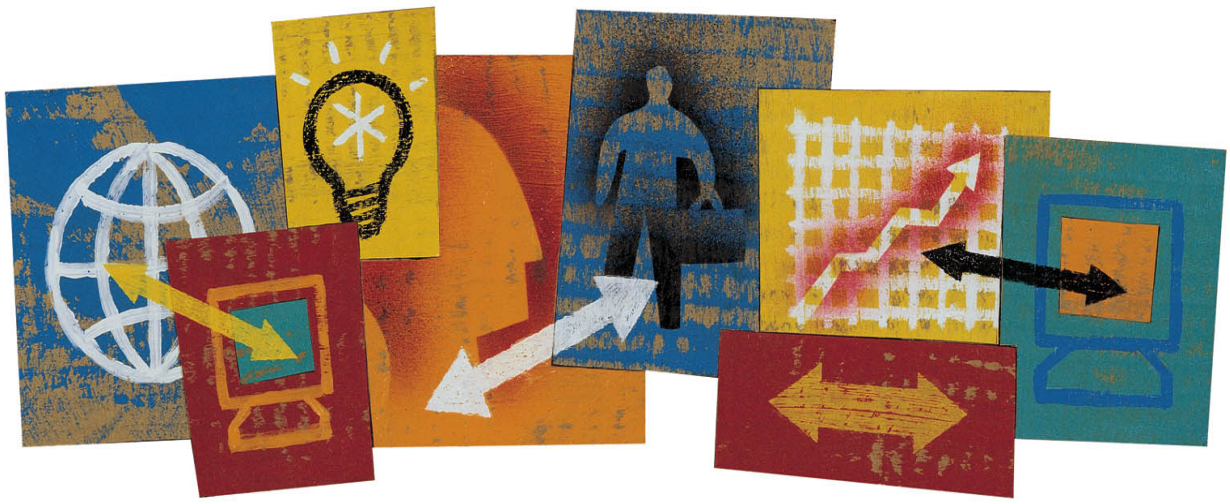

Banking and Financial Services

Securities Services – Level 1 Training Material

Version 1.1

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1 Overview of Financial Instruments

1.1 Financial Instruments

Financial instruments package financial capital in readily tradable forms - they do not exist outside the context of the financial markets. Their diversity of forms mirrors the diversity of risk that they manage.

Financial instruments can be categorized according to whether they are cash instruments or derivatives of other instruments.

- **Cash instruments** can be divided into securities, which are readily transferable, and other cash instruments such as loans and deposits, where both borrower and lender have to agree on a transfer.
- **Derivative instruments** can be divided into exchange traded derivatives and over-the-counter (OTC) derivatives.

Alternatively they can be categorized by 'asset class' depending on whether they are equity based (reflecting ownership of the issuing entity) or debt based (reflecting a loan the investor has made to the issuing entity). If it is debt, it can be further categorized into short term (less than one year) or long term. Foreign Exchange instruments and transactions are neither debt nor equity based and belong in their own category.

The most common form of a Financial Instrument is a Security. The following section elaborates on what a Security means in financial parlance.

1.2 Classification of Financial Assets

Stocks, bonds, cash — these are the most common broad investment categories known as asset classes. They have different qualities and strengths, as well as risk and reward characteristics.

Stocks — Stocks are also called equities. Stocks are shares of ownership in a company. Shares earn or lose money based on the increasing or decreasing share value. Stock holders also earn money when companies declare dividends. Dividends are generally payments made to owners of a company. These payments can be in the form of cash or the issuance of additional Stock. Dividends are generally used as a way to allow the owners to participate in the profits generated by the company.

Bonds — Bonds represent money loaned to the issuer (governments, municipalities, companies and other entities). They earn money from the fixed interest paid on that loan. Bonds are also called fixed-income investments.

Cash — Treasury bills, certificates of deposit (CDs) and other short-term securities are called cash or cash equivalents. They earn money through interest, which is generally set at a guaranteed rate.

1.2.1 Security

It's important to note that the more general term "Security" is often used to describe these investment products. Securities are simply transferable certificates of ownership of stocks, bonds, and other investment products.

A security (such as a stock, bond or option) can be defined in three different ways.

- As a paper document providing proof of a financial stake of some kind.
- As an electronic/computer system equivalent to such a document.
- As an abstract but verifiable financial stake that maybe represented through a paper document or a computer system, but does not disappear just because something happens to the piece of paper (or the computer) on which it was recorded.

The financial stakes represented by securities are stakes in some business, government or other legal entity.

If the security is a stock, then the investor's role is ownership (together with other investing shareholders, if any).

If the security is a bond, then the investor is a creditor and the other entity can be corporate or government.

If the security is an option, then the investor has certain well-defined rights and the other entity has corresponding obligations.

Futures contracts, though they share many of the characteristics of securities, are separately regulated and therefore sometimes said not to be securities at all.

1.3 Asset Class - Overview

1.3.1 Equities

Stock is denominated in units called shares. The share issuing entity is always a corporation. Shares in a mutual fund are a specialized form of stock.

Normally, as a shareholder, one has certain basic rights including the following:

- **A claim**, proportional to the number of shares held, **to a portion of the corporation's assets**. This does not mean however that investor can go into corporate headquarters and walk off with a desk. The claim is on the undivided assets of the corporation, not on any specific piece of property.

- **The power to vote on company business** at shareholders' meetings, again in proportion to shares held. Specifically, investors are entitled to vote for directors, either in person or by proxy. Not all stock, however comes with voting rights.

Corporations that issue stock (or other securities) are referred to as Issuers. Stock can be issued for sale to the public. When issuers prepare to sell securities to the public, they usually call upon investment bankers to act as underwriters. The underwriter's names are literally 'written under' the copy at the bottom of the cover page of the prospectus, a legal document that together with the registration statement must be filed with the regulatory bodies.

Some issuers particularly of initial public offerings (IPOs) have taken advantage of the low marketing costs of the Internet to offer direct IPOs, bypassing underwriters entirely. And some have become a new kind of underwriter, offering direct IPOs over the Internet.

Investors buy stock for long-term capital appreciation or for short-term income in the form of dividends. While most dividends are paid in cash, there are stock dividends, so called scrip dividends and occasionally even dividends in the form of company products or other property.

1.3.2 Bonds

Market conditions, the dilution of ownership and a host of other reasons may lead a corporation to decide against issuing shares of stock to raise capital. Instead, because the corporation is a legal entity, it borrows money from the public in its own name.

- Corporations borrow long term capital through debt instruments known as bonds.
- They borrow intermediate term financing through notes.
- Short term financing, referred to as commercial loans, is arranged through commercial banks. (Some corporations, especially finance corporations, issue a short term instrument known as commercial paper.)

Bondholders and note-holders are creditors, or lenders to the corporation. As such they do not own the company or have any vote in corporate matters. They lend their money to the corporation, in return for interest payments as they become due and the repayment of their principal at the conclusion of the loan's term.

Corporate bonds and notes are brought to the public market through underwritings, which are usually negotiated. In the negotiated underwriting, corporate management and the underwriters meet and decide to issue bonds. Interest is paid to bondholders usually on a semi annual basis.

Corporate bonds are traded on national exchanges as well as over the counter. Bonds trade at the market price plus accrued interest. When the investor buy a bond, he pays the agreed-upon price plus whatever interest has accrued to the former owner (the seller) of the bond.

Most fixed income issues are reviewed and rated by various rating services, of which the two best known are Standard & Poor's and Moody's. Such companies use many criteria to evaluate the financial strength of issuers. With easy access to these reports, the public may use these ratings in choosing the appropriate investment.

When the corporation and its investment banker negotiate the terms of the bond to be issued, the company's rating plays an important part. The higher the rating, the more willing the investing public is to purchase the security. Also, the more willing investors are to buy the bond because of its rating, the less interest the issuer has to pay to attract investors.

1.4 Introduction to Mutual Funds

Mutual Fund (MF) is a type of Investment Company that pools the money of many investors – shareholders and collectively invests that money in stocks, bonds, or money market instruments. Through the collective investments of the mutual fund, each investor shares in the returns from the fund's portfolio while benefiting from professional investment management, diversification, liquidity, and other benefits and services. MF is typically externally managed, to carry out its business activities, such as investing in securities. Individuals and institutions invest in a mutual fund by purchasing shares issued by the fund. It is through these sales of shares/units that a mutual fund raises the cash used to invest in its portfolio of stocks, bonds, and other securities. For the individual investor, mutual funds provide the benefit of having someone else manage their investments and diversify their money over many different securities that may not be available or affordable to them otherwise. Today, minimum investment requirements on many funds are low enough that even the smallest investor can get started in mutual funds. A mutual fund, by its very nature, is diversified -- its assets are invested in many different securities. Beyond that, there are many different types of mutual funds with different objectives and levels of growth potential, furthering the chances to diversify.

