs have stricter SEC regulations, but they also get higher visibility trading volume.

- **Level 3:** These types of ADRs are available when the issuer floats a public offering of ADRs on a U.S. exchange. Level 3 ADRs are able to raise capital and gain substantial visibility in the U.S. financial markets.

The key advantages of ADRs are

- ADRs are an easy and cost-effective way to buy shares in a foreign company.
- Reduced administration costs and avoiding foreign taxes on each transaction.
- Foreign companies through ADRs get more U.S. exposure, allowing them to tap into the wealthy North American equities markets.

2. Debt

Debt refers to a fixed obligation on the borrower to pay interest at a fixed rate and return of principal at the end of the borrowing period. Debt is raised by both individuals and corporate. However the size of loan in each type varies.

The debt securities are classified based on different characteristics of the instrument

- The borrower of capital through debt securities can be government or private enterprises. Accordingly we have classification of government and non-government debt securities

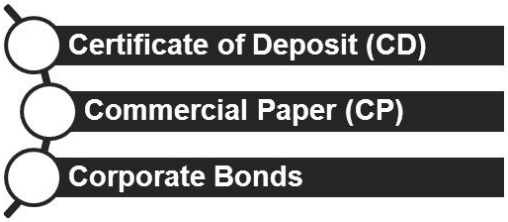
- Debt securities can be issued for different tenures. Securities issued for less than one year are called short term or money market securities. Securities with tenure of more than one year are long term debt securities.

- The interest rate charged for the securities can be fixed or variable. The variable or floating rate is generally linked to an index.

- Debt securities are often issued with restrictions around when they can be traded in market. After the primary offering, there could be a restriction saying no trading in the security for first 2 years. On the other hand, Open ended securities are available for trading without any restriction.

Commercial borrowings refer to the debt raised by enterprises. Few types of commercial borrowing is as follows

Diagram 1: Types of commercial borrowings



i. Certificate of Deposit (CD)

CDs are relatively low-risk investments that can be easily converted into cash. CDs typically pay higher interest than regular savings accounts. Traditionally CDs are sold by Banks, but of late, even brokerage firms offer CDs. They are also called as Time deposits. CDs come with a feature that deposits up to $250,000 are protected by federal deposit insurance.

ii. Commercial Paper (CP)

Commercial paper is a short term debt instrument issued by corporations for meeting their short term liabilities. These are unsecured promissory notes for a specified amount to be paid at a specified date. They are issued at a discount, with minimum denominations of $100,000. Issues having maturity up to 270 days do not SEC registration; hence most of the issues have terms ranging from 1 to 270 days. Thus CP is a money market instrument.

The main purchasers are other corporations, insurance companies, commercial banks, and mutual funds. Because commercial paper is usually sold in round lots of $100,000, very few retail investors buy paper.

Commercial paper is a discount instrument—the interest earned is the difference between the face value and the discounted purchase price. Yields are calculated using a banker's year of 360 days. The interest rate on commercial paper is slightly higher than Treasury bills of the same maturity, primarily because the interest earned from commercial paper, unlike T-bills, is not exempt from state and local taxes.

iii. Corporate Bonds

A debt security issued by a corporation and sold to investors.

Corporate bonds are debt securities issued by private and public corporations. Companies issue corporate bonds to raise money for a variety of purposes, such as building a new plant, purchasing equipment, or growing the business.

When investors buy a corporate bond, they lend money to the "issuer," the company that issued the bond. In exchange, the company promises to return the money, also known as "principal," on a specified maturity date. Until that date, the corporation usually pays the investor a stated rate of interest, at a set frequency.

The payment of the bond issue rests on the payment ability of the company. A company having consistent earnings potential will be able to offer debt securities to the public at a favourable coupon rate.

Interest rate

a) The interest rate charged can be a fixed rate. In some cases, floating rate is also offered if investors prefer to have variable rate. The index generally used can be any standard rate like the London Interbank Offered Rate (LIBOR).

b) Sometimes the bond issued is a zero coupon bond. Zero coupon bond is a bond that pays no interest (coupon) over its life and is issued at a significant discount to its face value. This is similar to the discounted security (like commercial paper). The interest rate earned is the difference between the face value and the discounted purchase price of the bond. Prices of zero-coupon bonds tend to be more volatile than bonds that make regular interest payments.

3. Bank Loans

Bank loans are another source of capital for individuals and corporate. Banks specialize in lending money after doing due diligence to ensure that the borrower has capacity to repay the loan. Banks often have different loan offering to cater to different needs of their customers.

With banks offering variety of products, it becomes important to be able to compare all the loan products on the same basis. Calculating the Internal rate of Return or IRR for each will help in a like-to-like comparison.

a) Revolver Loans

- It is a line of credit where the customer pays a commitment fee and is then allowed to use the funds when they are needed.
- These are used for operating purposes, with the amount fluctuating each month depending on the customer's current cash flow needs.

b) Equipment Financing

- These are issued for the purpose of purchasing equipment
- The equipment being purchased is used as collateral for the loan. After the loan is repaid, the ownership of the equipment is given to the borrower.

c) Accounts Receivable Factoring

This is a facility extended for short term funding. Accounts receivable (payments to be received from customers or any other receipt of cash on a short term basis) are used as collateral for obtaining short-term working capital loans. These types of loans are obtained fast and cost effectively due to underlying collateral.

d) Business Term Loan

Term loans are monetary loans that are repaid in regular payments over a set period of time. Term loans are usually issued by banks for projects that tend to span over few number of years. During the period of development of project, only interest is charged but not collected. Any accumulated interest is considered as additional loan taken, thereby interesting the loaned amount. After the project is completed, the corporate will start paying interest to the bank.

e) Trade Claim

When a loan is taken, the debtor is obliged to repay back the loan with agreed interest. However if the debtor fails to pay the creditor, the creditor can make a trade claim. Trade claims are specially common in case of bankruptcy cases.

Investors purchase trade claims with the intention of making financial gains in the future.

When a company files for bankruptcy under Chapter 11, some creditors of the company may never be fully compensated for outstanding loans. Creditors can sell their claims to investors and institutions willing to purchase them with the intention of enforcing the claims against the debtor at a later date. i.e. when the company comes out of bankruptcy.

For the creditor who sells the claim, he gets immediate cash. He thus avoids the risk of losing all the money if the company never comes out of bankruptcy.

4. Mezzanine

Mezzanine finance refers to a hybrid of debt and equity financing that is typically used to finance the expansion of existing companies. Let us look at 2 popular structures of mezzanine namely

a) Preferred Stock

- A class of ownership in a corporation that has flavour of both debt and Equity. Preferred stock has a higher claim on the assets and earnings than common stock.
- Like common stock, Preferred stock has a dividend that must be paid out.
- Like Debt, the dividend rate is fixed at inception.
- However preferred stock dividend is paid before dividends to common stockholders and the shares usually do not have voting rights. Though the dividend rate is fixed, it is not guaranteed.

b) Convertible

A convertible bond is a hybrid security that gives the bondholder both a fixed-income investment with coupon payments and potential to benefit from an increase in the company's share price.

The option to either receive the invested principal back or shares in the company is inbuilt into the convertible security. The additional value of the conversion option, implies the coupon payment on the bond will be lower than that of an equivalent bond with no conversion option.

A convertible bond issue, like that of other bonds, will state the maturity and the coupon on the bond. A convertible bond also has information about the conversion option, or how many shares will be received for the bond if it is converted.

The convertible option can also combined along with a zero coupon bond. It is also possible to issue preferred shares with a convertible option.

Example

Mitsui O.S.K. Lines, Ltd., a global shipping company, on April 8, 2014 issued 2 tranches of Zero Coupon Convertible Bond, USD 300mn maturing in 2018 and USD 200mn maturing in 2020. The conversion price (amount to be paid per share upon exercise of the stock acquisition right incorporated in the Bond) is $5.34 (for 2018 issue) and $4.80 (for 2020 issue). The share price on the date of issue was $3.87.

Often the above 2 classes of mezzanine finance are combined to create a hybrid security called as preferred convertible security. This includes the fixed dividend feature of the preferred stock, along with the optionality to convert into equity.

5. Commodity

Commodities markets, over the years have had tremendous economic impact on nations and people. Commodity trading is believed to have been prevalent in China as long ago as 6,000 years for rice.

Commodity refers to the raw material that is used to produce different kinds of manufactured products. They are classified as

- Soft commodities are products that are grown- wheat, coffee, cocoa etc.
- Hard commodities are mined, such as gold, rubber, oil etc.

A commodity market is a market that trades in primary produce rather than manufactured products. Commodity trading on the exchanges requires agreed-upon standards so that trades can be executed (without visual inspection). Unusual disruptions caused by weather or natural disasters cause significant spike in the volatility of the commodity prices.

Key players in the commodity market are

- Manufactures: to ensure supply of raw material for their production process. They prefer physical delivery of commodities
- Investors: gain from the movement in the commodity prices. They like to carry out financial transactions than take physical delivery of shares

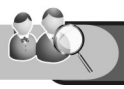
6. Forex

Currency refers to money / cash / cash equivalent in circulation. Forex refers to foreign exchange. Forex market is a global market where currencies are traded. It is the market where the relative values of different currencies are determined.

Forex market is a large, growing and liquid financial market that operates 24 hours a day. It is not a market in the traditional sense because there is no central trading location or “exchange". Most of the trading is conducted by telephone or through electronic trading networks.

The primary market for currencies is the “interbank market” where banks, insurance companies, large corporations and other large financial institutions manage the risks associated with fluctuations in currency rates. It plays a very important role in assisting international trade and investments by enabling currency conversion.

Forex trading is typically done through a broker or market maker. Two currencies make up an exchange rate. When one is bought, the other is sold, and vice versa. As a forex trader you can choose a currency pair that you expect to change in value and place a trade accordingly.



Example

If you had purchased 1,000 USD in 5 October 2012, it would have cost you around INR 51,905. Over the next 11 months, the value of the US Dollar vis-à-vis Indian Rupee appreciated. If you had chosen to close your position on 3 Sept 2013, you would have got back INR 68,155, giving you an absolute gain of INR 16250 i.e. 31% return.

Test Yourself 1

US Depository receipts are listed in which of the following exchange?

A Foreign exchange
B Local Exchange
C Third country
D They are not listed

Test Yourself 2

In the US markets, certificates of deposits are also known as

A Certificates
B Time deposits
C Public deposits
D None of the above

Test Yourself 3

Equipment financing loan includes

A Collateral financing
B Upfront payment
C Commitment fee
D Fixed interval loan

Test Yourself 4

Coffee is an example of

A Soft commodity
B Hard commodity
C Easy commodity
D Difficult commodity

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2. Know about the alternate investment avenues.

[Learning Outcome b]

Alternate Investments

1. Private Equity

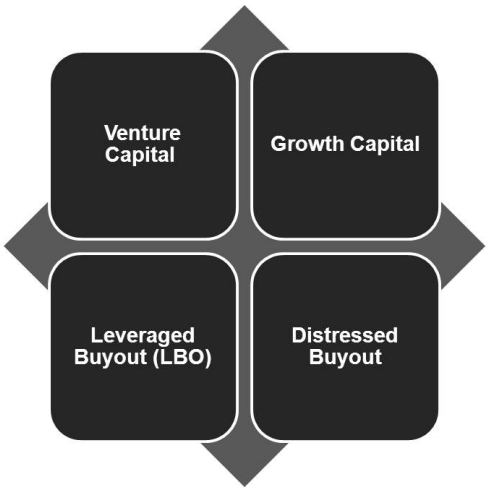
Private equity refers to investments (debt & equity) into companies that are not traded on public exchanges.

These investments range from initial capital in start-up enterprises to leveraged buyouts of mature corporations. The majority of private equity consists of institutional investors who can commit large sums of money. Private equity investments often demand long holding periods.

Although they are illiquid and perhaps more risky than publicly traded investments, when employed consistently as part of a larger balanced portfolio, they can offer higher returns than traditional public equity investments. In order to amplify returns, private equity firms typically raise a significant amount of debt to purchase the assets they invest in, in order to minimize their initial equity requirement. This investment strategy is called “Leveraged Buyout” (LBO).

There are many different types and sizes of private equity firms and funds. A private equity firm could have multiple funds that can specialize in either a specific industry or a specific geography. Different types of PE funds are

Diagram 2: Types of Private Equity Funds



a) Venture Capital

A venture capital (VC) investment typically involves a small investment in a high-growth company. These investments are made at an early stage in the company's life cycle. A start-up company can complete several rounds of series financing prior to going public or being acquired by a financial sponsor or strategic buyer.

b) Growth Capital

These PE funds invest in early stage of the company where the product has been established. The capital is needed by the company to invest in growth opportunities. This stage of investment is less risky albeit with less upside potential.

A few notable growth equity firms include General Atlantic, Warburg Pincus etc.

c) Leveraged Buyout (LBO)

A leveraged buyout is the acquisition characterized by the significant amount of debt financing used for the acquisition. The repayment of debt is serviced through the cash flows generated by the asset bought. As the debt balance is lowered and the company's value increases, the equity very quickly grows as a proportion of the company's capital structure. It is this deleveraging process that can help lead to substantial gains for the equity holders in a successful LBO investment. Well-known LBO firms include KKR, Blackstone, The Carlyle Group, TPG Capital etc.

d) Distressed Buyout

A distressed buyout includes a private equity firm purchasing a financially distressed company below market value with the intention of divesting the company in the future for a higher value. Prior to finalizing on the distressed buyout opportunity, a distressed buyout firm has to make judgments about the target company's value, the survivability, legal and restructuring issues that may arise. These funds are also known as Vulture funds.

In addition to investing money, the private equity also gets involved with day-to-day operational decision making of the company. Of late, private equity has started investing in public companies through a medium called PIPE (Private Investment in Public Enterprise)

2. Mutual Fund

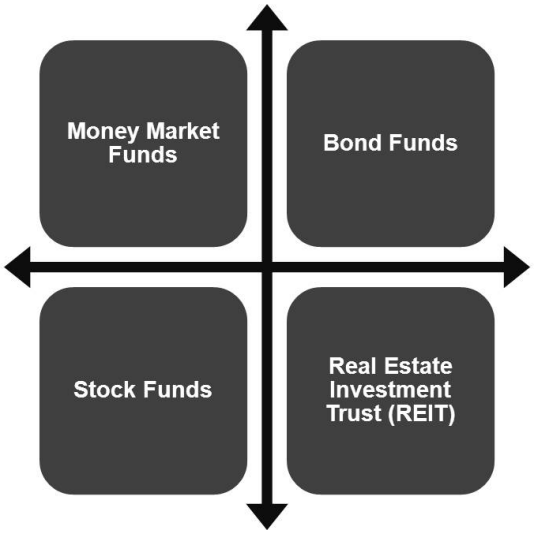
Over the past decade, American investors have increasingly looked at mutual funds to save for retirement and other financial goals. Mutual funds offer the advantages of diversification and professional management at a reduced cost. A mutual fund is a collective investment scheme that pools money from many investors to purchase securities. The fund manager invests money accordingly to a defined objective.

Investing in mutual funds involves risk and fees and taxes diminish a fund's returns.

Some key features are

- Investors purchase mutual fund shares from the fund itself (or through a broker for the fund) instead of from other investors on a secondary market, such as the New York Stock Exchange or Nasdaq Stock Market.
- The price that investors pay for mutual fund shares is the funds' per share net asset value (NAV) plus any shareholder fees that the fund imposes at the time of purchase.
- Mutual fund shares are "redeemable," meaning investors can sell their shares back to the fund (or to a broker acting for the fund).
- Mutual funds generally create and sell new shares to accommodate new investors. In other words, they sell their shares on a continuous basis, although some funds stop selling when, for example, they become too large.
- The investment portfolios of mutual funds typically are managed by separate entities known as "investment advisers" that are registered with the SEC.