1.4.1 NAV of Mutual Funds

The performance of a particular scheme of a mutual fund is denoted by Net Asset Value (NAV). Mutual funds invest the money collected from the investors in securities markets. In simple words, Net Asset Value is the market value of the securities held by the scheme. Since market value of securities changes every day, NAV of a scheme also varies on day to day basis. The NAV per unit is the market value of securities of a scheme divided by the total number of units of the scheme on any particular date. It is computed by the formula given below:

$$\text{NAV} = \frac{Assets - Liabilities}{\text{Number of units outstanding}}$$

The value of the mutual fund varies with the value of the portfolio, as the prices of the securities, which constitute the portfolio, fluctuate day to day. As the intrinsic value of the security represents the fair value of the security, the NAV represents the fair value of a unit in a mutual fund.

Usually the fund units at the time of application are sold at public offering price (POP). The difference between the NAV and the public offering price is the sales charge recovered by the Asset Management Company from the scheme to cover costs of raising funds on a continuous basis. The public offering price is generally calculated as follows:

$$\text{POP} = \frac{NAV}{1 - \text{Sales Charge}}$$

Note: The NAV and the market price at which units of Mutual Funds are traded in a market need not always be equal: the units may sell for the current NAV per share, for more (at a premium), or for less (at a discount).

1.4.2 Pricing of Mutual Funds

Mutual Fund pricing takes place in a short time frame at the end of the each business day. Generally a fund's pricing process in US begins at the close of the New York Stock Exchange. A mutual fund typically obtains the prices of securities it holds from a pricing service, a company that collects prices on a wide variety of securities. Fund accounting agents internally validate the prices received by subjecting them to various control procedures. In some instances, a fund may use more than one pricing service to ensure accuracy. The price at which a fund's share may be purchased is its NAV per share plus any applicable front-end sales charge (the offering price of a mutual fund without a sales charge would be the same as its NAV per share). The NAV must reflect the current market value of the fund's securities, as long as market quotations for those securities are readily available. Other assets are priced at fair value, determined in good faith by a fund's board of directors. Any income and expenses (including any fees) must be accrued through the date the share price is calculated. Changes in holdings and in the number of shares must be reflected no later than the first calculation of the share price on the next business day.

Fund typically value securities using the closing prices from the exchange on which the securities are principally traded, even if the exchange closes before the fund's daily pricing time (which occurs with many foreign securities). If a material event that will likely affect the value of the security occurs after the exchange closed and before the fund's share price is determined, it may be necessary to determine the fair value of the security in light of that.

1.4.3 Classification of Mutual Funds

The mutual fund schemes can be classified according to their investment objective (like income, growth, tax saving), the number of units (if these are unlimited then the fund is an open-ended one while if there are limited units then the fund is close-ended) or by geography.

- **By Structure**
  - *Open-ended schemes*

    Open-ended schemes do not have a fixed maturity period. Investors can buy or sell units at NAV-related prices from and to the mutual fund on any business day. These schemes have unlimited capitalization, there is no cap on the amount one can buy from the fund and the unit capital can keep growing. These funds are not generally listed on any exchange.

  - *Close-ended schemes*

    Close-ended schemes have fixed maturity periods. Investors can buy into these funds during the period when these funds are open in the initial issue. After that, such schemes cannot issue new units except in case of bonus or rights issue. However, after the initial issue, investor can buy or sell units of the scheme on the stock exchanges where they are listed. The market price of the units could vary from the NAV of the scheme due to demand and supply factors, investors' expectations and other market factors.

- **By Investment Objective**
  - *Equity/Growth Funds*

    The aim of growth funds is to provide capital appreciation over the medium to long- term. Such schemes normally invest a major part of their corpus in equities. Such funds have comparatively high risks. These schemes provide different options to the investors like dividend option, capital appreciation, etc. and the investors may choose an option depending on their preferences. Growth schemes are good for investors having a long-term outlook seeking appreciation over a period of time.

  - *Fixed Income/Debt Funds*

    The aim of income funds is to provide regular and steady income to investors. Such schemes generally invest in fixed income securities such as bonds, corporate debentures, Government securities and money market instruments. Such funds are less risky compared to equity schemes. These funds are not affected because of fluctuations in equity markets. However, opportunities of capital appreciation are also limited in such funds. The NAVs of such funds are affected because of change in interest rates in the country. If the interest rates fall, NAVs of such funds are likely to increase in the short run and vice versa. However, long term investors may not bother about these fluctuations.

  - *Balanced Funds*

Balanced Funds invest in a mix of equity securities and bonds with the three-part objective of conserving principal, providing income, and achieving long-term growth of both principal and income. These funds maintain target percentages in asset classes.

- *Money Market or Liquid Fund*

These funds are also income funds and their aim is to provide easy liquidity, preservation of capital and moderate income. These schemes invest exclusively in safer short-term instruments such as treasury bills, certificates of deposit, commercial paper and inter-bank call money, government securities, etc. Returns on these schemes fluctuate much less compared to other funds. These funds are appropriate for corporate and individual investors as a means to park their surplus funds for short periods.

- *Gilt Fund*

These funds invest exclusively in government securities. Government securities have no default risk. NAVs of these schemes also fluctuate due to change in interest rates and other economic factors as is the case with income or debt oriented schemes.

- *Index Funds*

Index Funds replicate the portfolio of a particular index. These schemes invest in the securities in the same weightage comprising of an index. NAVs of such schemes would rise or fall in accordance with the rise or fall in the index, though not exactly by the same percentage due to some factors known as "tracking error" in technical terms. Necessary disclosures in this regard are made in the offer document of the mutual fund scheme.

- **By Geography**

- *Domestic funds*

Domestic fund houses launch funds, which mobilize savings of the nationals within the country. These schemes could fall under any of the categories mentioned under portfolio classification and functional classification.

- *Offshore Funds*

Offshore funds can invest in securities of foreign companies, after requisite permission from the central bank of the concerned country. The objective behind launching offshore funds is to attract foreign capital for investment in the country of the issuing company. These funds facilitate cross border fund flow, which is a direct route for getting foreign currency. From the investment point of view, offshore funds open up domestic capital markets to the international investors and global portfolio investments.

1.4.4 Fees and Expenses of Mutual Fund

The following are the fees and expenses related to the mutual funds:

Shareholder Fees (paid directly by an investor)	
Sales Charge	Also known as a "load," may be attached to the purchase (i.e., a "front-end load") or sale (i.e., a "back-end load") of mutual fund shares. Compensates a financial professional for services rendered
Redemption Fee	Fee paid to a fund to cover the costs, other than sales costs, involved with redemption.
Exchange Fee	Fee may be charged when an investor transfers money from one fund to another within the same fund family.
Annual Account Maintenance Fee	Fee charged by some funds, for example, to cover the costs of providing services to low-balance accounts.
Annual Fund Operating Expenses (the costs deducted from fund assets before earnings are distributed to shareholders)	
Management Fee	Fee charged by a fund's investment adviser for managing the fund's portfolio of securities and providing related services (fee would be determined in the contract the fund's board enters into with the fund's investment adviser).
Distribution (12b-1) Fee	Fee charged by some funds to compensate sales professionals for providing services to mutual fund shareholders in connection with the purchase and sale of shares or the maintenance of accounts, and to pay fund marketing and advertising expenses.
Other Expenses	Include, for example, fees paid to a fund's transfer agent for providing various fund shareholder services, such as toll-free phone communications, computerized account services, website services, recordkeeping, printing, and mailing.

1.4.5 Share Classes of Mutual Funds

Many mutual funds use brokers to sell their shares. These brokers are paid a commission which typically is earned by charging a sales load (or commission) to a mutual fund purchaser at the time of

sale or redemption, an asset based distribution fee charged to the fund, or a combination of the two. Other funds are sold as “no-load” funds, and some have hybrid characteristics.

Historically, different funds were established for each sales load structure. Thus, one fund might charge a front-end load at the time of sale, while another fund might be sold with a contingent deferred sales charge (“CDSC”). A multiple class fund has a single pool of assets, but issues different classes of shares. Each share represents an interest in the fund’s single pool of assets but has distinctly different sales commission, distribution expense or shareholder servicing characteristics. Some of the commonly used definitions in share classes are:

A Shares: They are typically called load funds and offered through brokers, these funds are sold with an initial, or front-end sales charge (usually 3-6%) that is deducted from the initial investment. Also, these funds most always charge a 12b-1 marketing fee (on average, around 0.25%) which is deducted from the fund's assets each year.

B Shares: These funds have no front-end sales charge, but carry a redemption fee, or back-end load that an investor pays if it is redeemed within a pre-defined number of years. B share funds also carry a 12b-1 marketing fee which is typically higher than the 12b-1 fee of A shares. After the time period ends some funds may voluntarily convert B shares to A shares such that these fees are reduced.

C Shares: These are known as "level-load" share since there is no front-end sales charge and redemption fee. However, these carry a 12b-1 marketing fee which an investor pays for as long as he holds the fund. It is similar to no-load funds that charge 12b-1 fees.

Y Shares: No sales load for investors meeting minimum dollar investment requirements or having other specified characteristics.

1.5 Fund Administration in other investment funds

Different investment funds like hedge funds, pension funds etc are characteristically different from each other and hence require specialized services for each kind. While some of the core fund accounting and administration services remain the same, there are specialized services offered for different kinds of funds. We look briefly at the services provided in 3 different types of funds.

- **Pension Funds**
  - Ensuring that the benefits plan underpins and reflects the organizational culture and values.
  - Providing customized pension plan administration helps clients to focus on their core business such that staff benefits are cost-effective and efficiently administered
  - Using enhanced web-based technology to provide internet access to pension information for both employers and employees

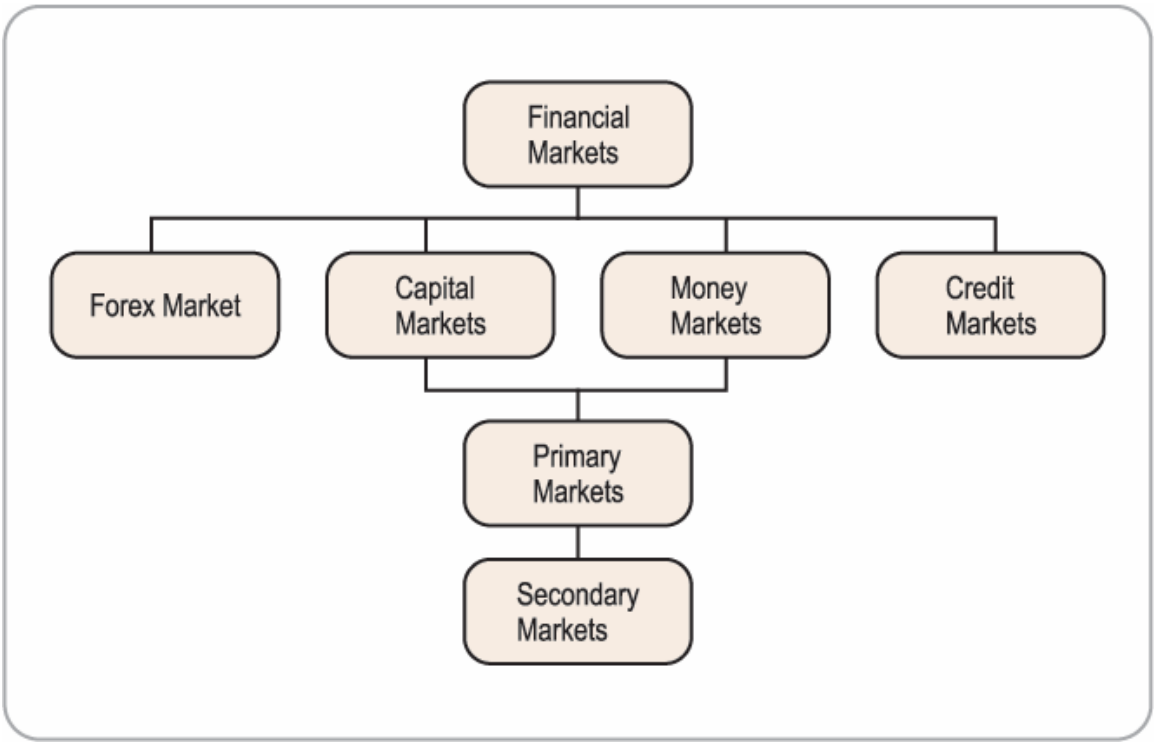
- From the plan set-up through to on-going plan administration, ensuring that all of servicing and delivery requirements are met

- **Hedge Funds**
  - Specialist product groups, offer a tailored administration service within each product
  - Continual communication and relationship management.
  - Maintaining proactive relationships with counterparties to one's business such as prime brokers, accountants, lawyers, etc
  - Support and insight to the industry through conferences, sponsorships and through contributions to developments in regulatory environments.
  - Web Reporting for Investment Managers and their Investors

- **Private equity funds**
  - Specialist industry knowledge, expertise and a deep understanding of the complex investment vehicles
  - Preparation of key reports which include financial statements, capital call and distribution calculations etc
  - Call and closing notices, tracking of cash, and operational cash management and bill payment functions
  - Treasury and tax support Services

2 Overview of Financial Markets

The financial markets channelize the savings of the households and other surplus budget units to those individuals and institutions that need funds. While performing this role the financial markets aid in increasing production and income for various units. The importance of these markets to the financial system can be understood from the quantum of funds that are made available to the borrowers.



Classification of Financial Markets

2.1 Types of Markets

The main segments of the organized financial market are as follows:

2.1.1 Money Market

The money market is a wholesale debt market for low-risk, highly- liquid, short-term instruments. Funds are available in this market for periods ranging from a single day up to a year. Government, banks and financial institutions dominate this market.

2.1.2 Capital Markets

The capital market is designed to finance long-term investments. The transactions taking place in this market are for periods over a year.

2.1.3 Forex Market

The Forex market deals with multi-currency requirements, which are met by the exchange of currencies. Depending on the exchange rate that is applicable, the transfer of funds takes place in this market. This is one of the most developed and integrated markets across the globe.

2.1.4 Credit Market

Credit market is a place where banks and financial institutions offer short, medium and long-term loans to corporate and individuals.

Such a segregation of the financial market into various subgroups has enhanced the efficiency of resource allocation. Each market is unique in terms of the nature of participants, instruments etc. The following table briefly explains the characteristics of the markets.

	Purpose	Players	Regulator
Money Market	Short-term finance	Banks, Government, FIs, Corporates, FIIs, MFs, Individuals	Central Bank
Capital Market	Long-term finance	Corporates, Banks, FIs, Individuals, MFs, FIIs	US - SEC India - SEBI
Forex Market	Short/Long-term foreign currency finance	Banks, Corporates, Forex Dealers	Central Bank
Credit Market	Short/long-term rupee finance	Banks, FIs, NBFCs	Central Bank

The financial markets can further be distinguished into an **open market** or a **negotiated market**. The basic distinction between these two types of markets is based on how the securities are bought and sold. In an open market, the securities will be offered to a large number of investors who can buy and sell them any number of times before the maturity period. The public issue of securities takes place in an open market. On the other hand, the negotiated market will have only a selected group of investors to whom the securities are offered. It will generally be a private contract between the seller and the buyer. A bought-out deal and a car loan are good examples of transactions in a negotiated market.

Another useful and important distinction between markets in the financial system is the **primary market** and the **secondary market**. The primary market is a place for the fresh issue of securities. Corporates, Banks, FIs and the Government can issue new securities and raise funds for investment purposes. The secondary market deals in securities previously issued in the primary market and thereby provide liquidity to the investors. The investors can buy and sell securities in the secondary market on a continuous basis. Due to this, the volume of transactions taking place in the secondary markets is far greater than that of those taking place in the primary markets. Except for the capital market, the other sub-markets present in the financial system either do not have a secondary market or their operations in the same are negligible. The secondary market transactions of the capital market take place at the stock exchanges. All securities that are issued in the primary market will have to be listed on the stock exchanges to enable trading activity. The secondary market helps in undertaking "maturity intermediation" by bringing together savers and users with conflicting maturity targets.