Diagram 3: Types of mutual funds



Different types of mutual funds are

a) Money Market Funds

Money market funds have relatively low risks, compared to other mutual funds. By law, they can invest in only certain high-quality, short-term investments issued by the U.S. government, U.S. corporations, and state and local governments. Inflation will outpace and erode investment returns over time is a potential concern for investors in money market funds.

b) Bond Funds

Bond funds generally have higher risks than money market funds, since they pursue strategies aimed at producing higher yields. Unlike money market funds, the SEC's rules do not restrict bond funds to high-quality or short-term investments. Bond funds can vary dramatically in their risks and rewards.

c) Stock Funds

Stock funds are the funds that invest in stocks thereby reflecting the movement in the stock prices. Although a stock fund's value can rise and fall quickly (and dramatically) over the short term, historically stocks have performed better over the long term than other types of investments — including corporate bonds, government bonds, and treasury securities.

Various options within stock funds are

- Growth funds focus on stocks that have the potential for large capital gains.
- Income funds invest in stocks that pay regular dividends.
- Index funds aim to achieve the same return as a particular market index, such as the S&P 500 Composite Stock Price Index
- Sector funds may specialize in a particular industry segment, such as technology or consumer products stocks.

d) Real Estate Investment Trust (REIT)

REIT has a structure similar to mutual funds. Here the investment is done in real estate instead of securities like stocks and bonds. It is a company that owns, and operates income-producing real estate.
Some REITs also engage in financing real estate. REITs can be publicly or privately held. Public REITs may be listed on public stock exchanges.

Examples of REITs in US operating in different real estate domains are

- Home Properties, Inc. - Residential
- Pennsylvania Real Estate Investment Trust - Malls
- Cedar Realty Trust – Shopping Centres
- Boston Properties, Inc. - Office
- DCT Industrial Trust – Industrial

Test Yourself 5

Which of the following entities make investment and are involved in the day-to-day operations of the company?

A Mutual Fund
B Hedge Fund
C REIT
D Private Equity

Test Yourself 6

What is a money market mutual fund?

A A mutual fund investing in money instruments
B A mutual fund investing in short term investments like money market instruments.
C A mutual fund investing in Real estate assets
D All of the above

---

3. Know about basket and index.

[Learning Outcome c]

Basket & Index

1. Basket

Basket refers to a group of securities that are considered together as one unit. The basket can refer to any asset class. These can be

- Standard group – Index to measure performance of a representative market.
- Customised – Grouping done to achieve a particular objective, as per investors needs

2. Index Concepts

An index or market index is a method of measuring the value of a section of the market. Index serves as a benchmark for measuring the performance of a group of securities that are seen as representative of the market.

It is computed from the prices of selected securities (typically a weighted average). It is a tool used by investors and financial managers to describe the market, and to compare the return on specific investments.

There are indices available for various markets.

- Equity – NYSE, NSADAQ
- Fixed Income - Barclays Capital Aggregate Bond Index
- Commodity – Nymex crude, Henry Hub

3. Index Fund

Index funds are class of funds that try to replicate the performance of an Index. The fund replicates the index performance by creating a fund that has constituents in the proportion of the index members. With the composition of the fund known, investors can easily follow the fund performance.

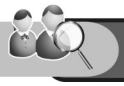
Index funds often take the form of a collective investment scheme i.e. Mutual fund. Such Index Mutual Funds, also known as passive funds, offer a lower cost diversification than even actively managed mutual funds.

4. ETF

ETFs are funds that belong to the class of index funds. Unlike mutual funds, ETFs are traded on the stock exchange, like stocks. They can be bought / sold throughout the trading day, at a value close to its Net Asset Value (NAV). They are also called Index Shares.

An ETF holds assets such as stocks, commodities, or bonds, and trades close to its net asset value over the course of the trading day. The assets held mimic the index that the ETF tracks.

ETFs are cheaper than index mutual fund since there is no fund management fee that is included.



Example

iShares Dow Jones US ETF is an exchange-traded fund. The Fund seeks investment results that correspond to the performance of the Dow Jones U.S. Index. The Fund invests in a representative sample of securities included in the Index that collectively has an investment profile similar to the Index.

Test Yourself 7

Which of the following is NOT a characteristic of ETF?

A ETFs are traded on the stock exchange, like stocks
B NAV of ETF is available at the end of the day
C ETF replicates the performance of an index
D Low cost as no fund management fees included

---

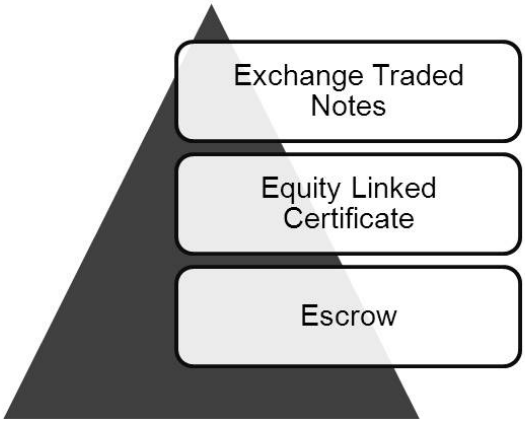
4. Know about structured products.

[Learning Outcome d]

Structured Products

Structured products are investment instruments created with a specific goal to meet needs of clients that cannot be met from the standard financial instruments available in the markets. Structured products can be used: as an alternative to direct investment; as part of the asset allocation process to reduce portfolio risk.

Diagram 4: Structured products



Some structured products are

1. Exchange Traded Notes

An Exchange Traded Notes (ETN) is a senior, unsecured, unsubordinated debt security issued by an underwriting bank. Similar to other debt securities, ETNs have a maturity date and are backed only by the credit of the issuer.

Features include

- Traded on an exchange
- Linked to the return of a benchmark index.

ETNs don't actually own anything they are tracking.

If the underwriting bank goes bankrupt, the investment might lose value

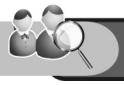
2. Equity Linked Certificate

It is a customized security, consisting of a low coupon bond and return whose performance is linked to the performance of a single equity security, a basket of equity securities, or an equity index.

A typical structure consists of principal-protection, i.e. the investor is guaranteed to receive 100% of the original amount invested at maturity but receives no interest.

Most equity-linked notes are not actively traded on the secondary market and are designed to be kept to maturity.

It is appropriate for conservative equity investors or fixed-income investors who desire equity exposure with controlled risk.



Example

Assume an investor buys a hypothetical three-year 100% principal protected Equity-Linked Note with 80% participation in the upside of the S&P 500 Index for $10,000. The starting index level is 1,500.

Scenario 1: At maturity, if the S&P 500 Index level is above 1,500, then the payoff of the note will be $10,000 in principal plus an equity-linked coupon equivalent to any increase in the index. If the index level in three years is 1,950 (an appreciation of 30%), then the coupon would be $2,400 (80%*30%*10,000) and the total payoff would be $12,400 ($10,000 + $2,400).

Scenario 2: If the index level is below 1,500 at maturity, i.e., the underlying equity performance is negative, the final payoff to the investor will be $10,000 in principal.

---

3. Escrow

An escrow arrangement is operated with the idea of reducing counterparty risk in a transaction i.e. other party failing on its promise.

An escrow account is a temporary pass through account held by a third party during the process of a transaction between two parties.

This is a temporary account as it operates until the completion of a transaction process, which is implemented after all the conditions between the buyer and the seller are settled.

Example

An escrow account can be used in the sale of a house. If there are conditions to the sale, such as the passing of an inspection, the buyer and seller may agree to use escrow. In this case, the buyer of the property will deposit the payment amount for the house in an escrow account held by a third party. This assures the seller - in the process of allowing the house to be inspected - that the buyer is capable of making payment. Once all of the conditions to the sale are satisfied, the escrow transfers the payment to the seller, and title is transferred to the buyer.

Test Yourself 8

Which of the following is a characteristic of Equity linked certificate?

A Unlimited equity risk exposure
B Good for risky investors
C Includes principal protection
D It is a standardized product

---

5. Learn about the debt raised by the government.

[Learning Outcome e]

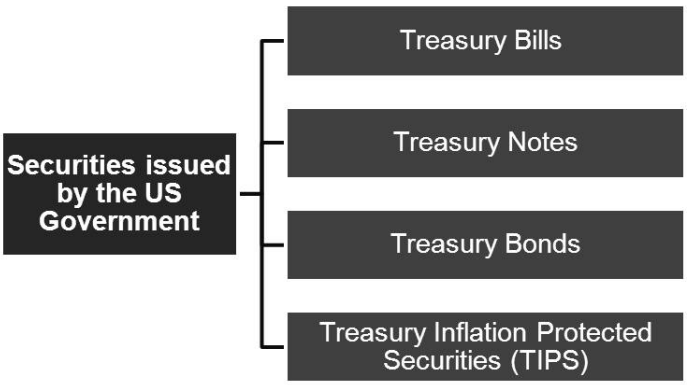
Sovereign Securities

The United States government is the largest issuer of debt securities, and represents the debt raised by the US federal government. The debt raised is considered as the safest fixed-income investments. US government securities are highly liquid.

The government sells securities directly to investors through the primary market. In addition, there is a very large secondary market for Treasuries. Although Treasuries have almost no credit risk, their prices may fluctuate with changes in interest rates.

The four kinds of marketable securities are

Diagram 5: Securities issued by the US Government



1. Treasury Bills

Treasury bills (or T-bills) mature in one year or less.

They are issued at discount; they do not pay interest prior to maturity. So a $1000 T-bill for 6 months will be issued at $ 980. At maturity, the investor will bet $1000. So he / she will get income of $20 over 6 months for an investment of $ 980. This translates to an annual yield of (20/980)* 2 = 4.08%

Treasury bills as the least risky investment available to U.S. investors.

2. Treasury Notes

Treasury notes (or T-notes) mature in two to ten years. They have a coupon payment every six months. They are issued in denominations of $1,000.

So in a transaction, if one buys a "$1,000" T-Note for say, $950, collects interest over 10 years of say, 2% per year, which comes to $20 yearly, and at the end of the 10 years cashes it in for $1000. So, $950 over the course of 10 years becomes $1200.

3. Treasury Bonds

Treasury bonds (T-Bonds, or the long bond) have the longest maturity, from twenty years to thirty years. They have a coupon payment every six months like T-Notes, and are commonly issued with maturity of thirty years. The secondary market is highly liquid, so the yield on the most recent T-Bond offering was commonly used as a proxy for long-term interest rates in general

4. Treasury Inflation Protected Securities (TIPS)

Treasury Inflation-Protected Securities (or TIPS) are the inflation-indexed bonds issued by the U.S. Treasury. The principal is adjusted to the Consumer Price Index (CPI), the commonly used measure of inflation.

The coupon rate is constant, but generates a different amount of interest when multiplied by the inflation-adjusted principal, thus protecting the holder against the official inflation rate.

Non US Sovereign Debt

The US markets also provide the investors access to Non US sovereign debt. This represents the national debt of the respective countries. On similar lines of the US government debt, the various securities issued include

- Treasury
- Bonds
- Bonds – Inflation adjusted

Test Yourself 9

Treasury securities are issued by

A US Government
B NYSE listed corporation
C Individuals
D NASDAQ listed company

---

6. Learn about municipal bonds.

[Learning Outcome f]

Municipal Bonds

A municipal bond (or "Muni") is a bond issued by a local government, or their agencies to fund public projects such as the construction of schools, hospitals, roads and any other public utility.

All municipal bonds fall into one of two categories—general obligation or revenue bonds—based on how the interest and principal repayment will be funded. Within each category, municipal bonds can be structured a number of different ways, each with different benefits and tax treatment.

Municipal bonds may be secured by

i. General obligations of the issuer

Principal and interest are secured by the full faith and credit of the issuer and usually supported by either the issuer's unlimited or limited taxing power.

ii. Specified revenues

Principal and interest are secured by revenues derived from tolls, charges or rents from the facility built with the proceeds of the bond issue.

In the United States, interest income received by holders of municipal bonds is often exempt from the federal income tax, and also state income tax.

1. Floater Muni Bond

The interest charged is variable. It is linked to a floating rate that is reset at a pre-determined frequency.

For example, a municipal bond may be issued with the rate of interest linked to LIBOR + 50 bps.

2. Residual Certificate

A residual certificate security represents an inverse floater security i.e. it pays only the residual income from the floating security. It is created by dividing the income from a municipal bond into two income streams. Creation of a residual certificate necessarily implies creation of a primary direct floater. The floater will be linked to a reference rate like LIBOR.

The municipal bondholder will create two new securities:

- **Primary direct floating-rate bond**

Income from municipal bond income will be paid to the holder of the primary direct bond holder using LIBOR as reference

- **Residual inverse floating-rate bond**

If there is any income left over after paying off the primary holder, that income is paid to the holder of the residual bond.

3. Zero Coupon

Zero coupon municipal bonds offer a potentially higher rate of return commensurate with additional credit risk. Zero coupon municipal bonds are the only zero coupon securities that pay interest that is exempt from federal income tax and, in many cases, state and local taxes.

Typically, zero coupon municipal bonds are typically sold in denominations of $5,000 face amounts. Because they are sold at a substantial discount from face amount, the purchase price is still lower. Zero coupon municipal bonds provide investors with the opportunity to lock in a particular rate of return, without having to worry about reinvestment risk or interest rates in the future.

Zero coupon municipal bonds available with maturities ranging from one to 40 years, with the majority of these bonds having maturities between eight and 20 years.

Repo & reverse Repo

Repo transactions are used when a party is in need of cash for short term and uses assets available with them as collateral to raise short term funds.

A repo transaction consists of 2 stages

- Party A sells an asset to party B at one price at the start of the transaction
- Party A commits to repurchase the an equivalent asset from B party at a different price at a future date

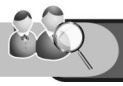
It is used when party A requires cash for a brief period. Cash is raised from party B, using the asset as collateral. If the Party A defaults during the life of the repo, the party B can sell the asset to a third party to offset his loss.

The difference between the price paid by B at the start of a repo and the price he receives at the end is his effective return on the cash lend.

- For party A, it is a repo;
- For party B, (buying the security and agreeing to sell in the future) it is a reverse repo.

Those who deal in government securities use repos as a form of overnight borrowing.

While calculating the interest amount for the repo transaction, the 360 day convention is used i.e. each month is assumed to be 30 days and a year consists of 360 days. This eases the calculation process.



Example

A dealer repos $10 million par of a Treasury bond to counterparty for 15 days

The market value of the collateral is $11,253,345.

The counterparty takes a 3% haircut, lending 97% of the market value, or $10,915,745 at a repo rate of 7.00%.

After 15 days, the municipality returns the $10 million bonds, and the dealer repays
$ 10,915,745 (1+0.07 x 15/360) = $10,947,582

Test Yourself 10

While calculating repo transaction, what convention is used for counting days?