2.2 Market Constituents

2.2.1 Investors

An investor is an entity that owns a financial asset. In general there are two types of investors, the individual and the institutional investor.

Individual Investor: They invest in securities for their personal gains either through capital growth i.e. appreciation in the price of the securities or through regular income through the receipt of dividends on shares or coupons (interest) on bonds.

Institutional Investor: They are institutional clients who visit the securities market and invest in securities. The type of organization that constitutes an institutional investor are:

- Mutual Fund Managers
- Pension Funds
- Insurance companies
- Hedge Funds

2.2.2 Brokers / Dealers

Broker is an intermediary who executes customer orders for a pre-defined commission. A "broker" who specializes in stocks, bonds, commodities acts as an agent and must be registered with the exchange where the securities are traded. The brokers can be classified based on the types of the services offered.

Full Service Brokerage

As the name "Full Service" implies, full service brokerage firms supply clients with a wide range of service including Investment Research, Investment Advice, Order Execution and Clearing:

Firms that offer this full range of services fall into a number of categories. All these types of firms are considered "Full Service".

Discount Brokerage

Discount firms offer fewer services and charge lower commissions. When an investor places an order with a discount firm, he may receive only two services: order execution and clearance. Investor has to do his own research and analysis, pick his own stock and decide on timing by himself. The broker takes the order and confirms its execution – without offering any investment advice, even upon request. Thereafter the discount firm's back office clears the transaction.

2.2.3 Custodians

A Custodian is responsible for safekeeping the documentary evidence of the title to property like share certificates etc. This entity is an organization that holds securities in an electronic or dematerialized form and effects their transfer. The title to the Custodian's property remains vested with the original holder, or their nominee(s), or Custodian trustee, as the case may be. Based on confirmation from customers, Clearing Corporation assigns the obligation of settlement upon the Custodian. In general the services provided by the Custodians are classified in two main areas:

Holding of Securities and Cash: The Custodian maintains the securities and cash in safe custody on behalf of the account holders. The Custodian provides the following services relating to the holding of securities in safe custody:

- Keep the securities safe from the theft or loss
- Provide daily statements of securities and cash holding
- Provide Daily current Market Valuation of securities

Movement of securities and/or cash: The Custodian provides some or all of the services relating to the movement of securities and cash:

- Acknowledge receipt of settlement instruction to the account holder
- Transmit the current status of each instruction to the account holder related to pre- settlement and settlement.

2.2.4 Clearing Corporation

Clearing Corporation (or Clearing House) is responsible for post-trade activities of a stock exchange. It's responsible for clearing and settlement and risk management of trades. The list of activities performed by a Clearing House is:

- Clearing of trades
- Determining obligations of members,
- Arranging for pay-in of funds/securities,
- Receiving funds/securities,
- Processing for shortages in funds/securities,
- Arranging for pay-out of funds/securities to members,
- Guaranteeing settlement.

Examples of important Clearing Corporations across the globe are National Securities Clearing Corporation in USA (NSCC), Sega Intersettle in Switzerland, Clearstream & Euroclear of European Union and so on.

2.2.5 Depository

A Depository is an organization which holds securities in an electronic or dematerialized format and where exchanges of these securities take place. Whether they act as the settlement system of one country, or the custodian for a settlement system in another, depositories basically maintain records of holders in securities. These records, again, drive the various investor services and entitlements. Often the only difference between these records and those of the registrar is the fact that the registrar has responsibility to the issuing company, whilst the depository owes its duty to investors.

The depository can be either domestic or international securities and depending upon that they are known as either National Central Securities Depository (NCSD) or International Central Securities Depositories (ICSDs).

National Central Securities Depository

The depository of a particular country, which deals with securities issued in that country, only is known as National Central Securities Depository (NCSD). A depository is typically set up and operated on behalf of the members of the national stock exchanges of the particular country, as the core and primary repository of the securities issued, traded and settled in that country. Depositories help in the settlement of the dematerialized securities. Custodians located in the same country as the depository are likely to be direct/indirect members of the depository.

The following table has the examples of NCSD's:

Country	Depository abbreviation	Depository Full Name
India	NSDL	National Securities Depository Ltd
USA	DTC	Depository Trust Company
UK	CREST	Crest
Japan	JASDEC	Japan Securities Depository Center
Hong Kong	CCASS	Central Clearing and Settlement System

International Central Securities Depositories (ICSDs)

An ICSD holds both the domestic as well as the international securities. Only two ICSD exist, these are Clearstream in Luxembourg and Euroclear in Brussels. They provide the settlement facilities on a multicurrency basis. Settlement at ICSD falls in three categories:

- **Internal:** Settlement is between the two participants of the same ICSD.
- **Bridge:** Settlement is between the participants of Euroclear and Clearstream.
- **External:** Settlement is between the participants of ICSD and NCSD.

2.2.6 Clearing Banks

Clearing banks are a key link between the Custodians and Clearing Corporation for funds settlement. Every Custodian maintains a dedicated settlement account with one of the clearing banks. Based on his obligation as determined through Clearing Corporation, the clearing member makes funds available in the clearing account for the pay-in and receives funds in case of a payout. In most of the cases the Custodians act as a clearing bank also.

2.3 Financial Intermediaries

Having designed the instrument the issuer should ensure that these financial assets reach the ultimate investor in order to garner the required amount. When the borrower of funds approaches the financial market to raise funds, mere issue of securities may not suffice. Adequate information of the issue, issuer and the security should be passed on to the supplier of funds for the exchange of funds to take place. To serve this purpose, financial intermediaries came into existence. Major changes have been witnessed in the type of issuers and investors participating in the market. Financial innovations, technological up gradations and most importantly changing regulatory mechanism made the process of raising funds from the market place a complex task. Investors' preferences for financial assets have also changed. Designing instruments that catch the investors' attention has now become a specialized service. Likewise, proper expertise is also necessary for establishing transactions in the financial markets. Large volume of transactions taking place in the markets will have to be recorded promptly and accurately.

Some of the important intermediaries operating in the financial markets include Investment Bankers, Underwriters, Stock Exchanges, Registrars, Depositories, Custodians, Portfolio Managers, Mutual Funds, Financial Advertisers, Financial Consultants, Primary Dealers, Secondary Dealers, Self-Regulatory Organizations etc. The role of these intermediaries is summarized in the following table.

Intermediary	Market	Role
Stock Exchange	Capital Market	Facilitates raising of funds and trading of securities.
Investment Bankers	Capital Market, Credit Market	Corporate Advisory services, Issue of securities
Underwriters	Capital Market, Money Market	Subscribe to unsubscribed portion of securities.
Registrars, Depositories and Custodians	Capital Market	Issue securities to the investors on behalf of the company and handle share transfer activity.
Primary Dealers, Secondary Dealers	Money Market	Market making in Government Securities
Forex Dealers	Forex Market	Ensure exchange in currencies

In a market, which is not well regulated, these intermediaries increase the risks for the investor. In order to prevent any misappropriation of the lenders' funds and to reduce the risks of the investors a well-regulated environment has to be developed. With markets in various countries, harmonizing their regulations, these financial intermediaries are now becoming global players. The financials intermediaries offer a variety of services under different service offering names.

2.4 Stock Markets

Stock Markets represent the secondary markets on where the orders placed by investors for buying and selling securities are executed.

❑ Order Types

There are two basic types of order: market orders and limit orders.

- *Market orders* are instructions to buy or sell stock at the best available price. They are the most common types of orders.
- *Limit orders* tell the broker to buy or sell stock at the limit price or better. The limit price is a price the client sets when placing the order. For a given purchase, it is the most he/ she will pay; for a given sale, it is the minimum he/ she will accept. A limit order can also be placed to buy along with one to sell. For example, if XYZ Corporation is currently trading at $42 per share, a limit order can be placed to buy 100 shares of XYZ at 40 or better (less) and to sell 100 shares XYZ at 45 or better (more).