A 360 day convention
B 365 day convention
C 366 day convention
D No convention

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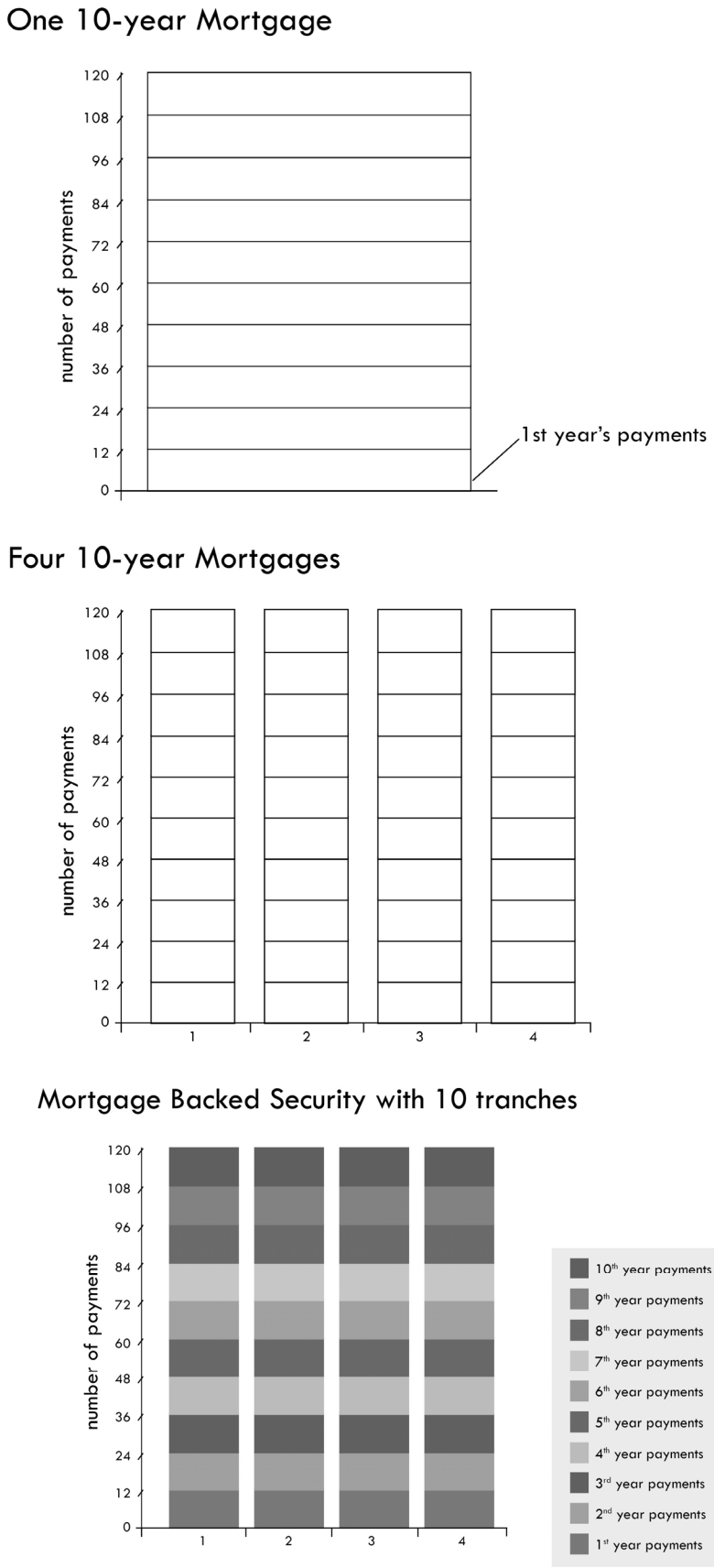
7. Understand how securitization is carried out.

[Learning Outcome g]

Securitization

Diagram 6: Securitization



The mortgage consists of 12 payments a year, for 10 years. Each box constitutes 12 monthly payments.

The lender has 120 coupons for each mortgage. All the coupons for four mortgages are thrown into one box.

Then start sorting the coupons according to the year that the payment will be made.

All coupons for payments in the first year are called "Tranche A"

All coupons for payments in the second year are called "Tranche B"

And so on ….

Each Tranche will be sold as separate bond. Several tranches can be combined together into a single bond also. Depending on the combination of the tranches, the cash flows of the bond will vary.

1. Asset Backed Security (ABS)

An asset-backed security (ABS) is a security whose income payments are backed by a specified pool of underlying assets. The pool of assets consists of small and illiquid assets which are unable to be sold individually. However by pooling the assets into financial instruments, through securitization, allows them to be sold to general investors.

Often a special purpose vehicle (SPV) is created to handle the securitization of asset backed securities. In mortgage pass-through, all investors participate proportionately in the net cash flows from the mortgage collateral.

In general parlance,

Securitization issues backed by consumer-backed products – car loans, consumer loans and credit cards, among others – are called ABS

Securitization issues backed by mortgages are called MBS. These mortgages can be both residential as well as commercial.

Securitization issues backed by a sinking fund are called Sinkable bond. A sinking fund is a fund that an Issuer creates by setting aside money to repay the money owed based on the bond's par value. A sinkable bond issuer is required to buy a certain amount of the bond back from the purchaser at various points throughout the life of the bond, at a set sinking price. If interest rates fall below the nominal rate of the bond, sinking fund provisions allow the company to repay all or part of the amount owed and refinance the remaining balance to the lower rate.

2. Collateralized Obligations (CO)

Collateralized obligations (CO) are specialized securitized issues. Unlike the ABS which is a “pass through” structure, the COs have a sequential pay structure.

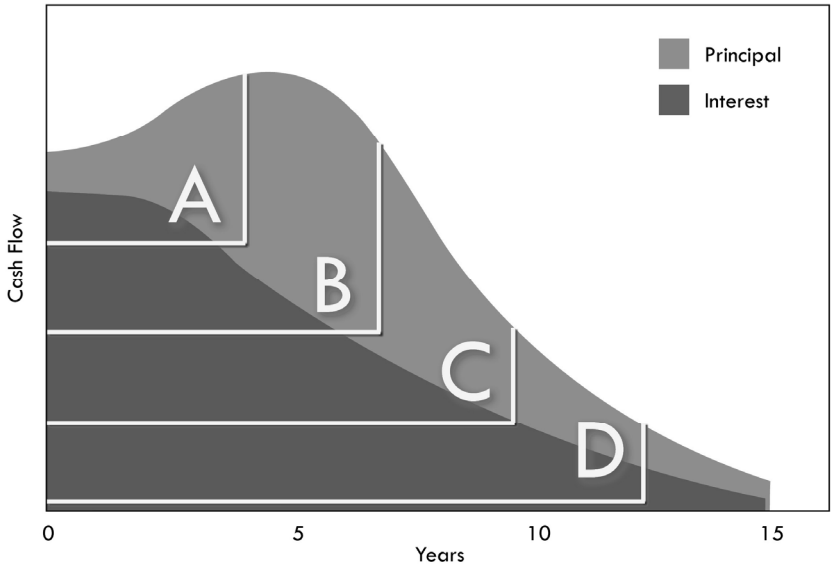
Different bond classes are issued, which participate in different components, called tranches, of the net cash flows. The tranches are structured individually, with own risk characteristics and maturity range. Investors can select a bond offering whose characteristics most closely meet their needs.

A sequential pay structure comprises of sequentially maturing tranches. All tranches participate in interest payments from the mortgage collateral, but initially, only the first tranche receives principal payments. It receives all principal payments until it is retired.

Next, all principal payments are paid to the second tranche until it is retired, and so on.

- CMO are a specialized type of Mortgage backed security
- Securitization issues backed by debt obligations are called CDO.
- CLOs are backed by loan obligations.

Diagram 7: Mortgage



In addition to individual securitized securities, investors also have options of investing in a basket of issues. This is achieved through investment in Indices like ABX, CMBX. Investment through the index also offers diversification benefit to the investors.

Test Yourself 11

What are sinkable bonds?

A Bonds issued by sinking companies
B Bonds backed by sinking fund
C Bonds backed by Real estate loans
D Bonds backed by loans

8. Learn about agency debt.

[Learning Outcome h]

Agency versus Non-Agency

Mortgage backed securities guaranteed by the Government Agencies are called Agency issued.
MBS issued backed by subsidiaries of investment banks, financial institutions, and home builders are called non-agency securities.

Agency Debt

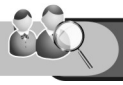
Agency Debts are issued by two types of entities

- Government Sponsored Enterprises (GSEs), usually federally-chartered but privately-owned corporations;

Example

- Student Loan Marketing Association (Sallie Mae),
- Federal National Mortgage Association (Fannie Mae)
- Federal Home Loan Mortgage Corporation (Freddie Mac).

- Federal Government agencies which may issue or guarantee these bonds—to finance activities related to public



Example

- Federal Housing Administration
- Government National Mortgage Association (Ginnie Mae)

Most agency bonds pay a fixed rate of interest or fixed coupon rate semi-annually.

However agencies do structure their bond issues to meet different investor needs. These include structure like variable rate, embedded options etc.

When the agencies issue new debt, the interest rate charges is made up of following components

- Credit Enhancement Fee – for enhancing the credit worthiness of the bond. This makes it more attractive to the investor for increased safety
- Trustee Fee Bond - Fees paid to the trustee that manages the cash flows of the underlying securities that make up the investment pool for the issued debt
- Servicing Fee – fees for providing the investor services

Additionally for variable rate bond, following components apply

- Gain Share Fee – fee for including the upside from profit sharing
- Liquidity Fee Bond – Fee for providing liquidity in the market
- Remarketing Fee Bond – fee for providing buy back

Principal-Only (PO) Securities

Mortgage securities created so that investors receive only principal payments generated by the underlying collateral. In purchasing a PO security, investors pay a price deeply discounted from the face value and ultimately receive the entire face value through scheduled payments and prepayments.

The market values of POs are extremely sensitive to prepayment rates and therefore interest rates. If interest rates are falling and prepayments accelerate, the value of the PO will increase.

Interest-Only (IO) Securities

Separating principal payments to create PO mortgage securities necessarily involves the creation of Interest-Only (IO) securities. CMOs that have PO tranches will therefore also have IO tranches. IO securities are sold at a deep discount to their “notional” principal amount, namely the principal balance used to calculate the amount of interest due. They have no face or par value. As the notional principal amortizes and prepays, the IO cash flow declines.

Test Yourself 12

Agency debt includes securities issued by

A Student Loan Marketing Association (Sallie Mae),
B Federal National Mortgage Association (Fannie Mae)
C Federal Housing Administration
D All of the above

Summary

- Traditional asset classes for investment include Debt, Equity, Commodity, Currency etc.
- Equity includes Common stock and American depository receipts (ADR)
- Debt issues are based on numerous characteristics like Tenure, Issuer, Rate etc.
- Commercial borrowings include Certificate of Deposit (CD), Commercial Paper(CP), Corporate Bonds etc
- Banks also give out different kinds of loans to meet the requirements of business.
- Hybrid structures like Preferred and convertible provide flavor of both debt & Equity
- Commodities are classified as Hard & Soft Commodities
- Currencies are traded in forex market where relative values of currencies are determined.
- Private Equity funds are classified as Venture, Growth, Leveraged Buyout and distressed funds
- Mutual fund types include money market, bond, stock funds, REITs etc.
- Index serves as a benchmark for measuring the performance of a group of securities. Investing in an index offers diversification benefits to investors. Options include Index funds, ETF etc.
- Structured products like Exchange Traded Notes, Equity Linked Certificate etc. offer customized risk return profiles to investors.
- Escrow arrangement is operated with the idea of reducing counterparty risk
- Debt issued by the US government is called treasury securities. These include treasury bills, notes, bonds and Treasury Inflation Protected Securities (TIPS)
- Municipal bonds are issued by a local government to fund public projects. Various structures are possible including Floater Muni, Residual, Zero coupon etc.
- Repo transactions are used when a party is in need of cash for short term
- Securitization refers to bonds backed by a pool of assets. Bonds issued can have 3 structures i.e. “pass through”, Sequential pay and Stripped (IO, PO)
- Agency debt refers to securitized issues created by the government sponsored or federal government agencies

Answers to Test Yourself

Answer to TY 1

The correct option is **B**.

Depository receipts are listed in the local exchanges, though they represent securities listed in a foreign country.

Answer to TY 2

The correct option is **B.**

CDs are also known as Time deposits.

Answer to TY 3

The correct option is **A.**

Equipment financing includes the equipment being bought is given as collateral.

Answer to TY 4

The correct option is **A.**

Agricultural commodities are soft commodities.

Answer to TY 5

The correct option is **D.**

Private Equity makes investment and is involved in the day-to-day operations of the company.

Answer to TY 6

The correct option is **B.**

Money market mutual fund invests in short term investments like money market instruments.

Answer to TY 7

The correct option is **B.**

NAV of ETF is available throughout the trading day.

Answer to TY 8

The correct option is **C.**

Equity linked certificate includes principal protection. So upside is linked to Equity returns while downside is protected.

Answer to TY 9

The correct option is **A.**

Security issued by the government is called treasury.

Answer to TY 10

The correct option is **A.**

For repo transaction in US, the 360 day convention is used.

Answer to TY 11

The correct option is **B.**

Sinkable bonds are asset backed securities that are backed by a sinking fund.

Answer to TY 12

The correct option is **D.**

All are example of Government or government backed enterprises. So any debt issued by them is agency debt.

Self-Examination Questions

Question 1

A Brazilian company plans to list its ADR in the US market. One of the first steps to be completed is

A Determining the ADR ratio
B Purchase the domestic shares from the Brazilian market
C Issuing the depository receipts
D Pay dividends

Question 2

A US company is planning for a commercial paper issue for 180 days. The company should approach the SEC before how many days for registration

A 1 month
B 2 months
C 15 days
D No registration is required

Question 3

Zero coupon bonds are issued

A At discount to the par value
B At par
C At premium
D By offering a rebate

Question 4

Why do investor purchase trade claims?

A Investors want to raise claims on the failed trade and benefit from compensation paid
B Investor want to claim the business
C Investors buy the claims from creditors at low price, with the intention to make profits later
D Trade claims are easily available, to investors like to buy them

Question 5

Which of the following has the last claim on assets and earnings?

A Debt
B Equity
C Preferred
D None of the above

Question 6

When do the transactions in the forex markets take place?

A 9 AM to 5 PM
B 8AM to 3 PM
C 10AM to 3:30 PM
D All round the clock

Question 7

For an exchange traded note, if the bank issuing the security goes bankrupt, what happens to the security?

A No risk, since traded on exchange
B Investment is at risk
C Other bank takes over the liability
D No change in the investment risk

Question 8

What is the frequency for Coupon payment for treasury notes?

A Quarterly
B Yearly
C Half Yearly
D Monthly

Question 9

What does the acronym TIPS stand for?

A Total Interest Paid Soon
B Treasury Inflated Passing Securities
C Treasury International Pass-through Securities
D Treasury Inflation Protected Securities

Question 10

Which of the following is not a characteristics of Interest Only (IO) MBS?

A IO securities are necessarily created when PO securities are created
B They are issued at deep discount
C They have no face or par value
D They only have notional principal

Answers to Self Examination Questions

Answer to SEQ 1

The correct option is **B.**

The first step for issuing depository receipt is to buy domestic shares in the local market.

Answer to SEQ 2

The correct option is **D.**

For commercial papers having maturity less than 270 days, no registration is required with the SEC.

Answer to SEQ 3

The correct option is **A.**

Zero coupon bonds are issued at discount to the par value

Answer to SEQ 4

The correct option is **C.**

Investors buy the claims from creditors at low price, with the intention to make profits later

Answer to SEQ 5

The correct option is **B.**

Equity holders have last claim on assets and earnings of the company.

Answer to SEQ 6

The correct option is **D.**

Forex market operates round the clock.

Answer to SEQ 7

The correct option is **B.**

If the bank issuing the ETN goes bankrupt, the investment is at risk.

Answer to SEQ 8

The correct option is **C.**

Coupon is paid on a six-month interval in case of treasury note.

Answer to SEQ 9

The correct option is **D.**

TIPS stands for Treasury Inflation Protected Securities

Answer to SEQ 10

The correct option is **B.**

Interest Only (IO) MBS do not have face or par value and only have a notional principal. So there is no concept of issuance price.

DERIVATIVE PRODUCTS

3

STUDY GUIDE 3: DERIVATIVE PRODUCTS

Get Through Intro

The history of derivatives is longer than most people believe. Though the nomenclature was different, the essence of derivative contracts was present in many historical events. One of the earliest recorded financial bubbles, known as Tulip Mania, was characterized by forward derivative contracts on the Tulip bulbs during 1637. Over the years, as interest in the derivatives segment rose and centers were established for trading in futures e.g. Chicago Board of Trade in 1848, the trading volumes picked up. Financial innovation continued in the market, with introduction of Options and other derivatives to manage risk.

Learning Outcomes

a) Discuss the concepts of derivatives
b) Understand the differences between forwards, futures and options
c) Know about listed derivatives
d) Know about OTC derivatives
e) Learn about Forward Rate Agreement (FRA) contracts
f) Learn about swaps and their variations
g) Know about OTC contracts
h) Understand the importance of credit derivatives
i) Know about the role played by collateral in financial transactions

1. Discuss the concepts of derivatives

[Learning Outcome a]

1. Definition of derivatives

Definition

An arrangement or product (such as a future, option, or warrant) whose value derives from and is dependent on the value of an underlying asset, such as a commodity, currency, or security

(Source: http://www.oxforddictionaries.com)

Before engaging in the features of the derivatives, let us take a look at the historical perspective.

2. History of derivatives

Trading in commodities has existed for centuries around the world, mostly cash based transactions but sometimes forward agreements were done. These deals meant agreeing to pay for something in future at an agreed price in the present. These were simple agreements to purchase designated goods when they arrived by ship, and they were used for centuries when shipping was the primary mode of international trade.

Chicago Board of Trade (CBOT) established in 1848 became a center for cash trading of a variety of goods as well as trading of forward contracts. As trading of forward contracts increased, the Board decided to standardize the contracts so as to streamline the trading and delivery processes. Traders were asked to trade contracts that were identical in terms of quantity, quality, delivery month and terms, as established by the exchange. The only thing left for traders was price negotiation and number of contracts. These standardized forwards became the first modern futures contracts.

As financial innovation continued, it was realized that in the futures contract, both the parties involved in the transaction had obligation to fulfill the commitment. How about introducing a product that gives flexibility to one party i.e. the party can decide to walk away from the contract if at future date it realizes that the contract is no longer beneficial? However that introduces additional risk to the counterparty. So there arose a need to compensate the party with obligation and charge more to the party for flexibility. Thus emerged an options contract where one party had to pay premium for the right (but not obligation) to buy/sell at a future date. Listed options trading picked up only by early 1970s, after Chicago Board Options Exchange (CBOE) was created as a spin-off from CBOT.

Test Yourself 1

Which of the following is always traded on the exchange?

A Forward
B Future
C Option
D All of the above

---

2. Understand the differences between forwards, futures and options.

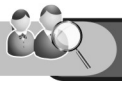
[Learning Outcome b]

1. Forwards and Futures

A commitment between two (or more) parties who agree to engage in a transaction at a later date and at a specific price, on terms agreed today. It is an agreement to exchange an asset or cash flows at a specified future date at a price agreed on at the trade date.

The commitments can take 2 forms:

- **Forward contracts or forwards**: OTC-traded derivatives with customized terms and features.
- **Futures contract or futures**: Exchange-traded derivatives with standardized terms.



Example

For example, two parties want to trade crude oil. They want to have the delivery in next 25 days for a volume of 90,000 barrels of oil. On the exchange, say, the closest contract in terms of tenure and volume is a 1 month contract for 100,000 barrels. So the parties have 2 options

Option 1: Enter a futures contract and agree today to exchange 100,000 barrels of crude oil for $106.20/barrel one month hence.

Option 2: Enter a forwards contract and agree today to exchange 90,000 barrels of crude oil for $106.20/barrel 25 days hence.

So in both the cases, the price remains same.

Features of forwards and futures

a) Both futures and forwards are binding agreements to act at a later date.

b) Settlement of the parties obligations can happen in 2 forms, namely

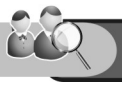
- Physical settlement occurs when the actual underlying asset is delivered in exchange for the agreed-upon price.
- Cash settlement includes a single payment equal to the market value of the derivative at its maturity or expiration.

c) Leveraged instruments because the investor gives little cash outlay (called margin money) and profits from the price movement.

d) Convenient means of hedging or speculating.

2. Options

An option's contract gives the option holder the right, but not the obligation to perform a specified transaction with the option issuer as per specified terms. The contract can be linked to a variety of underlying assets. Most exchange-traded options have stocks or some index as its underlying asset. On the other hand, OTC-traded options have a huge variety of underlying assets (bonds, currencies, commodities, swaps, or baskets of assets). To obtain these rights, the buyer must pay an option premium (price). This is the amount of cash the buyer pays the seller to obtain the right that the option is granting them. The premium is paid when the contract is initiated.



Example

Aaron is confident that Apple Inc. will declare very good quarterly results and the stock price will go up by 10% over the next couple of months. Apple shares are currently trading at $540. He does not have the funds to buy Apple shares immediately, but at the same time he does not want to miss the opportunity.

Answer

Aaron can buy an Apple Call Option with a strike price of $550 two months later by paying a fee of $5.

If the results are indeed good as Aaron expects, the stock will move up. Say in 2 months time, the stock price reaches $570. So with the call option, Aaron has the right to buy the stock at $550, though the market price is $550, implying a profit of $20 per share.

However if the results are good, the stock may lose some value and say it drops to $525. Now Aaron has the right to let the option contract retire. The maximum lose that he has to bear is $5 per share i.e. the options premium fee.

There are two main types of options:

a) Call Option

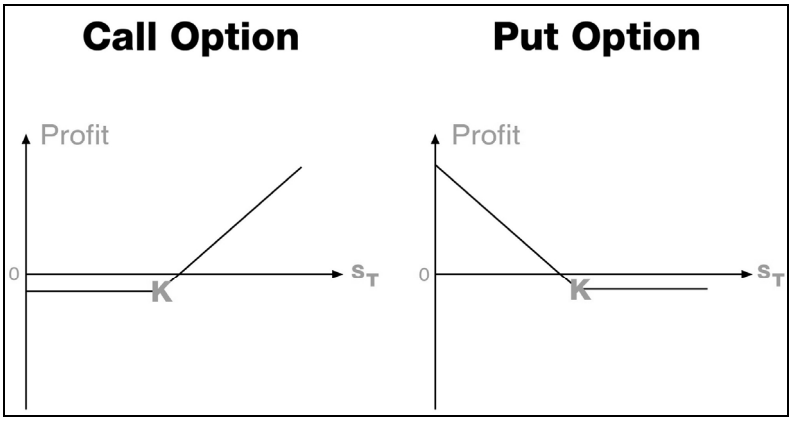
- Call options provide the holder the right (but not the obligation) to purchase an underlying asset at a specified price (called strike price), for a certain period of time.
- If at expiration, the stock is below the strike price, the option expires and becomes worthless.
- Investors buy calls when they think the share price of the underlying security will rise or sell a call if they think it will fall. Selling an option is also referred to as "writing" an option.

b) Put Option

- Put options give the holder the right to sell an underlying asset at a specified price (the strike price) for a certain period of time.
- The seller (or writer) of the put option is obligated to buy the stock at the strike price.
- Investors buy puts if they think the share price of the underlying stock will fall, or sell one if they think it will rise.

Payoff from Call & Put options

Diagram 1: Payoff from call and put options



Outcome of Options Strategy

Market outlook	Strategy	Outcome	
		Profit potential	**Loss potential**
Bullish	Buy call	Unlimited	Limited
Bearish	Sell call	Limited	Unlimited
Bearish	Buy put	Unlimited	Limited
Bullish	Sell put	Limited	Unlimited

There are 2 main styles of options, namely

- **American** - Owners of American-style options may exercise at any time before the option expires
- **European** - Owners of European-style options may exercise only at expiration date of the contract.

Test Yourself 2

Ryan has purchased a put option for strike price of $200 with a premium of $10. He keeps the option till the last day. On the last day, the underlying stock is at $190. What is the payoff for Ryan?

A Profit on $20
B Profit $10
C No Loss or gain
D Loss of $10

Test Yourself 3

Mary is expecting the market to be bearish over the next one month. Which strategy should Mary employ for profiting from the market?

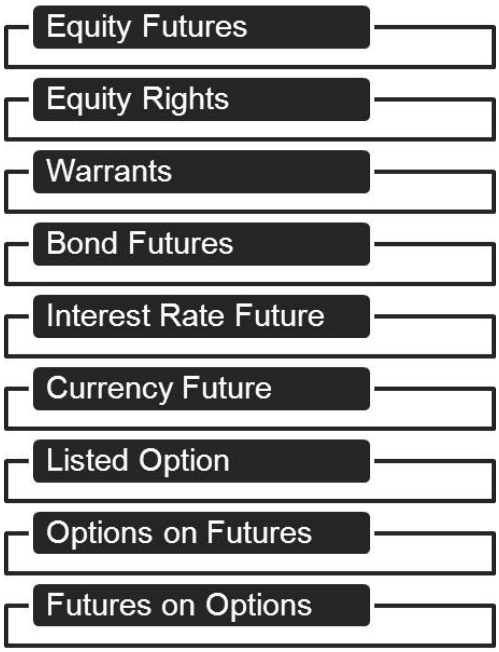
A Buy a call option
B Sell a put option
C Sell a forward
D Stay away from the market

3. Know about listed derivatives.

[Learning Outcome c]

Listed Derivatives

Diagram 2: Listed derivatives



1. Equity Futures

An equity derivative is a class of derivatives whose value is derived from one or more underlying equity securities. Examples futures contract on the Google Stock or on Dow Jones Industrial Average (DJIA) Index. These contracts trade on the exchange and have standard terms for lot size (no of shares) and expiry date.

2. Equity Rights

A rights issue allows existing shareholders to buy additional securities in a company. Existing security-holders have the privilege to buy a specified number of new securities from the firm at a specified price within a specified time.

Rights are short-term instruments that expire quickly, usually within 30-60 days of issuance. The exercise price of rights is always set below the current market price, and no commission is charged for their redemption.

Example

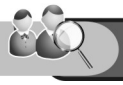
Ryan has 100 shares of GlobalCon, purchased at $50 per share. GlobalCon issues a 1:1 subscription rights issue at an offer price of $30. This implies Ryan has an option to subscribe for an additional 100 shares of common stock of the company at the offer price. Now, if he exercises his option, he would have to pay an additional $3,000 in order to acquire the shares, thus effectively bringing his average cost of acquisition for the 200 shares to $40 per share ((100*50+100*30)/200=40).

3. Warrants

Warrants allow existing security holders to purchase additional securities in a company made.

Warrants are long-term instruments allowing purchase at a discounted price, but they are typically issued with an exercise price above the current market price.

Warrants are usually offered in conjunction with fixed income securities as financial enticement to purchase a bond or preferred stock.



Example

For example, say Hardford Inc. issues bonds with warrants attached. Each bondholder gets a $1,000 face-value bond and the right to purchase 20 shares of Company XYZ stock at $90 per share over the next five years.

If Hardford Inc. shares rise to $140 during that time, the warrant holder could purchase the shares for $90 each, and immediately sell them for $140 on the open market, pocketing a profit of ($140 - $90) x 20 shares = $1,000.

This would allow Hardford Inc. to issue the bond paying a lower coupon (interest) rate.

---

4. Bond Futures

A bond future is a contractual obligation for the contract holder to purchase or sell a bond on a specified date at a predetermined price. A bond future can be bought in a futures exchange market and the prices and dates are determined at the time the future is purchased.

5. Interest Rate Future

An interest rate future is a contract between the buyer and seller agreeing to the future delivery of any interest-bearing asset. The interest rate future allows the buyer and seller to lock in the price of the interest-bearing asset for a future date.

6. Currency Future

A currency future is a futures contract to exchange one currency for another at a specified date in the future at a price (exchange rate) that is fixed on the purchase date.

On similar lines, the other Futures are:

Equity Futures	Underlying is equity share
Commodity Futures	Underlying is commodity
Sovereign Bond Futures	Underlying is sovereign bond
Index Futures	Underlying is index

Example

General Electric will be receiving 10 million Euros in four months from its German subsidiary. GE needs to swap these Euros for Dollars. GE can wait four months and see what happens in the currency markets or enter into a currency future contract.

The treasury desk at GE scouts the exchange and finds that the 4 month Euro dollar futures are quoting at 0.91. If the desk takes this contract, it would allow GE to buy Dollars and sell Euros at $ 0.91 / EUR (Total USD 9.1mn) at the end of 4 months.

If after 4 months hence, the Euro-Dollar exchange rate is

- $ 0.89/ EUR – GE has benefitted since it realized a better exchange rate
- $0.95 / EUR – GE will still receive $9.1m but will not receive the benefit of a more favourable exchange rate.

---

7. Listed Option

It is an option that is sold on a registered exchange, such as the Chicago Board Options Exchange (CBOE). Listed options cover securities such as common stocks, ETFs, market indices and commodities. All listed options have stated exercise prices and expiration dates. These are also known as "exchange-traded options".

8. Options on Futures

An option on a futures contract gives the holder the right to enter into a specified futures contract. If the option is exercised, the initial holder of the option would enter into the long side of the contract and would buy the underlying asset at the futures price. A short option on a futures contract lets an investor enter into a futures contract as the short who would be required to sell the underlying asset on the future date at the specified price.

9. Futures on Options

Futures on options contract give the holder opportunity to buy an option position at a future date at a specified price. At the expiry date, the holder of the long position will get the right buy/sell the underlying security at the specified price. On the other hand, the holder of the short position will get into an obligation to sell/buy the underlying security at the specified price.

Contracts are available for underlying Commodity, Currency, Equity Index, Interest Rate, Bonds etc.

Test Yourself 4

In a preferred stock or bond issue, Which of the following is added as a sweetener to the deal i.e. to issue the securities at lower coupon ?

A Warrant
B Rights
C Forward
D Additional Interest

Test Yourself 5

A listed option will be traded on which of the following exchanges?

A CBOE
B Nymex
C WSE
D Comex

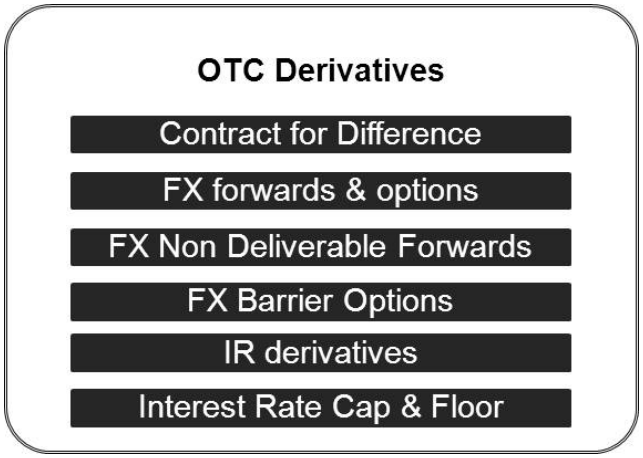
---

4. Know about OTC derivatives.

[Learning Outcome d]

OTC Derivatives

Diagram 3: OTC derivatives



1. Contract for Difference

A Contract for Difference (CFD) is a derivative that is based on the difference of the value of the underlying asset between current date and a future contracted date. If the difference is positive, the buyer of the contract gets the difference, else he pays the difference. The underlying asset maybe debt or equity

CFDs allow traders to take advantage of prices moving up (long positions) or prices moving down (short positions) on underlying financial instruments and are often used to speculate on those markets. CFDs are leveraged, which allows you to benefit without paying the full value of the asset. CFDs are OTC products.

2. FX forwards & options

It is a contract that grants the holder the right, but not the obligation, to buy or sell currency at a specified exchange rate during a specified period of time. Currency options are one of the best ways for corporations or individuals to hedge against adverse movements in exchange rates.

It is a binding contract in the foreign exchange market that locks in the exchange rate for the purchase or sale of a currency on a future date. Currency forward can be tailored to a particular amount and delivery period, unlike standardized currency futures, making them OTC. Currency forward settlement can either be on cash or a delivery basis, provided that the option is mutually acceptable.

3. FX Non Deliverable Forwards

FX NDFs are important for corporations seeking to hedge exposure to foreign currencies that are not internationally traded. All NDFs have a fixing date and a settlement date. The fixing date is the date at which the difference between the prevailing market exchange rate and the agreed upon exchange rate is calculated. The settlement date is the date by which the payment of the difference is due to the party receiving payment.

NDFs are commonly quoted for time periods of one month up to one year, and are normally quoted and settled in U.S. dollars.

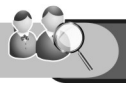
4. FX Barrier Options

FX Barrier option refers to an exotic derivative typically an option on the underlying currency asset whose price reaching the pre-set barrier level either springs the option into existence or extinguishes an already existing option.

Where the option springs into existence on the price of the underlying asset breaching a barrier, it is called "knock-in" option.

Where the option is extinguished on the price of the underlying asset breaching a barrier, it is called "knock-out" option.

Barrier options are always cheaper than a similar option without barrier.