❑ Order Conditions

A buyer/seller can specify order conditions with which the trade is to be executed. These are the conditions that are typically an upper limit in buy price, a lower limit in sell price, stop loss trade orders, quantity conditions and time criteria.

o Time Conditions

DAY order – It is an order that is valid for the day on which it is entered. If the order is not executed during the day, the system cancels the order automatically at the end of the day. For e.g. if the client has placed a day order to buy stock of XYZ corporation on Monday then that order is to be executed on Monday itself otherwise it gets cancelled at the end of the day

IOC – An immediate or Cancel (IOC) order allows the user to buy or sell a security as soon as the order is released into the system, failing which the order is cancelled from the system. Partial match is possible for the order, and the unmatched portion of the order is cancelled immediately. For e.g. client has placed an IOC order to buy 1000 stocks of XYZ corporation and as the order is entered into the system there is another person who wants to sell 500 stocks of XYZ at the same price condition, then the order is executed for 500 stocks and the rest stands cancelled.

o Quantity Conditions:

DQ: An order with a Disclosed Quantity (DQ) allows the user to disclose only a portion of the order quantity to the market. For e.g. if the order quantity is 10,000 and the disclosed quantity is 2,000, then only 2,000 is released to the market. After this quantity is fully matched, a subsequent quantity of 2,000 is disclosed. Thus, totally five disclosures with the same order number are shown one after the other in the market. This is done to contain the volatility in the markets caused due to large order quantities.

All or None (AON) - This customer wants to buy (or sell) a sizable quantity of stock at one time and at a designate price. Brokers are prohibited from announcing this instruction in the trading crowd. They must inquire about the quotation and quality and watch market conditions carefully, until both the price and quantity available can satisfy the order. It's all or none. Only then the brokers execute the order. Normally, AON orders are left with the specialist, and are normally in large size and are used by institutions to test the available depth of the market. . For e.g. client has placed an AON order to buy 1 million stocks of XYZ Corporation, either the broker makes sure that the client gets the entire 1 million shares or the whole order is cancelled.

Fill or Kill (FOK). This instruction calls for the immediate and complete purchase or sale of a specified amount of stock, or no execution at all. If the broker cannot fill the order immediately upon entering the crowd, the order is an immediate depth tester and often used to obtain a better price inside the spread on a here and now basis. For e.g. client has placed an FOK order to buy 1 million stocks of XYZ Corporation,

then either the broker makes sure that the client gets the entire 1 million shares or the whole order is cancelled. The difference between an FOK and an AON offer is that the FOK order is to be fulfilled as and when it enters the system while the AON orders can be left with the specialist.

- **Price Conditions**

  Market: Market orders are orders for which price is specified as 'MKT' at the time the order is entered. For such orders, the system determines the price.

  Stop orders instruct the broker to buy or sell at the market once a certain price target-the stop price-has been achieved. Stop orders are less restrictive than pure limit orders; the market price may be worse than the stop price when the broker executes the order. Stop orders require only that someone bought or sold at the stop price. Pure limit orders require that you get stipulated price.

  Buy Stop Order is frequently used to protect the profits if the price increases beyond a certain quantity. For e.g. Stocks of XYZ corporation are available at $10 .In this case the stock price subsequently dropped to $8. Concerned that the stock could start going up, the investor can place a buy stop order at $9 .The stop order becomes a market order when the stock trades one board lot or more at $9.

  The **Sell stop order** is frequently used to protect the profits if the price falls beyond a certain quantity. For e.g. Stocks of XYZ Corporation are available at $10 and the stock price subsequently increases to $19. Investor places a sell stop order at $18 to protect most of the profit. If the stock hits $18, Sell stop order will be triggered and become a market order. The stop order becomes a market order when the stock trades one board lot (A standard number of shares for trading transactions. The number of shares in a board lot varies with the price level of the security, although in most cases a board lot is 100 shares) or more at $18.

Order Books

An order book is a placeholder for every order entered into the system. As and when valid orders are entered or received by the trading system, they are first numbered, time stamped and then scanned for a potential match. If a match is not found, then the orders are stored in the books as per the price/time priority. [Price priority means that if two orders are entered into the system, the order having the better price gets the higher priority. Best price for a sell order is the lowest price and for a buy order, it is the highest price. Time priority means if two orders having the same price is entered; the order that is entered first gets the higher priority.] This means that each order has a distinctive order number and a unique time stamp on it. If a match is not found, then the orders are stored in the books as per the price/time priority and are called passive orders. An active buy order matches with the best passive sell order if the price of the passive sell order is less than or equal to the price of the active buy order. Similarly, an active sell order matches with the best passive buy order if the price of the passive buy order is greater than or equal to the price of the active sell order.

- **Order Matching**

  The buy and sell orders are matched based on the matching priority. The best sell order is the order with the lowest price and a best buy order is the order with the highest price. The unmatched orders are queued in the system by the following priority:

  Matching Priority

  By Price: A buy order with a higher price gets a higher priority and similarly, a sell order with a lower price gets a higher priority. E.g. Consider the following buy orders:
  1) 100 shares @ $35 at time 9:30 a.m.
  2) 500 shares @ $35.05 at time 9:43 a.m.
  The second order price is greater than the first order price and therefore is the best buy order.

  By Time*:* If there is more than one order at the same price, the order entered earlier gets a higher priority. E.g. consider the following sell orders:

  1) 200 shares @ $72.75 at time 9:30 a.m.

  2) 300 shares @ $72.75 at time 9:35 a.m.

  Both orders have the same price but they were entered in the system at different times. Since the order for 200 shares was entered before the one for 300 shares, it's the best sell order.

- **Stop Loss Matching**

  All stop loss orders entered are stored in the stop loss book. These orders can contain two prices.

  Trigger Price. It is the price at which the order gets triggered from the stop loss book.

  Limit Price. It is the price for orders after the orders get triggered from the stop loss book. If the limit price is not specified, the trigger price is taken as the limit price for the order. The stop loss orders are prioritised in the stop loss book with the most likely order to trigger first and the least likely to trigger last. The priority is the same as that of the regular lot book.

  The stop loss condition is met under the following circumstances:

  Sell Order - A sell order in the stop loss book gets triggered when the last traded price in the normal market reaches or falls below the trigger price of the order.

  Buy Order - A buy order in the stop loss book gets triggered when the last traded price in the normal market reaches or exceeds the trigger price of the order. When a stop loss order with IOC condition is there, the order is released in the market after it is triggered. Once triggered, the order scans the counter order book for a suitable match to result in a trade or else is cancelled by the system.

3 Custody Services

A global custodian provides custody services for cross-border securities transactions. In addition to providing core custody services in a number of foreign markets, a global custodian typically provides services such as executing foreign exchange transactions and processing tax reclaims. A global custodian typically has a sub-custodian, or agent bank, in each local market to help provide custody services in the foreign country. The volume of global assets under custody has grown rapidly in recent years as investors have looked to foreign countries for additional investment opportunities.

A global custodian provides clients with:

- Multi-currency custody,
- Settlement and
- Reporting services

A Sub-Custodian

- Provides safekeeping of securities
- Services portfolios (dividend, corporate actions etc.)
- Physical presence in local markets.
- Acts as local bank or branch of global custodian.
- Links with central depositories.

3.1 Introduction

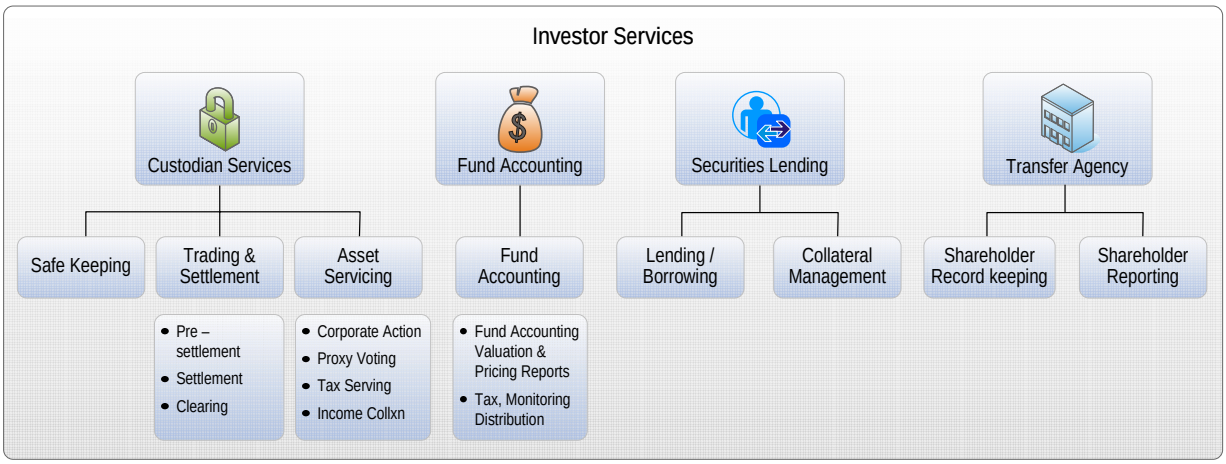
The custody service business evolved from safekeeping and settlement services provided by banks to its customers for a fee. Banks, as a Custodian originally provided only basic safekeeping services to their customers. The banks routinely settled trades and processed income for their own investments. Their customers kept and took their securities out of safekeeping to settle trades or for bond maturities. As time evolved, the banks realized that their expertise in securities-processing and their image as a safe repository would be valuable to their customers and they began to promote their securities processing ability as an enhanced value-added service.