Example

You are confident that the USD would strength against INR. However from the current level of INR 60/USD, you do not see USD strengthening beyond INR 65/USD. So you would buy a barrier option with a "Knock-out" price of INR 65/USD.

---

5. IR derivatives

An interest rate derivative is a derivative where the underlying asset has the right to pay or receive a notional amount of money at a given interest rate. These structures are popular for investors with customized cash flow needs or specific views on the interest rate movements (such as volatility movements or simple directional movements) and are therefore usually traded OTC.

6. Interest Rate Cap & Floor

These are a type of interest rate derivatives that are suitable for hedging the interest rate fluctuations. An interest rate cap is helps the investor to cap his interest outflow. In this the buyer receives payments at the end of each period only when floating interest rate exceeds the agreed strike price.

An example of a cap would be an agreement to receive a payment for each month the LIBOR rate exceeds 2.7%. Interest rate cap is suitable for a borrower who has to pay floating interest rate. If the interest rate exceeds 2.7%, any increase is compensated by the payout from the interest rate cap contract.

Similarly an interest rate floor contract is suitable for a lender who has to receive floating rate. In this option, the buyer receives payments at the end of each period in which the floating interest rate is below the agreed strike price.

For example a lender has given loan and will receive floating interest rate of LIBOR rate. But if he also buys a floor of 2.3%, he is assured of at least 2.3% on his lending i.e. a "floor" is set for his lending.

Test Yourself 6

What is a forex barrier option?

A A currency option that comes into existence or extinguishes once a pre-set level is reached
B A currency option that caps the maximum gain
C A currency option that caps the maximum loss
D A currency option that ensures there is no gain or loss

Test Yourself 7

What is an Interest Rate Cap?

A Buyer pays at the end of each period only when floating interest rate exceeds the agreed strike price.
B Buyer receives payments at the end of each period only when floating interest rate exceeds the agreed strike price.
C Buyer receives payments at the end of each period only when floating interest rate is equal to the agreed strike price.
D Buyer pays at the end of each period only when floating interest rate equals the agreed strike price.

---

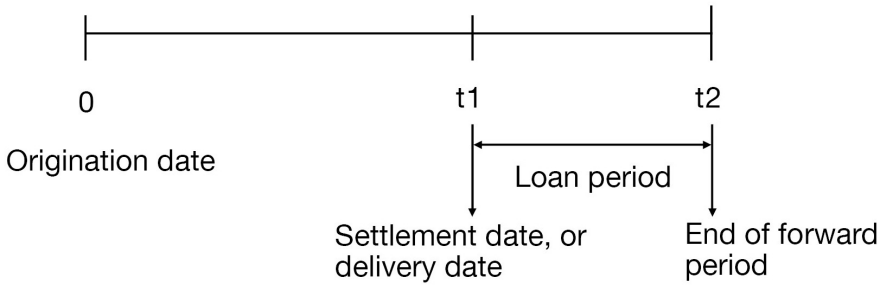
5. Learn about Forward Rate Agreement (FRA) contracts. [Learning Outcome e]

Forward Rate Agreement (FRA)

Forward Rate Agreements, or FRAs, allow corporation to lock in an interest rate today, for money it intends to lend or borrow in the future.

FRAs does not include actual loan. In this case only a notional amount is mentioned. The borrower (buyer) and the lender (seller) agree to pay each other the interest difference between the agreed-upon rate (Forward Rate) and the actual interest rate on the future date (Floating Rate). FRAs are cash-settled forward contract on interest rates. The cash settlement occurs on the day the loan is set to begin.

Diagram 4: Forward Rate Agreement



FRAs are used to hedge future interest rate exposure. The buyer hedges against the risk of rising interest rates, while the seller hedges against the risk of falling interest rates. Speculators use them for betting on future directional changes in interest rates.

FRAs are trade over the counter (OTC), allowing customization of both the notional loan amount and the FRA rate. FRAs are very similar to swaps except that in a FRA a payment is only made once at maturity. Instruments such as interest rate swap could be viewed as a chain of FRAs.

Example

Current month is May. Arthur & Co. needs $20,000,000 in August which it can repay back in October. In order to hedge against the risk that interest rates may be higher in August than it is in May, the company enters into an FRA with ABC at 4% FRA rate. In this case it would be a 3X5 FRA, meaning a 2 month loan to begin in 3 months, with a notional principal of $20,000,000. In August, if the interest rate rises to 5%, ABC would pay Arthur & Co the increased interest arising from the higher rate. If on the other hand interest rate falls to 3%, Arthur & Co would pay ABC.

Test Yourself 8

In a forward rate agreement, when is the exchange on money done between the two concerned parties?

A At the origination day
B On the day the loan begins
C At the end of the loan period
D No money is exchanged

6. Know about Swaps and their variations [Learning Outcome f]

Swaps

A swap agreement consists of two parties agreeing to exchange a set of future cash flows periodically for specified period of time. Hence each swap agreement has 2 sides – or 2 legs.

Usually, at the time the contract is initiated, at least one of these series of cash flows is determined by a random or uncertain variable, such as an interest rate, foreign exchange rate, equity price or commodity price.

Swaps are customized contracts that are traded in the over-the-counter (OTC) market between private parties.

Firms and financial institutions dominate the swaps market.

Because swaps occur on the OTC market, there is always the risk of a counterparty defaulting on the swap.

Total Return Swap

Total return swaps allow the party receiving the total return to gain exposure and benefit from a reference asset without actually having to own it.

Reference asset can be Equity, Bond, Index, Basket, Commodity, Govt Debt etc.

Diagram 5: Total Return Swap

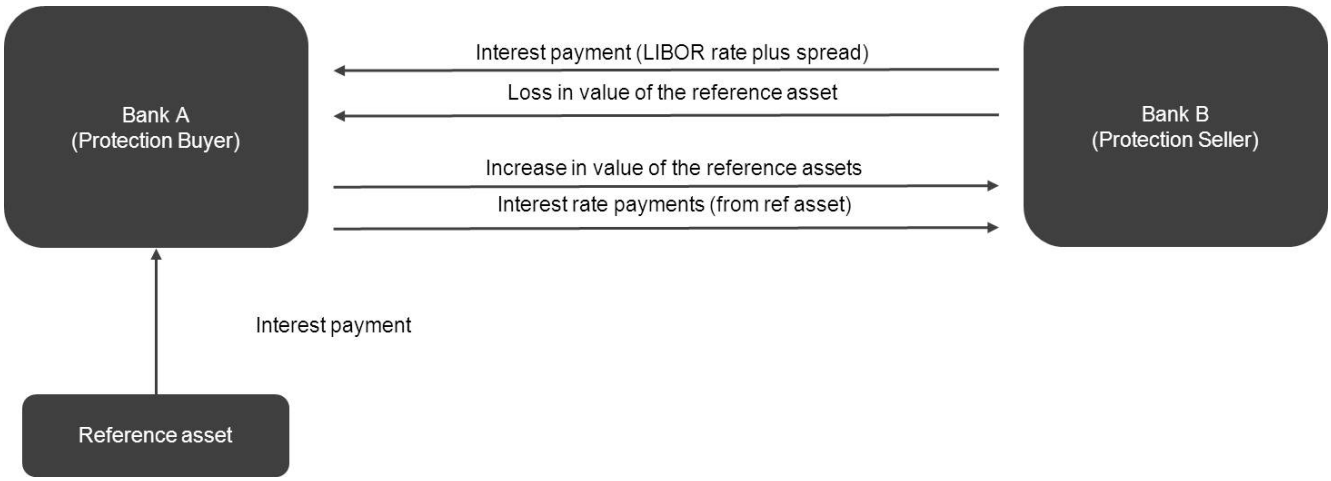
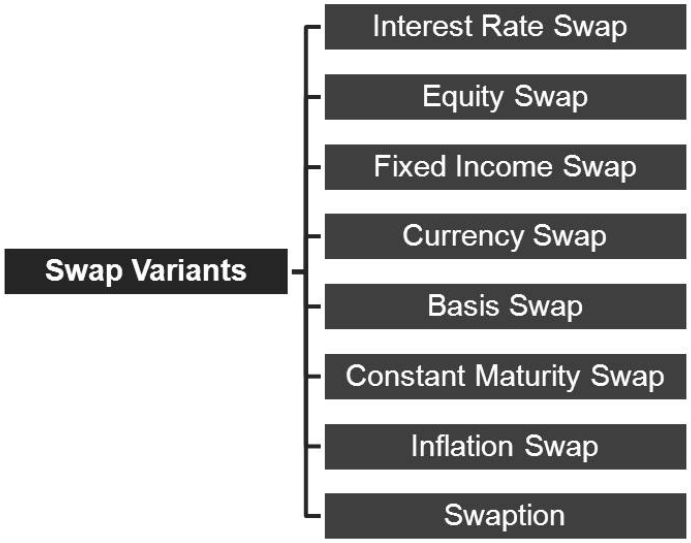


Diagram 6: Swap Variants



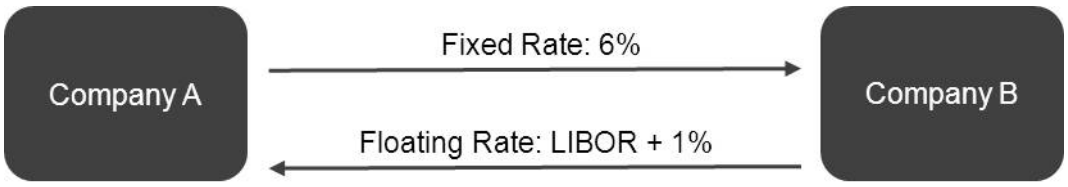
1. Interest Rate Swap

Simplest swap is a "plain vanilla" interest rate swap.

In this swap, Party A agrees to pay Party B a predetermined, fixed rate of interest on a notional principal on specific dates for a specified period of time.

Concurrently, Party B agrees to make payments based on a floating interest rate to Party A on that same notional principal on the same specified dates for the same specified time period.

Diagram 7: Interest Rate Swap



In a plain vanilla swap, the two cash flows are paid in the same currency. The specified payment dates are called settlement dates, and the time between are called settlement periods. Because swaps are customized contracts, interest payments may be made annually, quarterly, monthly, or at any other interval determined by the parties.

2. Equity Swap

In an equity swap, two parties agree to exchange a set of future cash flows periodically for specified period of time. Once leg of the equity swap is pegged to a floating rate such as LIBOR or is set as a fixed rate. The cash flows on the other leg are linked to the returns from a stock or a stock index. The leg linked to the stock or the stock index is referred to as the equity leg of the swap.

An equity swap can be of three types: the first leg will be a fixed rate, a floating rate or an equity or index return, while the other let will always be an equity or index return. So, an equity swap can have both the legs as returns from two different equities or equity indexes.

Example

Notional Principal: $100 million

Hedge Fund pays: Total returns on the S&P 500 Index

ABC pays: Fixed 5%

Payments to be made at the end of every six months, that is, 30th June and 31st December

The swap has a maturity of 2 years.

Index today: 2000

S&P 500 Index at 30 June: 2100

S&P 500 Index at 31 December: 2050

Continued on the next page

Answer

30 June:

Index at 2100

Return on index = 2100/2000 -1 = 5%

Hedge fund pays 5% to ABC and receives 6% back. So on net basis hedge fund benefits, getting 1% i.e. 1% * $100m = $1m from ABC

31 December:

Index at 2050

Return on index = 2050/2100 -1 = -2.38%

So hedge pays noting to ABC. In fact ABC pays (5% + 2.38% = 7.38%) to Hedge fund.
Total payment of 7.38% * $100m = $7.38m

---

3. Fixed Income Swap

In a Fixed Income swap, two parties agree to exchange a set of future cash flows periodically for specified period of time. Once leg of the fixed income swap is pegged to a floating rate such as LIBOR or is set as a fixed rate. The cash flows on the other leg are linked to the returns from a debt security or debt index. The leg linked to the debt security or debt index is referred to as the fixed income leg of the swap.

4. Currency Swap

Currency swap involves exchanging both principal and fixed interest payments on a loan in one currency for principal and fixed interest payments on a similar loan in another currency.

Unlike an interest rate swap, the parties to a currency swap will exchange principal amounts at the beginning and end of the swap.

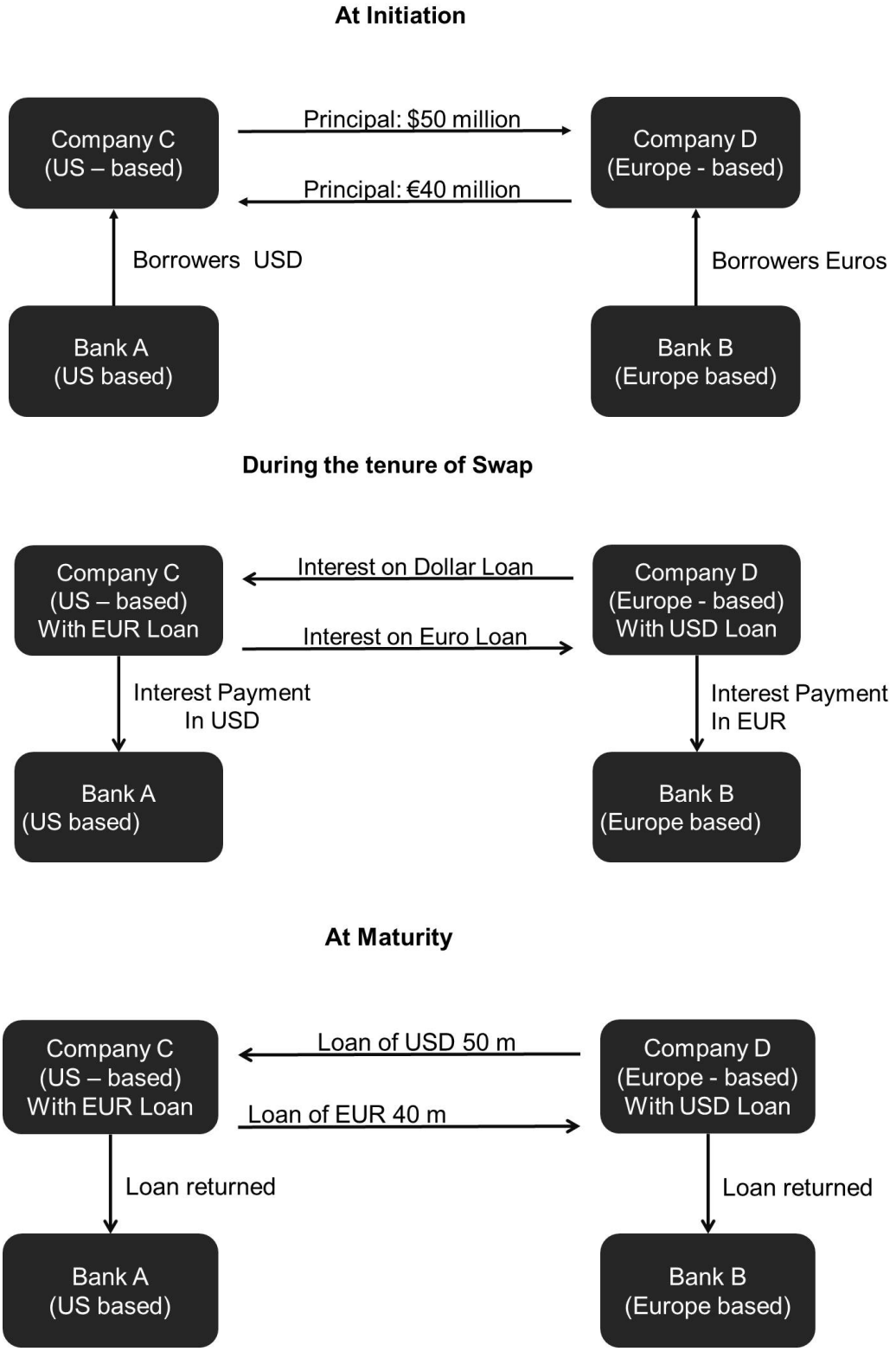
The two specified principal amounts are set so as to be approximately equal to one another, given the exchange rate at the time the swap is initiated.