3.1.1 Services offered by Custodians

The Services offered under the gamut of Investor Services are Custody Services, Asset Servicing, Fund Accounting & Administration Services, and Security Lending Services.

These services are offered to Mutual Funds, Investment Managers, Pension Funds, Insurance Companies, Endowments and Banks throughout the world. The laws and regulation of the geography in which they operate govern the investor services business.

The following context diagram represents the scope of the services offered by conventional custodians under the umbrella of Investor Services:



3.1.2 Users of Custody Services

Institutional investors, money managers and broker/dealers are the primary customers for Custodians and other market participants for the efficient handling of their worldwide securities portfolios.

3.1.3 Assets held Under Custody

Custodians hold a range of assets on behalf of their customers. These include equities, government bonds, corporate bonds, other debt instruments, mutual fund investments, warrants and derivatives.

3.1.4 Evolution of Global Custodian

A global Custodian is an institution that safe-keeps, clears, and performs processing of income collection, corporate items, tax reclaims, reporting and cash management services for clients' securities in multiple currencies. The global custody product was conceived out of changes to United States Pensions law. In 1974, the Employee Retirement Income Security Act ("ERISA") came to the Statute books, forcing US pension plan sponsors to segregate investment management and custody of the underlying assets.

It is generally accepted that global custody as a product in its own right was born in 1974. A Chase Manhattan manager in late-1974 invented the term ‘global custody’. The Bank developed the product for a single US-based institutional investor. At that time, the service covered 15 markets around the world.

If an investor holds foreign securities, his/her Custodian will contract with Custodians in foreign

countries to provide local custody services. These foreign Custodians are called sub Custodians. A global Custodian's network of agent banks in the local markets is crucial to its ability to provide efficient securities settlement and asset servicing to its customers. The global Custodian relies on its sub-Custodian network to provide it with valuable information on the local markets, including the securities settlement systems, market conventions, and the regulatory environment.

3.2 Business Drivers of Custody Services

The following are the key drivers in the growth of custody services:

- The **wide range of financial instruments** and the emerging markets spreading across geographies resulted in growing interest of investors. The potential benefits associated with the investments resulted in growth of custody services.
- The **increasing use of global Custodians** to replace their own networks of local Custodians by Investment managers and banks.
- The **state withdrawing from its role of primary pension provider**, causing citizens to invest in defined contribution pensions and mutual funds in record numbers - with custody banks serving the pension funds and mutual funds, their money managers and the banks acting for high net worth individuals.
- The **introduction of floating exchange rates and lifting of exchange controls** in many major economies resulted in rapid development of the market for international debt instruments.
- The **growth in the retail brokerage industry** driving demand for clearing and custody services.
- The **specialist fund managers** running dedicated portfolios of foreign equities have increased in recent time.
- The gradual increase in equities and **cross-border investments**.

3.3 Risks Associated with Custody Services

Many banks currently offer Custodian services. The primary risks associated with custody services are transaction, compliance, credit, strategic and reputation.

Transaction Risk

Transaction risk is the current and prospective risk to earnings or capital from fraud, error, and the inability to deliver products or services, maintain a competitive position, and manage information. Transaction risk encompasses product development and delivery, transaction processing, systems development, computing systems, the complexity of products and services, and the internal control environment. Transaction risk is also referred to as operational risk. This risk is inherently high in custody services because of the high volume of transactions processed daily.

Compliance Risk

Compliance risk is the current and prospective risk to earnings or capital arising from violations of or non-conformance with, laws, rules, regulations, prescribed practices, internal policies and procedures, or ethical standards. Compliance risk also arises in situations where the laws or rules governing certain bank products or activities of a bank's clients may be ambiguous or untested. Compliance risk exposes the institution to fines, civil money penalties, payment of damages, and the voiding of contracts. Compliance risk can also lead to a diminished reputation, reduced franchise value, limited business opportunities, reduced expansion potential, and an inability to enforce contracts. Custody services are contractual in nature, and a bank has to ensure compliance with the provisions of all applicable agreements.

Credit Risk

Credit risk is the current and prospective risk to earnings or capital arising from an obligor's failure to meet the terms of any contract with the bank or otherwise to perform as agreed. Credit risk is found in all activities that depend on counter party, issuer, or borrower performance. It arises any time funds are extended, committed, invested, or otherwise exposed through actual or implied contractual agreements, whether reflected on or off the balance sheet. A Custodian may be exposed to credit risk if it advances funds to a customer to settle trade. In addition, securities lending activities may expose a bank to counter party credit risk.

Strategic Risk

Strategic risk is the current and prospective risk to earnings or capital arising from adverse business decisions, improper implementation of decisions, or lack of responsiveness to industry changes. A bank's decision to participate in the custody business, and its ability to be competitive if it does, is a source of strategic risk to the bank.

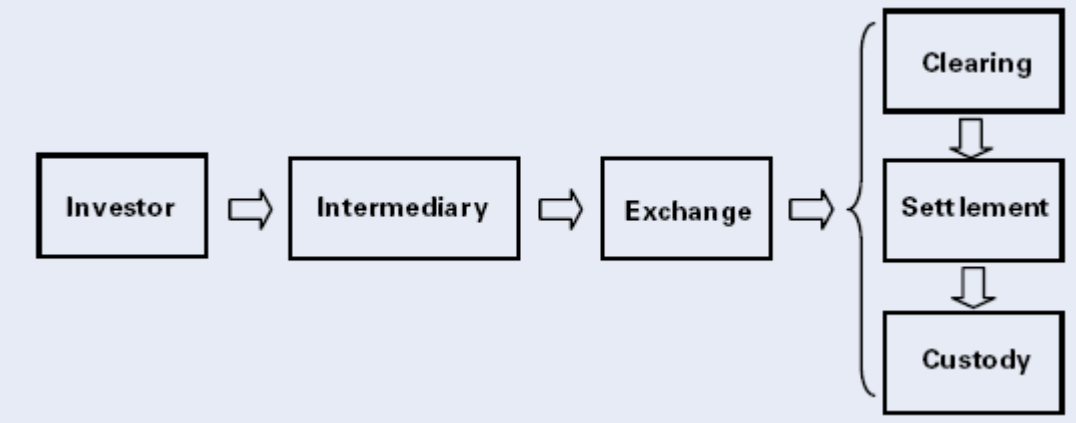
Reputation Risk

Reputation risk is the current and prospective impact on earnings and capital arising from negative public opinion. This affects the institution's ability to establish new relationships or services or to continue servicing existing relationships. This risk may expose the institution to litigation, financial loss, or a decline in its customer base.

3.4 Difference between Custody, Clearing and Settlement

As is evident from the industry definitions, a securities settlement system (SSS) settles the transaction between the buyer and seller of a security. It makes sure that a buyer receives the security and that a seller receives payment. This process can be divided into three core functions: clearing, settlement and custody.

The securities trade processing chain is depicted below. The description below highlights each function thus outlining their differences.



Custody

Safekeeping & administration of assets

Custody refers to the safekeeping of assets and the administration of these securities on behalf of intermediaries and investors. While most CSDs offer safekeeping, asset servicing is primarily carried out by custodians. These asset services include but are not limited to corporate action, tax services, the exercise of voting rights and advanced income services.

Clearing

Balancing of Positions between parties involved

Clearing in the securities business is the process that occurs between trading and settlement, involving the balancing of positions between the different parties to establish agreement on what each party is due, prior to the establishment of final positions for settlement. A clearinghouse clears financial market transactions and provides a range of services related to clearing and the management of risk associated with such contracts.