Over the period of the swap, the interest payments are exchanged as they are due.

At the end of the period, the original principal amounts are swapped back.

Raising debt in foreign country is generally expensive. Instead debt can be raised competitively in own domestic market. The local debt raised can then be exchanged with debt of a company that is local to the foreign country.

Diagram 8: Currency swap



Basis Swap

A basis swap is a floating-floating interest rate swap. A simple example is a swap of 1-month USD Libor for 6-month USD Libor. Indexes may have different payment frequencies, as in a 1-month Libor for 3-month Libor swap. One solution is to have respective sides of the swap make payments according to their own schedules. These swaps are used to customize exposures to specific points on the yield curve. More common are basis swaps between two floating indexes from different segments of the money market.

Basis swaps are less common outside the United States where there are fewer floating indexes to swap between.

The 1-month Libor side would make monthly payments and the 3-month Libor side would make quarterly payments. Another alternative is to accumulate the more frequent payments with compound interest. In this case, 1-month Libor payments would be accumulated and paid quarterly to match the quarterly payments of the 3-month Libor side.

5. Constant Maturity Swap

A Constant Maturity Swap (CMS) is a floating/floating interest rate swap. In many ways, it is similar to a Basis Swap, in which you agree to pay a notional floating rate based on one reference rate (for example, quarterly LIBOR) while receiving a floating rate with a different frequency (for example, semi-annual LIBOR).

The difference with a CMS is that the two rates are on such a different basis, they are not even in the same market. A common CMS would be to swap a quarterly or semi-annual LIBOR rate against a two, three or five-year interest rate swap. The LIBOR rate would be reset on each swap roll, as would the swap. The difference is in the tenors of the instruments – while the LIBOR swap rate applies only until the next rate set date, the swap rate still may have years to run.

6. Inflation Swap

Investors use inflation swaps to hedge inflation risk. It is used to transfer inflation risk from one party to another through an exchange of cash flows. In an inflation swap, one party pays a fixed rate on a notional principal amount, while the other party pays a floating rate linked to an inflation index, such as the Consumer Price Index (CPI).

Example

George is worried about the fact that the fixed interest received from the bank deposit will not be sufficient to cover the cash payment that will increase with inflation. He would like to have a cash flow that is adjusted for inflation. He decided to enter into an inflation swap where he pays the fixed rate and receives the floating rate adjusted to inflation.

---

7. Swaption

A swaption gives its owner the right but not the obligation to enter into an interest rate swap (the terms and conditions of which are set on the trade date) on a specified date in the future. In return for this right, the buyer of the swaption pays a premium to the seller.

A swaption hedges the buyer against downside risk, as well as letting the buyer take advantage of any upside benefits. That is, it gives the buyer the benefit of the agreed upon rate if it is more favorable than the current market rate, with the flexibility of being able to enter into the current market swap rate if it is preferable.

Let's see how this would work.

Bill Corporation has a borrowing facility maturing in six months time that will require re-financing. The annual budget process for Bill has factored in a maximum interest rate and Bill is concerned that, prior to rollover date, rates may rise above this rate. Bill elects to take out a Swaption. If interest rates have risen above the agreed Swap rate when the re-financing is due, Bill would proceed with the Swap. Should interest rates on rollover date be below the Swap rate they would not proceed with the Swap and instead borrow at the prevailing interest rate.

The various types of swaptions include

- Corporate Debt TR Swaption – Option to enter a total return swap on corporate debt
- Government Debt TR Swaption - Option to enter a total return swap on US government debt
- IR Swaptions - Option to enter a interest rate swap
- Notional Swaption - Option to enter a swap based on notional amount
- Sovereign Debt TR Swaption - Option to enter a total return swap on Sovereign debt

Test Yourself 9

What is a Swaption?

A Right to enter into an swap agreement
B Obligation to enter into an swap agreement
C Right and obligation to enter into an swap agreement
D None of the above

---

7. Know about OTC contracts.

[Learning Outcome g]

OTC Contracts

1. Asset Swaption

An ASCOT, or Asset Swapped Convertible Option Transaction, is an option on a convertible bond used to separate the cash flows of the underlying bond from the equity option embedded in the convertible. Buyers of ASCOTs want exposure to the rate and credit risks of the convert issuer. Seller of Ascot retains exposure to the equity option.

2. OTC Equity Option

OTC equity options are customized option contracts that can be applied to any equity index, basket of stocks, or an individual stock. OTC equity derivatives offer investors investment opportunities that are simply not available in the listed market or cash market.

The problem with over-the-counter options is that they lack the protection of an exchange or clearinghouse. This is especially dangerous if OTC options are being used to hedge exposure to some risky asset or security.

The various options available under OTC Equity Option are

- OTC Equity Option - Basket
- OTC Equity Option - Index
- OTC Equity Option - Single Name

3. Structured note

A structured note is a hybrid security that includes several financial products, typically a stock or bond plus a derivative.

A simple example would be a five-year bond tied together with an option contract. The addition of the option contract changes the security's risk/return profile to make it more tailored to an investor's comfort zone. This makes it possible to invest in an asset class that would otherwise be considered too risky.

Test Yourself 10

Why is OTC equity options traded?

A Less liquidity for listed options
B Good to have an OTC product since it results in higher profits
C Cheaper to trade in OTC markets
D Investors are looking for specific investment opportunities

---

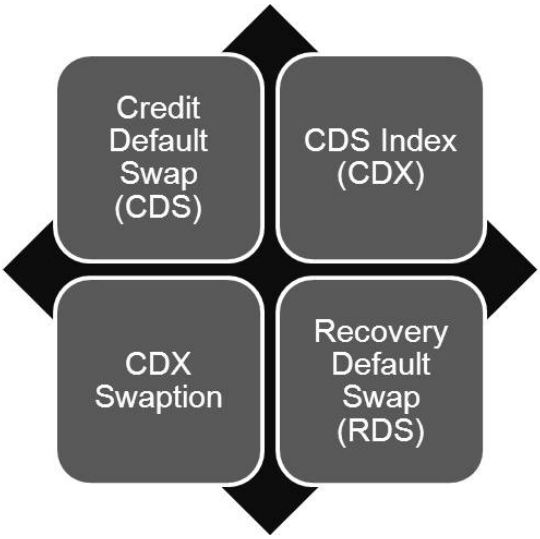
8. Understand the importance of credit derivatives.

[Learning Outcome h]

Credit Derivatives

A credit derivative is an OTC derivative designed to transfer credit risk from one party to another. Most credit derivatives entail two sources of credit exposure: one from the reference asset and the other from possible default by the counterparty to the transaction.

Diagram 9: Credit derivatives

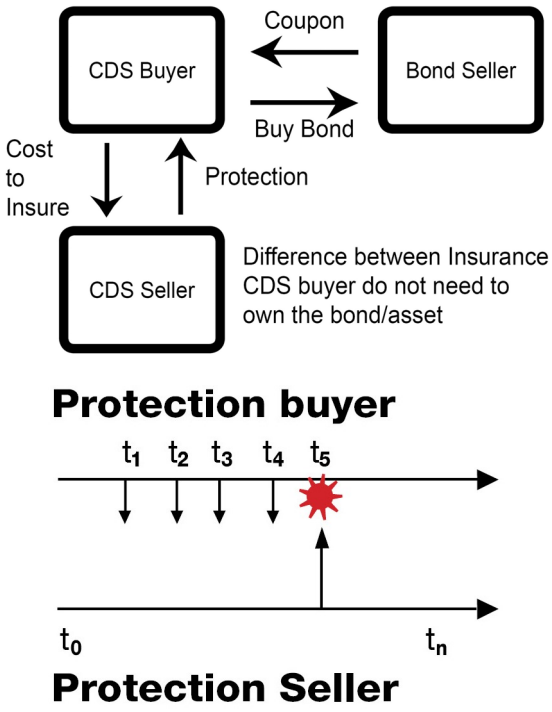


1. Credit Default Swap (CDS)

A CDS is an agreement between two parties in which a protection buying party pays a premium to a protection selling party; in return for this premium the protection selling party will pay the protection buying party a specified notional amount if a specified credit event takes place in a specified time period affecting a specific debt instrument (called the reference entity).

Credit events include bankruptcy, bond default, or debt restructuring.

Diagram 10: Credit Default Swap



Physical CDS Settlement: CDS buyer delivers the referenced entity (ex. transfers bond ownership) to the CDS seller and the CDS seller pays the notional amount to the CDS buyer.

Cash CDS Settlement: CDS seller pays the net difference between the notional amount and the market value of the referenced entity (ex. the defaulted bond may be trading for some small fraction of par on the market).
Advantages of CDS

Credit default swaps provide a method for investors to independently manage credit risk and interest rate risk on fixed income securities.

CDS allow investors to profit from credit events without actually holding a short position in the underlying security.

The fundamental difference between a credit default swap and a total return swap is the fact that the credit default swap provides protection against specific credit events. The total return swap provides protection against loss of value irrespective of cause—a default, market sentiment causing credit spreads to widen, etc.

2. CDS Index (CDX)

A credit default swap index is a credit derivative used to hedge credit risk or to take a position on a basket of credit entities.

Unlike a credit default swap, which is an over the counter credit derivative, a credit default swap index is a completely standardised credit security and may therefore be more liquid and trade at a smaller bid-offer spread. This means that it can be cheaper to hedge a portfolio of credit default swaps or bonds with a CDS index than it would be to buy many single name CDS to achieve a similar effect.

Credit-default swap indexes are benchmarks for protecting investors owning bonds against default, and traders use them to speculate on changes in credit quality.

An index of loan-only CDS is called loan credit default swap index (LCDX). The LCDX is an index of 100 companies that have unsecured loans. Purchasing the LCDX provides greater diversification than purchasing individual credit default swaps.

3. CDX Swaption

Credit default swaption or credit default option is an option to buy protection (payer option) or sell protection (receiver option) as a credit default swap on a specific reference credit with a specific maturity.

The option is usually European, exercisable only at one date in the future at a specific strike price defined as a coupon on the credit default swap.

4. Recovery Default Swap (RDS)

RDS contracts are used to hedge against the uncertainty of recovery in default.

They are related to credit default swaps, and reference a bond issuance as its underlying. CDS provides protection against default.

After default event, the liability holders have the first claim on the firm's assets. If the assets are less than loan (say 40% of loan amount), it is possible to recover 40% of the value. However with risky assets, there is possible uncertainty in the asset value from the time of default to recovery payout. Recovery default swap is used to provide a hedge against such uncertainty of recovery in default.

Because the swap only has value during a default event, the main market in RDS involves bonds that pose a high risk of default.

Test Yourself 11

A credit default swap can be considered as _____ against counterparty default.

A Assurance
B Insurance
C Bet
D Gift

Test Yourself 12

When are recovery default swaps useful?

A After default
B During default
C Before Default
D Always

---

9. Know about the role played by collateral in financial transactions.
[Learning Outcome i]

Collateral

Collateral is mostly used in over the counter (OTC) trades as a security against the possibility of payment default by counterparty. Collateral is accepted to satisfy margin requirements and guarantee funds.

Heightened counterparty risk from the wide use of derivatives, securitization of asset pools, and leverage has increased the need for collateral management. Collateral management is a very complex process with interrelated functions involving multiple parties.

The collateral list includes

a) Cash (AUD,CAD,CHF,EUR,DKK,GBP,JPY,NOK,SEK and USD)

b) Selected Sovereign Debt (US, UK, Germany etc)

c) Gold

Securities are revalued every day and subject to prudent haircuts to minimise the risk of loss of value in the event of a default by a clearing member.

Currency haircuts are applied when liabilities in one currency are covered by collateral assets in another currency.

Non-cash collateral is also subject to concentration and diversification limit.

Test Yourself 13

Non-cash collateral is subjected to

A Zero haircut
B Diversification limit
C No concentration limit
D Cash limits

Summary

- Derivative is an arrangement or product (such as a future, option, or warrant) whose value derives from and is dependent on the value of an underlying asset, such as a commodity, currency, or security
- Forwards are OTC-traded derivatives with customized terms and features.
- Futures are exchange-traded derivatives with standardized terms.
- Option represents right available to holder but not obligation to enter a contract. Options offer a non-linear risk reward i.e. limited upside potential coupled with unlimited downside and vice-versa. Options can be either OTC or exchange traded.
- Equity derivatives include equity rights, warrants, Futures, forwards, options etc.
- Futures can have different asset classes as underlying
- Options can have further combinations like options on future and futures on options
- OTC contracts include Contract for Difference, FX forwards & options, FX Non Deliverable Forwards, FX Barrier Options, Interest rate derivatives with floor and cap etc.
- Forward Rate Agreements, or FRAs, allow corporation to lock in an interest rate today, for money it intends to lend or borrow in the future.
- Swap agreement consists of two parties agreeing to exchange a set of future cash flows periodically for specified period of time. Investors use swap to customize cash flows as per their requirements
- Total return swaps allow the party receiving the total return to gain exposure and benefit from a reference asset without actually having to own it.
- Other types of swaps include Interest rate swap, currency swap, equity swap, basis swap, constant maturity swap etc.
- Swaption gives its owner the right but not the obligation to enter into a swap agreement on a specified date in the future.
- A credit derivative is an OTC derivative designed to transfer credit risk from one party to another. Credit events include bankruptcy, bond default, or debt restructuring.
- RDS contracts are used to hedge against the uncertainty of recovery in default.
- Collateral is mostly used in over the counter (OTC) trades as a security against the possibility of payment default by counterparty.

Answers to Test Yourself

Answer to TY 1

The correct option is **B**.

Futures are exchange trade products. Forwards are OTC. Options can be either exchange or OTC products.

Answer to TY 2

The correct option is **C**.

On the last day, on the options position, Ryan has a $10 gain. However after adjusting the $10 premium paid, the net payoff is zero. So no gain no loss.

Answer to TY 3

The correct option is **C.**

By selling a forward, Mary will benefit if the market goes down.

Answer to TY 4

The correct option is **A.**

Warrant is the option that allows the holder to buy specific number of equity shares at a specified price. This allows the issuer to reduce the coupon to be paid on the bond.

Answer to TY 5

The correct option is **A**.

Chicago Board of Option Exchange (CBOE) is the exchange for trading options.

Answer to TY 6

The correct option is **A.**

FX Barrier option refers to an exotic derivative typically an option on the underlying currency asset whose price reaching the pre-set barrier level either springs the option into existence or extinguishes an already existing option.

Answer to TY 7

The correct option is **B.**

Buyer receives payments at the end of each period only when floating interest rate exceeds the agreed strike price.

Answer to TY 8

The correct option is **B.**

The exchange of cash happens on the day the loan is set to begin i.e. settlement day

Answer to TY 9

The correct option is **A.**

Swaption gives the holder a right to enter into a swap agreement

Answer to TY 10

The correct option is **D.**

OTC equity derivatives offer investors investment opportunities that are simply not available in the listed market or cash market.

Answer to TY 11

The correct option is **B.**

CDS is an insurance against counterparty default.

Answer to TY 12

The correct option is **A.**

RDS is useful after the default event has happened

Answer to TY 13

The correct option is **B.**

Non-cash collateral is subjected to diversification limit.

Self Examination Questions

Question 1

Which of the following is NOT an option traded in the market?

A Put Option
B Call Option
C Swaption
D Caption

Question 2

Which of the following is a characteristic of Forwards?

A They are exchange traded
B They trade in standardized lot sizes
C They are OTC products
D No customizations are allowed for forwards

Question 3

In a forward rate agreement, when is the principal on the loan exchanged between the two concerned parties?

A At the origination day
B On the day the loan begins
C At the end of the loan period
D No principal is exchanged

Question 4

What is an Interest Rate Cap?

A Buyer pays at the end of each period only when floating interest rate exceeds the agreed strike price.
B Buyer receives payments at the end of each period only when floating interest rate exceeds the agreed strike price.
C Buyer receives payments at the end of each period only when floating interest rate is equal to the agreed strike price.
D Buyer pays at the end of each period only when floating interest rate equals the agreed strike price.

Question 5

Mayers & Co enters into an interest rate swap agreement with Banco Bank. Mayers agrees to pay fixed 5% and receive LIBOR + 2% from Banco. At end of the period LIBOR is 4%. What is it net payment received by Mayers. Assume the principal amount is $ 10 million

A Mayers pays $ 0.5mn to Banco
B Mayers receives $ 0.6mn from Banco
C Mayers pays $ 0.1mn to Banco
D Mayers receives $ 0.1mn from Banco

Question 6

A currency swap is includes which of the following?

A Exchange both principal and interest
B Based on Notional Amount
C Only Interest cash flows are exchanged
D Only Principal is exchanged

Question 7

What is the advantage of Credit default Swap?

A Credit default swaps provide a method for investors to manage operational risk
B Profit from credit events by holding a short position in the owned security.
C Helps investors in the recovery process
D Credit default swaps provide a method for investors to manage credit risk

Question 8

What is a characteristic of a European Option?

A It can be exercised anytime during the period
B It can be exercised only at the end of the period
C It can be exercised at any price
D It can be exercised only in the beginning

Question 9

What is recovery default swap (RDS)?

A Hedge against the default
B Hedge against bankruptcy
C Hedge against market movements
D Hedge against the uncertainty of recovery in default

Question 10

Which of the following is NOT used as collateral?

A Gold
B Cash
C US Treasury
D Argentine Treasury

Answers to Self Examination Questions

Answer to SEQ 1

The correct option is **D**.

Caption is not an option traded in the market.

Answer to SEQ 2

The correct option is **C**.

Forwards are OTC products traded in the market.

Answer to SEQ 3

The correct option is **D.**

In a FRA, the contract is based on notional principle. There is no exchange of the principal amount.

Answer to SEQ 4

The correct option is **B**.

Buyer receives payments at the end of each period only when floating interest rate exceeds the agreed strike price.

Answer to SEQ 5

The correct option is **D.**

Mayers pays 5% but receives (LIBOR+2%) i.e. 6% from Banco. So on a net basis, Mayer receives 1% i.e. 0.1 mn from Banco

Answer to SEQ 6

The correct option is **A.**

It includes principal and interest exchange

Answer to SEQ 7

The correct option is **D.**

Credit risk is managed for investors. Investors benefit by holding short position without actually owning the asset.

Answer to SEQ 8

The correct option is **A.**

An European option can be exercised only at the end of the period. American option can be exercised anytime during the life of the option.

Answer to SEQ 9

The correct option is **D.**

RDS is a hedge against the uncertainty of recovery in default

Answer to SEQ 10

The correct option is **D**.

Only select few sovereign bonds are used as collateral like US, UK, Germany etc.

TRADE LIFE CYCLE

4

STUDY GUIDE 4: TRADE LIFE CYCLE

Get Through Intro

Trade refers to a legal contract between two parties to exchange a specified number of securities for a specified sum of money. The seller must deliver the securities sold to buyer and at the same time the buyer must pay the agreed purchase price on the agreed value date. During this entire transaction, the trade goes through a number of steps, where different players carry out their designated roles. Some participants participate as directed by regulation while other participants take part to ease the entire process, including mitigation of risk.

Learning Outcomes

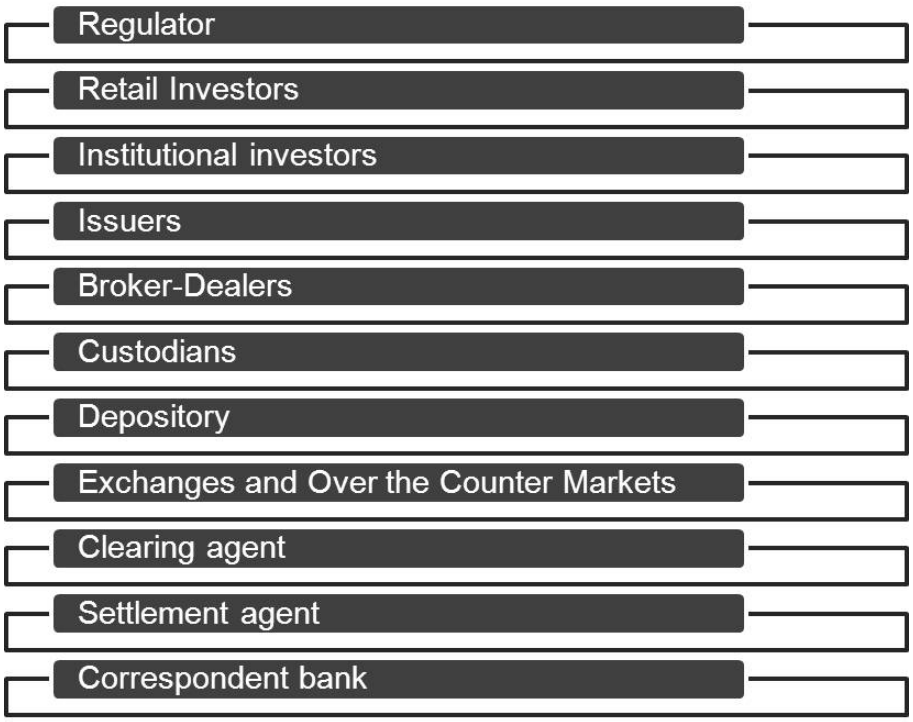
a) Identify the participants in the trade life cycle and understand their role
b) Discuss the overview of the trade life cycle
c) Understand how the broker responsibilities are divided across front, middle and back office
d) Understand the key stages of the trade life cycle
e) Know about the key points for derivative settlement from BO perspective
f) Understand the concept and advantages of Straight Through Processing (STP)

1. Identify the participants in the trade life cycle and understand their role. [Learning Outcome a]

Participants in the trade life cycle

When a trade happens between two parties, they agree on the price and other modalities for exchanging of money. However to ensure a smooth transaction, lot of information flow has to happen in the background. This involves interaction between numerous players. Let us first look at the various players involved.

Diagram 1: Participants in the trade life cycle



1. Regulator

They create the legal environment within which all the procedures are carried out. The regulatory authorities also sometimes provide clearance and settlement services, mainly in the case of government securities.

2. Retail Investors

Retail investors invest their savings with the objective of earning an attractive return on their investment. They normally trade in securities markets through an intermediary, broker/dealer or an institutional investor.

3. Institutional investors

Institutional investors are mainly banks, mutual funds, pension funds, and insurance companies. These investors carry out transactions of high volume and high value.

Both retail and institutional investors are buyers, sellers or holders of securities and funds. However, they do not participate directly in the clearance and settlement arrangements.

4. Issuers

Issuers are institutions that seek financing via the securities markets; through debt or equity. They are normally classified as public or private issuers.

5. Broker-Dealers

Broker-Dealers undertake the primary intermediation role in securities market trading. As a result, they have a primary role in the clearance and settlement procedures.

6. Custodians

Custodians are entities that undertake the safekeeping of securities and other financial instruments on behalf of others. They may also provide other services such as clearance and settlement, securities lending, etc. A global custodian provides those services in respect of securities traded and settled not only in the country where the custodian is located but also in other countries throughout the world.

7. Depository

Central Securities Depositories (CSDs) provide facilities for holding securities. In addition to providing this safekeeping role, a CSD may provide trade comparison services, and clearing and settlement services.

8. Exchanges and Over the Counter Markets

Exchanges and Over the Counter (OTC) markets are the centers for trading activity carried out by broker-dealers. Prices are determined by matching or by negotiation (through telephone communications, computer-controlled networks of quotation terminals, etc.) between buying and selling broker-dealers in the case of OTC markets.

9. Clearing agent

The clearing agent is the entity that carries out the procedures of trade capture, matching, confirmation and calculation of obligations relating to securities transfer instructions prior to settlement. These functions are normally provided by CSDs together with the depository function or by the exchange where the trading takes place.

10. Settlement agent

A settlement agent manages the settlement process, determines the settlement positions and monitors the exchange of securities and payments. Again, this function is sometimes provided by CSDs or exchanges.

11. Correspondent bank

A correspondent bank provides payments and other services to another bank. Such services are primarily provided across international boundaries.

Test Yourself 1

A legal contract between two parties to exchange a number of shares for money is called _____.

A OTC
B Order
C Trade
D Trader

Test Yourself 2

Which of the following is NOT an institutional investor?

A Banks
B Mutual funds
C Pension funds
D Individuals

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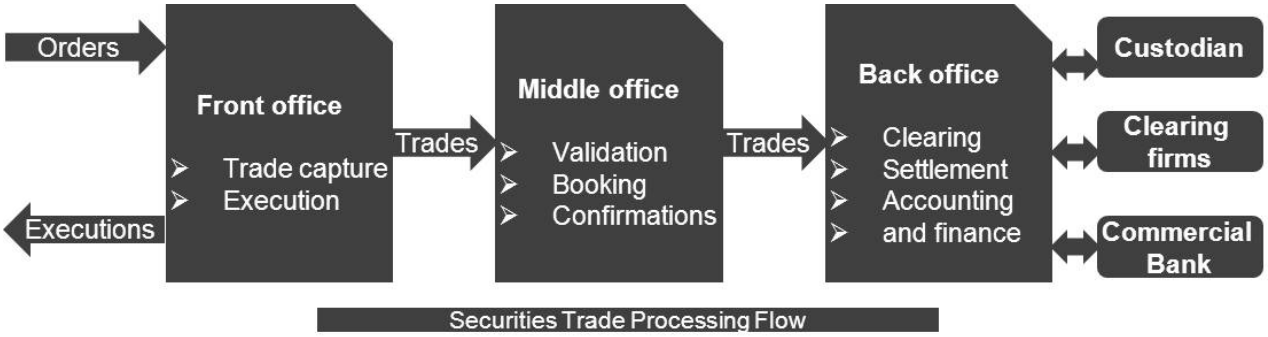
2. Discuss the overview of the trade life cycle.

[Learning Outcome b]

Overview of the trade life cycle

Diagram 2: Trade life cycle



The above diagram captures the essence of the trade life cycle flow. The broker is responsible for the execution of the trade on behalf of its client. The broker in turn co-ordinates with various external entities to ensure that the transaction is completed. We have already seen the various external entities involved. We will now look at how the broker is organized internally to handle the transaction flow.

The broker

Functions carried out by the broker are logically broken up into three parts:

- Front office includes sales personnel and corporate finance
- Middle office manages risk and supports the front office desk
- Back office provides administrative and support services

Test Yourself 3

A custodian provides which of the following services?

A Clearance
B Settlement
C Securities lending
D All of the above

---

3. Understand how the broker responsibilities are divided across front, middle and back office

[Learning Outcome c]

Role of the front, middle, back office

Let us look at the role of front, middle and back office in detail

1. Front Office

The front office is the client facing arm of the broker. It includes

- Sales people in the capital markets
- Traders in the capital markets
- Corporate finance bankers
- Research analysts

Sales and trading are the functions that interact with the client when the client has to execute trade. The sales person is a subject matter expert in a particular domain (Oil & Gas, Retail, Pharma etc.). He /she interacts with the client, giving trading ideas to the client, backed by inputs from the trading and research desks.

Once the client decides to execute a trade, he / she will route the order through the sales person or directly reach out the trader. The trader is responsible to ensure that the client gets the best rate for this trade.

Apart from managing trades for the client, the trader is also responsible for managing the trades of the firm. This is called **proprietary trading**, where the firm invests its own money in trades. The trader has to ensure that there is no conflict of interest and that the client does not lose best execution rate at the expense of the firm. Trader has to constantly monitor the markets to gauge the pulse of the market through the trading day.

The **structuring desk** is responsible for introducing new product ideas. They scout the market and gauge the market mood for the product innovations. These product clients are then marketed to clients through the sales team. The sales team, based on feedback from the clients, also makes suggestions on the client requirements. Based on such specific requirements, the structuring desk also devises customized products for the clients.

The **research team** carries out detailed analysis of companies and markets. Based on this analysis, they recommend buying or selling of securities. These research ideas are provided to the clients through the sales team. Research teams are organized along different sectors (Banks, Retail, Metals & Mining etc.) or it can be Macro Strategy (Across the market, without any particular sector focused).

Research that is focused on short term trading and based on trends in the price movement is called **technical analysis**. In contrast the **fundamental analysts** study the financial statements of the company and recommend securities on a long term basis.

2. Middle Office

The middle office functions with the following objectives:

- Assist the traders of the front office
- Risk monitoring

The traders are busy talking to the clients and monitoring the markets during the trading day. The middle office steps in to help the trader manage the entire administrative activities during the trade execution. On behalf of the trader, the MO updates the status of the trades back to the clients, creates reports for the clients and regulators, interacts with the back office teams etc.

At the same time, the MO team is also responsible for risk monitoring. This includes activities like

- Ensure that legal documents with external parties are optimally structured

- Monitor the positional limits of the traders i.e. each trader is assigned specific capital that limits the amount a trading a trader can do. MO keeps track of the trades executed vis-à-vis this limit and flags off if there is any breach

- Manage the credit and market risk. The firm defines broad guidelines to ensure that traders do not go overboard and take up risky positions. The MO independently monitors the traders based on these guidelines. Its provides reports of these to the legal and compliance teams

- Interact with the back office team to ensure that the trade settlement process is smooth, rectify any trade errors, manage the operational risk in the process etc.

3. Back Office

Diagram 3: Back office support functions

The back office includes all the support functions that help in the day to day activities of the broker. These include teams like

a) Operations
b) Information Technology
c) Legal & compliance
d) Finance
e) Risk management
f) Production team

a) Operations

The operations team is directly responsible for activities around the trade life cycle settlement. Once a trade is executed, the settlement has to complete with the prescribed time (T+1, T+2 etc.). The team is organized around various tasks that are required to complete the settlement.

Pre-trade

Even before the actual trade happens, the clients are required to be on-boarded. Typically before any trade with counterparty is initiated, regulations require a formal background check to be carried out for the counterparty. This is known as the "Know your Customer" or KYC compliance. As part of this process, client details are available which are then recorded in the client database. Details also include information like bank account for trading with the broker, depository where the securities need to be delivered and other details important from trade settlement standpoint. These are called Standard Settlement Instruction (SSI) setup.

If an OTC product is likely to be traded, the legal team of the 2 involved parties has to exchange number of legal documentation details. These include details around the characteristics of the OTC product and details of how the settlement will be carried out. After agreeing on the terms of the trade, the OTC product is setup in the system.

Post-trade

Once the trade is executed, the MO passes the execution details to the operations team. MO will include as many details as possible to enable the BO team to carry out smooth settlement process. Once the operations team gets the details, the activities carried out are

- Trades Verification
- Trade Confirmation
- Trade Clearing and Settlement
- Cash Reconciliations

In the trade settlement process, the operations team ensures that the buyer gets the security and the seller gets the money. These changes have to be reflected in the depository and bank accounts of the respective parties.

On-going Basis

In order to facilitate rapid, error-free completion of financial transactions across multiple geographical markets, there is a need to have standard data that define and describe such transactions. For example for a sale of a stock in exchange for cash would require information like standard label for the underlying security (e.g., ISIN), seller identity, the buyer, the broker-dealer(s), the price, etc. Operations team has to ensure that the reference data is accurate and covers all relevant particulars with multiple dependencies, entities, and contingencies. This is often referred to as reference data management (RDM).

For a trade that has 2 legs i.e. a repo transaction, after the first leg is settled, the second leg will be settled after some time. In between the 2 legs, the operations team has to continuously monitor the trade. If the party is holding collateral (having lent the money), the valuation of the collateral is carried out to ensure it is still covering the lent out amount.

If the firm buying securities is an asset management company like mutual fund, the operations team is also responsible for daily NAV calculation. On occasions the NAV calculation activity can also be outsourced to a third party.

The operations team requires staff with strong operational skills, including strong numeric skills, attention to detail, an ability to follow procedures and identify quickly when exceptions have occurred. More senior settlements staff will need negotiation skills, to manage exceptions with counterparties, and be able to stand up to front office staff, who typically enjoy a higher status in the organization.

b) Information Technology

During the day-to-day activities of the broker, vast amount of data flows across various entities. With such large volumes of data, there is always a likelihood of errors creeping into the transaction handling. Improved use of technology resources helps in reducing the incidence of these errors. Thus technology serves as backbone of the trading infrastructure.