Central Counterparties replace bilateral contractual obligations

A Clearing House can act as a central counterparty (CCP) by being a legal counterparty to both sides of a financial market transaction. In that way, the clearinghouse becomes the buyer to every seller, and the seller to every buyer, and replaces the original bilateral contractual obligations. This process is known as ”novation”. CCP netting decreases the final number and the value of transactions that have to be settled and therefore is a powerful tool to reduce settlement costs. This also helps in ensuring that default by one party doesn’t affect the other as the Clearing House now acts as the counterparty to both sides.

Settlement

Legal Transfer of Title

Settlement is the legal transfer of title, normally by exchanging a security against money or assets. Depending on the system, there are several ways of paying. Delivery versus payment (DVP) – the simultaneous exchange of cash and securities – and delivery free of payment (FOP) – delivery of securities without payment of funds – are some of the more common. The typical actor carrying out settlement is a Central Securities Depository (CSD).

Asset commitment period to be minimized

In settlement, it is very important to make the asset commitment period as short as possible. Ideally, final settlement should coincide with the payment transfer. In some cases, the settlement system handles the clearing and the securities side of the settlement directly, while the cash side of the settlement is usually affected through the banking/payment system.

3.5 Market Business Segments

3.5.1 Equity Market Clearing and Settlement

Clearing and Settlement organizations clear and settle deals done on Equities. Equity securities have complex entitlement processing to be considered before they can be made eligible for centralized clearing and settlement systems. Equities often have an existing centralized reporting source in the form of a stock exchange. Information that is already available in a stock exchange can be used to drive the clearing mechanisms. This provides an advantage over debt securities that are usually traded in an uncentralized, over-the-counter market.

3.5.2 Debt Market Clearing and Settlement

These Clearing and Settlement organizations clear and settle deals done on debt market securities. Debt securities usually have an advantage over equities in that the entitlements for a debt security are usually trivial to process when compared to some of the complex events that can occur to equity. Entitlements processing is a complex and expensive part of the development of clearing and settlement systems. For equity securities there can be large number actions (proxy, mergers etc) that need to be addressed. For debt securities usually only simple interest and redemptions need to be considered, although more complex debt entitlements will be required in later phases.

Government Debt often makes up a large proportion of the debt securities in a particular market. “Money Market” instruments form a sub-segment of the debt markets. Money Market securities are usually characterized by short terms to maturity and short settlement periods (usually same day

settlement is required). Clearing and settlement systems for same day settlement usually require more sophisticated systems that utilize a large amount of “real-time” processing.

3.5.3 Exchange Traded Derivatives Clearing and Settlement

A derivative is a product whose value is derived from the value of underlying asset, index, or reference rate. The underlying asset can be equity, forex, commodity, or any other asset. For example, wheat farmers may wish to sell their harvest at a fixed price at a future date to eliminate the risk of a change in prices by that date. Such a transaction would take place through a forward or futures market. This market is the “derivative market”, and the prices of this market would be driven by the spot market price of wheat which is the “underlying”. The terms of “contracts” or “products” are often applied to denote the specific traded instruments. In recent years, derivatives have become increasingly important in the field of finance. Futures and options are now actively traded on many exchanges. Forward contracts, swaps, and many other derivative instruments are regularly traded both in the exchanges and in the over-the-counter markets.

Separate Clearing organizations clear and settle exchange traded derivative contracts. For instance The Options Clearing Corporation (OCC), founded in 1973, is the world's largest equity derivatives clearing organization. It acts as legal counterparty to all deals on its constituent exchanges and guarantees settlement. Derivatives clearing and settlement typically involves clearance of transactions for put and call options on common stocks and other equity issues, stock indices, foreign currencies, interest rate composites and single-stock options and transactions in futures. The first step in clearing process is working out open positions or obligations of members. A Clearing Member’s open position is arrived at by aggregating the open position of all the Trading Members and all custodial participants clearing through him / her, in the contracts in which they have traded. Typically Exchange traded derivative contracts are cash settled, i.e. through exchange of cash.

For e.g. Futures and options on individual securities can be delivered as in the spot market. In case of physical settlement, the Derivatives clearing organization needs to develop interfaces with the Securities Clearing houses so that positions can be transferred from the Derivatives Clearing houses to the underlying. Risk exposure is a focal point of vital importance for all international markets and more specific to Derivatives Clearing organizations. As world financial derivatives markets expand and counterparty credit risk increases in size and complexity, an organization's ability to assess its exposure to credit risk has become even more critical.

3.5.4 OTC Derivatives Clearing and Settlement

3.5.4.1 Master agreements

Dealers in all the G-10 countries use master agreements to establish the terms and conditions of OTC derivatives transactions, both with other dealers and with end-users. Dealers prefer to use a single master agreement for all their transactions with counter-party in order to minimise counterparty credit exposures by applying close-out netting provisions (discussed further below) to the broadest possible set of obligations.

3.5.4.2 Confirmations

Almost all OTC derivatives transactions are executed by telephone. Once a trade is executed, it is confirmed and settled bilaterally by the counterparties. The primary purpose of issuing confirmations is to ensure that the counterparties agree on the economic terms of the trade. For trades between dealers, both parties usually issue a confirmation, while end-users typically review confirmations prepared by dealers. Dealers generally send out confirmations between one and five days after the trade date, usually by fax or telex. S.W.I.F.T. is used principally for forward rate agreements (FRAs) and foreign currency options.

3.5.4.3 Settlement

OTC derivatives may require payments periodically throughout the life of the transactions, on maturity, or both. Master agreements provide for the netting of payment obligations in the same currency on the same value date. In practice, however, the extent of payment netting is limited by systems constraints, such as incomplete systems integration, that make it difficult for dealers to calculate and administer net payments. Nonetheless, for most firms, payments relating to OTC derivatives constitute a small share of the total value of their payments.

3.5.4.4 Close-out netting

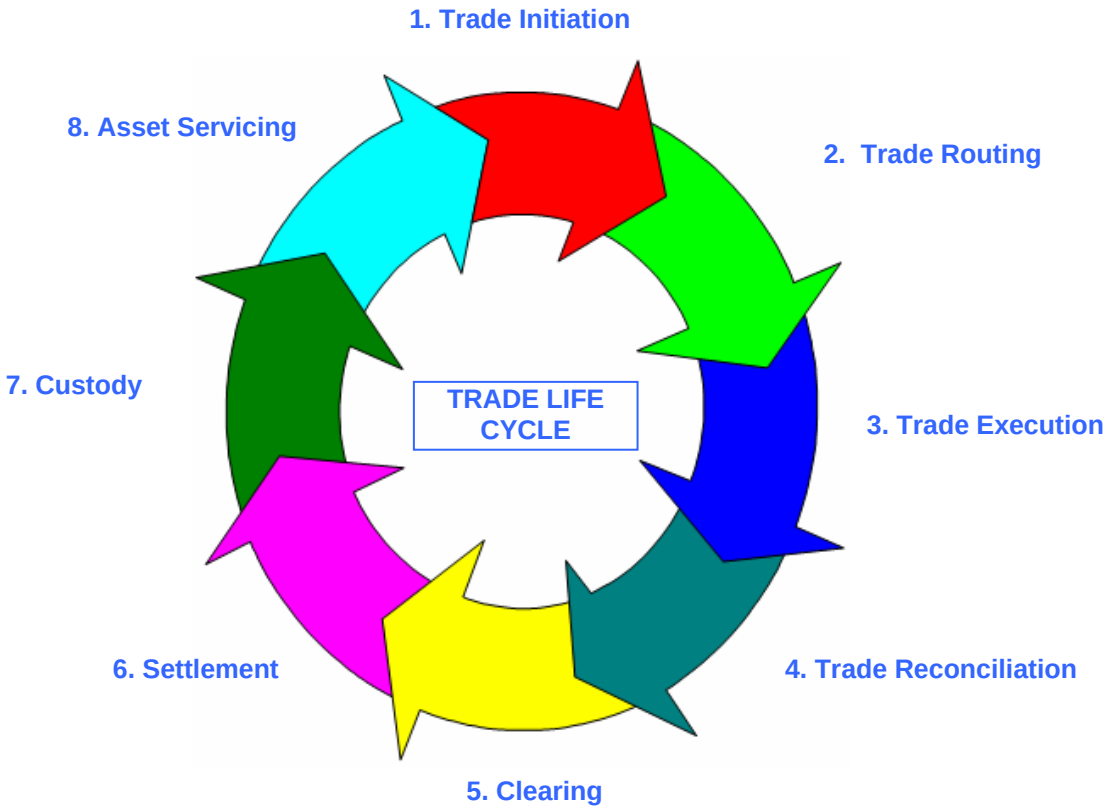
Perhaps the most significant risk faced by OTC derivatives dealers is counterparty credit risk. Close-out netting is a powerful tool for mitigating this risk. A master agreement typically provides that, in the event of counterparty's default, the non-defaulting counterparty can accelerate and terminate all outstanding transactions and net the transactions' market values so that a single sum will be owed by, or owed to, the non-defaulting counterparty. Dealers believe close-out netting is enforceable in nearly all the G-10 countries but acknowledge that there are countries in which enforceability is doubtful. Legally enforceable netting provisions reportedly reduce aggregate counterparty credit exposure by 20 to 60%.