The various systems that support the front, middle and back office are

i. Instrument database

FO and BO have different requirements on the ids of instruments. For example FO use trade symbols like tickers, while BO needs codes like ISIN, SEDOL, etc. for various reporting purpose.

Different markets have different data model. For example the US has multi-listed model, where same instrument can be traded on different exchange with the same ticker, but different RIC code. Business needs to decide in what granularity it wants to use the data and store them in FO/BO systems.

The price information required by the FO/BO systems vary. FO generally needs real-time price feed while BO generally needs EOD closing price for credit control.

The instrument database should also be able to capture the differences in the different trading calendars. Similarly the settlement calendar needs to be captured.

ii. Client Database

Details of the client need to be stored. This includes client confirmation details at organizational-level and/or fund-level, such as address, telephone, representative, fax, email, etc. Standard Settlement Instructions (SSI) for each client at organization/fund level are also stored.

The calculations of brokerage / fees should be automated to reduce the risk of any calculation errors. The various charges include client specific commission, market specific charges etc.

c) Legal & Compliance

The legal and compliance team is responsible for setting the transaction policies. These govern all the activities of the FO/MO and BO. Principally the MO is responsible for implementing these policies.
Legal team is also involved in completing documentation during the client on-boarding process. The BO team works in tandem with the legal team to meet the KYC norms.

d) Finance

The finance team keeps track of the profit and loss for each trader. Each trader is assigned a specific limit upto which he can trade, which is decided by the risk assigned to a trader's portfolio. Finance team plays a key role in the providing inputs to the risk management team. At a firm level, they keep track of firm profit and loss. They are also responsible for the cash management function.

e) Risk Management

The risk management team independently assesses the risk that the firm bears on account of its activities. The team monitors the credit, market and operational risk. It defines the various risk limits that serves as inputs to the MO team while monitoring the trader's positions.

f) Production Team

The front office requires support for printing and production of client presentation. The various marketing material / presentation have to look pretty and consistent with the firm's style. The production team handles these activities on behalf of the front office.

Test Yourself 4

What are the research teams responsible for?

A Interacts with the client, execute the trade for clients
B Interacts with the client, giving trading and product ideas to the clients
C Introduce new product Ideas
D Generate trading ideas through company research

Test Yourself 5

What time intervals does the Front office require price feeds?

A End of Day
B Beginning of Day
C Real time
D They never need that information

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4. Understand the key stages of the trade life cycle.

[Learning Outcome d]

Key stages of trade life cycle

Diagram 2: Key stages of trade lifecycle

1. Order Capture

Orders are originated directly (Client connectivity to Broker) or routed through Sales Traders.

Sales traders are responsible for client communications including marketing of new securities; provide research inputs to client etc. They also provide market information to other departments within the firm.

On receiving the orders from clients, the order is sent to the trader for execution. This order placement is done through an Order Management System (OMS).

2. Order Validation

The MO office is entrusted with the task of confirming the order details with the counterparty. This is to ensure that the trade details available in the OMS are correct.

3. Trade Execution

Traders are responsible for execution of the orders though Exchange, internal inventory or OTC. They report back the execution status to the sales trader or directly to the client, depending on the mode of order placement.

Traders are also responsible for reconciling the executed trades with the orders, along with their types. They need to be aware of the various industry regulations and compliance rules while executing the trade.

4. Trade analytics

The traders have the obligation to ensure best execution rate for client trades. After trades are executed, the traders carry out post-trade analytics that help in assessing transaction costs and optimize trading performance. The analytics is carried out using quantitative models that help in calculation of exposures, portfolio valuation etc. Typically there is a separate team, handling the analytics for the trader. Trade analytics helps in

- Analyzing trader and broker performance
- Identify top-performing trades, teams and regions
- Compare liquidity providers
- Demonstrate best execution to clients

These analytics also serve as inputs to the top management to assess the trader performance.

5. Trade confirmation

Order is compared with the counterparty or street side. All unmatched trades are checked and manual updations are done. After all confirmations, the trade is sent to the back office for processing.

Trade enrichment involves updation of key economic and non-economic parameters on trades as required to ensure timely trade flow into back office system. These could include information from the SSI instruction for the counterparty.

Figuration involves doing calculations for the cash value of trade and any commission /regulatory fee calculations. These calculations are added to the cash value of the trade.

6. Trade Booking

The trading desk confirms the execution of the trade. Now the trade is required to the booked in the settlement systems for further processing. A unique identifier, called “trade ticket” is created for each captured trade. In the subsequent systems, the trade is identified by its trade ticket.

7. Clearing and Settlements

a) Pre-settlement

Clearing refers to the settlement of claims of financial institutions against other financial institutions. Clearing is the process of determination of obligations, after which the obligations are discharged by settlement. It involves two activities: trade comparison (matching of trades) and settlement (delivery of securities or book entry).

Confirmation is the first step of the clearing process. When trades are executed, buyers and sellers record trade details. Brokers receive confirmations that the trade has been executed and pass on details of the confirmation to clients.

Trade comparison is the second step in the clearing process. Few brokers can do self clearing while others forward their orders to a clearing firm to manage trade comparisons and other back office operations. When clearing is done in-house, the pre-settlement team will carry out the task of trade comparison, to ensure all trades match before the settlement date.

Trades entered on behalf of the clients need to be confirmed through the Custodians. This also includes verification of the settlement instruction. Trade reports with discrepancies resulting from recording errors, misunderstanding and fraud, are sent back to traders to resolve or reconcile.

National Securities Clearing Corporation (NSSC) serves as the clearing agent for equity and bond markets. We have already seen the other clearing agents for different products in the first chapter of this book.

Netting is a procedure adopted to determine the net settlement obligations. The number of securities transaction on a daily basis is huge. Since most brokerage firms execute large numbers of both buy and sell transactions for the securities that they trade, netting down results in only a fraction of transactions actually have to be settled. At the end of the netting process, the NSCC delivers to each brokerage firm settlement instructions.

The settlement team at each brokerage has to then ensure that the required cash (Buy order) / Securities (sell order) is present in the bank / Custodian to honour the obligation.

b) Settlement

At the settlement date, the actual transfer of cash and security takes place as per the pre-agreed instructions. Settlement usually takes place on a Delivery versus Payment (DvP) basis.

The Depository Trust & Clearing Corporation (DTCC) holds stock certificates of member firms, registering them in member names and maintaining computerized records of ownership and transfers. The settlement process is completed when the DTCC transfers the ownership of the shares from the selling firm to the buyer firm in its automated book-entry recordkeeping system and transfers money between firms with net credits and net debits.

8. Post-Settlement

After the settlement is complete, the post settlement activities are carried out. The various teams involved in the process are operations, risk management & Finance.

Some other stages of a trade life cycle include

a) Cash Management

By closely monitoring the activity and balances on their accounts, banks are able to invest (usually) overnight temporarily available surplus funds in the currency's local market thereby earning interest on their deposits.

b) Reconciliations of stock and cash balances

Part of the function of the back office is to reconcile the various accounts used when transacting the treasury business. The reconciliations department is responsible for ensuring that any outstanding amounts are promptly investigated and resolved

c) Updating dealer positions and Profit & Loss accounting

The information on the trader positions is available from the internal system. The pricing information is sourced from independent sources and profit & loss for each trader is carried out independently.

d) Reporting

Numerous reports are required to the filed with the regulator on the day-to-day activities. Regulations also require that clients need to be updated about the balances in their accounts. These regulatory reports need to be sent out at specific intervals. The senior management of the firm also needs a view of the firm's activities.

e) Pricing and Valuations of the holdings

The holdings of the firm need to be priced on a daily basis from a risk point of view. This is especially true in case of trades where the firm is holding collateral e.g. reverse repo transaction. The collateral held should suffice to cover the loaned amount.

Pricing is also required for a Net Asset Value (NAV) calculation purpose.

Test Yourself 6

Who enters the orders in the Order Management System (OMS)?

A Trader
B Salesperson
C Structuring Desk
D Back Office

Test Yourself 7

What is the outcome from a Trade analytics exercise?

A Analyzing trader and broker performance
B Identify top-performing trades, teams and regions
C Demonstrate best execution to clients
D All of the above

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5. Know about the key points for derivative settlement from BO perspective. [Learning Outcome e]

Life of a deal for derivative contract from BO perspective

Having looked at the trade settlement cycle for a traditional asset class, let us look at a few examples of derivative contracts. We will look at these deals from a Back-office point of view.

1. Forward Rate Agreement (FRA)

We have already seen the characteristics of the FRA in the previous chapters. There are 2 distinct events, namely when the FRA is agreed and when FRA is settled. The BO is involved in both the events.

- At the FRA initiation phase, BO participates in confirming dates, rate and amount etc.
- At maturity, which is the actual start date of the FRA, the settlement amounts need to be agreed and paid.

2. Currency options

Participation of the back office only occurs in agreeing to the terms of the contract (especially for an OTC) and ensuring the premium is paid / received.

At maturity, either the option expires worthless – nothing to be done by back office – or the option is exercised. Exercise would mean that a spot transaction will be written between the bank and the holder which will be settled in the normal way for that type of transaction.

In the context of mutual co-operation between front and back office, it is important is that certain attributes of options contracts are understood – i.e. if a customer tries to exercise a European option other than at maturity, it is not allowed. In contrast, an American style option can be exercised at any time during the life of that deal.

Test Yourself 8

At the maturity of a FRA, the activities carried out the back office include

A Confirming dates,
B Settlement of agreed amounts
C Confirming rate
D Confirming amount

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6. Understand the concept and advantages of Straight Through Processing (STP). [Learning Outcome f]

Straight Through Processing (STP)

Straight-through Processing ("STP") is a mechanism that automates the end-to-end processing of transactions of the financial instruments. It involves use of a single system to process or control all elements of the work-flow of a financial transaction, including the Front, Middle, and Back office. So it electronically captures and processes transactions in one pass, from the point of first 'deal' to final settlement.

The traditional means and methods of capturing and processing of information such as phone, fax, email etc. requires human intervention which slows the entire cycle, introduces errors and delays settlement. Usage of STP enables orders to be processed, confirmed, cleared and settled in a shorter time period, more cost effectively and with fewer errors. STP also streamlines back-office activities, leading to fewer failures, lower risks and drastically reduces costs per transaction.

With STP it would be possible to move from a present-day T+3 trading to same-day settlement. One of the benefits of STP is a decrease in settlement risk. This is because a shortening of transaction-related processing time will increase the probability that a contract or an agreement is settled on time.

Test Yourself 9

What are the advantages of straight though processing?

A STP decreases settlement risk
B STP streamlines back-office activities
C Reduces costs per transaction
D All of the above

Summary

- Participants in the trade life cycle include
  - ✓ Regulator
  - ✓ Retail Investors
  - ✓ Institutional investors
  - ✓ Issuers
  - ✓ Broker-Dealers
  - ✓ Custodians
  - ✓ Depository
  - ✓ Exchanges and Over the Counter Markets
  - ✓ Clearing agent
  - ✓ Settlement agent
  - ✓ Correspondent bank
- The responsibilities for various activities of the trade life cycle rest with different departments. These are divided into 3 distinct silos, namely Front Office, Middle Office and Back Office.
- The front office is the client facing arm of the broker. It includes
  - ✓ Sales people in the capital markets
  - ✓ Traders in the capital markets
  - ✓ Corporate finance bankers
  - ✓ Research analysts
- The middle office functions with the following objectives:
  - ✓ Assist the traders of the front office
  - ✓ Risk monitoring
- The back office includes all the support functions that help in the day to day activities of the broker. These include teams like
  - ✓ Operations
  - ✓ Information Technology
  - ✓ Legal & compliance
  - ✓ Finance
  - ✓ Risk management
  - ✓ Production team
- The trade life cycle consists of the following main stages
  - ✓ Order Capture
  - ✓ Order Validation
  - ✓ Trade Execution
  - ✓ Trade analytics
  - ✓ Trade confirmation
  - ✓ Trade Booking
  - ✓ Clearing and Settlements
  - ✓ Post-Settlement
- Straight-through Processing (“STP”) refers to automation of end-to-end processing of financial transactions. STP will help in reducing the time required for settlement, thereby reducing risk.

Answers to Test Yourself

Answer to TY 1

The correct option is **C**.

Legal contract between two parties to exchange a number of shares for money is called a Trade

Answer to TY 2

The correct option is **D**.

Banks, mutual funds, pension funds are examples of institutional investors.

Answer to TY 3

The correct option is **D**.

Custodians provide all of these services i.e clearance, settlement and securities lending

Answer to TY 4

The correct option is **D**.

Research teams will carry out fundamental and technical research to give trading ideas to the clients

Answer to TY 5

The correct option is **C**.

FO required the trade details on a real time basis

Answer to TY 6

The correct option is **B**.

The sales team will enter the order in OMs after receiving the details from the client.

Answer to TY 7

The correct option is **D**.

The activities of the trade analytics team help in all the listed activities.

Answer to TY 8

The correct option is **B**.

At maturity, the agreed amounts are settled. All other activities are prior to the FRA initiation

Answer to TY 9

The correct option is **D**.

All the listed options are the advantages of STP

Self Examination Questions

Question 1

What are the sales persons responsible for?

A Interacts with the client, giving trading and product ideas to the clients
B Interacts with the client, execute the trade for clients
C Generate trading ideas through company research
D Introduce new product Ideas

Question 2

What are the traders responsible for?

A Generate trading ideas through company research
B Interacts with the client, execute the trade for clients
C Interacts with the client, giving trading and product ideas to the clients
D Introduce new product Ideas

Question 3

Fundamental analysis or research is carried out with the help of _____.

A Charts
B Financial statements
C Short Term Trends
D All of the above

Question 4

Who is responsible for risk monitoring during the trade life cycle?

A Front Office
B Middle Office
C Back Office
D None of the above

Question 5

All of the below activities can be classified under pre-trade activities except

A Client On-boarding
B KYC compliance
C Agreeing terms for OTC trade
D Settlement

Question 6

What does the acronym SSI mean?

A Standard Settlement Instruction
B Settlement Standard International
C Super Simple Instructions
D None of the above

Question 7

All of the following are Post trade activities carried out by Back Office except

A Trades Verification
B Trade Confirmation
C Trade enrichment
D Trade Clearing and Settlement

Question 8

What are the responsibilities of the finance Team?

A Keeps track of the profit and loss for each trader.
B Monitor the risk of non-settlement
C Ensure cash is paid to the counterparty
D All of the above

Question 9

Trader is responsible for all of the following activities during execution except

A Execution status feedback
B Reconciliation
C Settlement
D Follow industry regulations and compliance rules

Question 10

At the maturity of a FRA, the activities carried out by the back office include

A Confirming dates,
B Settlement of agreed amounts
C Confirming rate
D Confirming amount

Answers to Self Examination Questions

Answer to SEQ 1

The correct option is **A**.

Sales persons interacts with the clients, giving trading and product ideas to the clients

Answer to SEQ 2

The correct option is **B**.

Traders execute the trade for clients

Answer to SEQ 3

The correct option is **B**.

Fundamental analysis or research is carried out with the help of financial statement of the company.

Answer to SEQ 4

The correct option is **B**.

Middle Office is responsible for monitoring the risks for the trade executed by the traders.

Answer to SEQ 5

The correct option is **D**.

Settlement happens after the order execution i.e. trade is done.

Answer to SEQ 6

The correct option is **A**.

SSI stands for Standard Settlement Instruction.

Answer to SEQ 7

The correct option is **C**.

Trade enrichment is carried out by the Middle Office Team

Answer to SEQ 8

The correct option is **A**.

The finance team keeps track of traders P&L. The settlement risk and payment is managed by the other teams.

Answer to SEQ 9

The correct option is **C**.

Settlement is the responsibility of the settlement team

Answer to SEQ 10

The correct option is **B**.

At maturity, the agreed amounts are settled. All other activities are prior to the FRA initiation