3.5.4.5 Collateral

In recent years some dealers have rapidly expanded their use of collateral to mitigate counterparty credit risks. Those dealers with the most advanced program collateralise transactions with between 10 and 30% of their counterparties. For most dealers, however, the use of collateral is much less extensive. Nonetheless, nearly all the dealers reported that they expect usage to expand rapidly in the near future.

3.6 Trade Lifecycle

A typical Trade Life cycle can be pictorially represented as shown below:



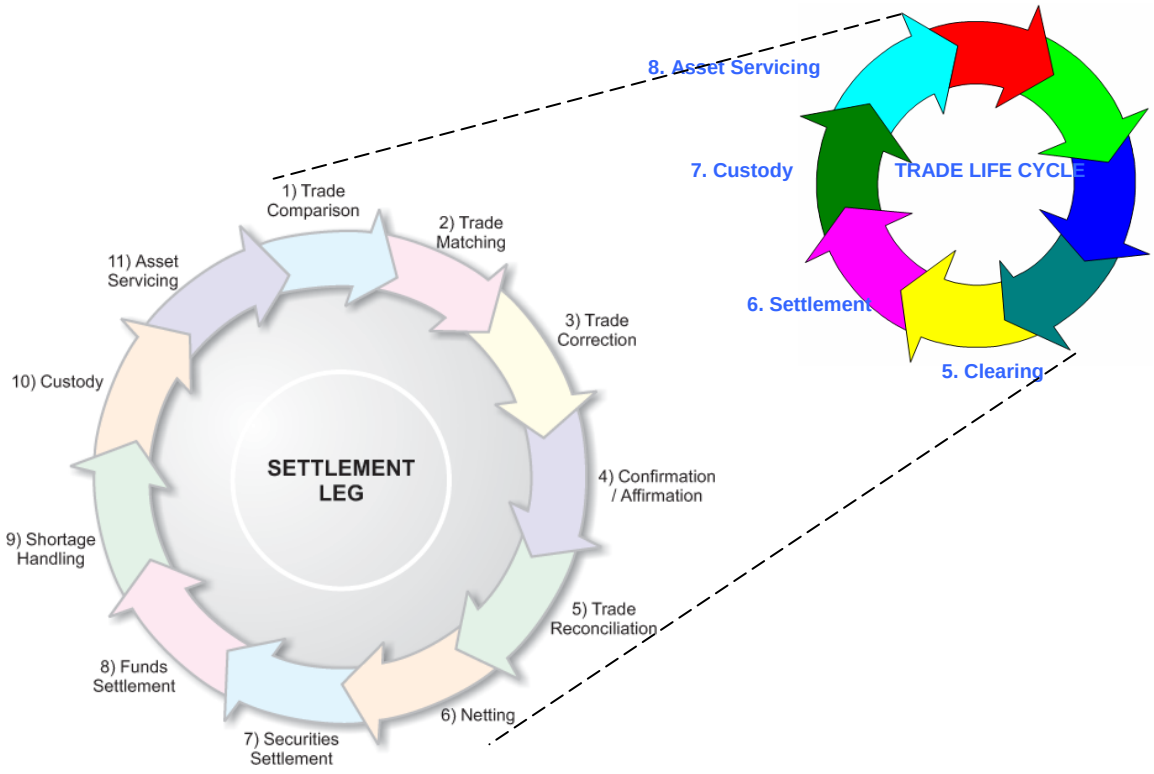
The Trade Life cycle can be broken down into two parts:

1. Trade Leg
2. Post Trade Leg

Trade Leg

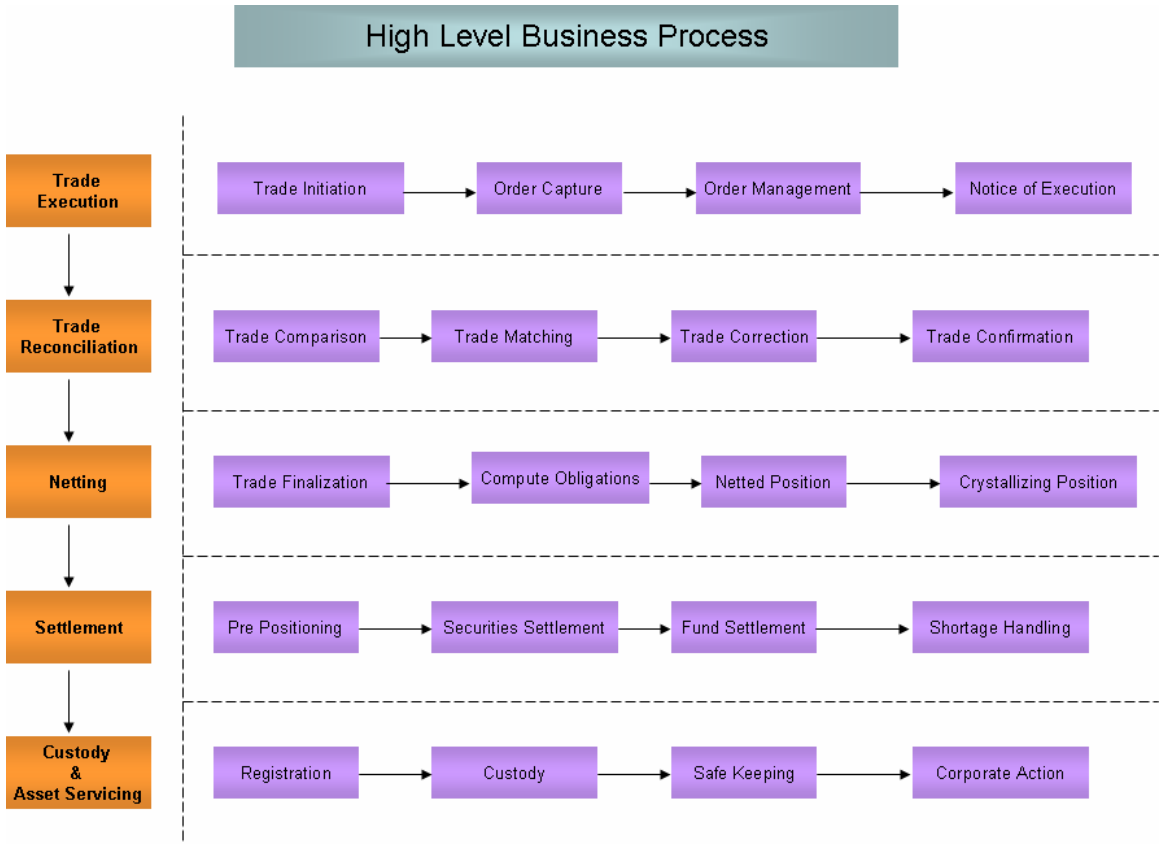
All Activities till the time the trade is executed and a conclusive proof in the nature of an Electronic Contract Note or a Notice of Execution is generated can be called as the Trade Leg

Post Trade Leg



All activities after a trade is made are called as post trade. It includes all the activities that follow the trade execution till the time the buyer gets the securities and the seller gets the money value of the securities sold and can also include registry, custody and servicing them.

3.6.1 High Level Processes



The process of clearing and settling a securities trade includes several key steps: the confirmation of the terms of the trade by the direct market participants; the calculation of the obligations of the counterparties resulting from the confirmation process, known as clearance; and the final transfer of securities (delivery) in exchange for final transfer of funds (payment) in order to settle the obligations. In addition, other important activities may take place within or ancillary to each of these steps. Such activities include the confirmation of trade details between direct market participants and indirect market participants (institutional investors and foreign investors or their agents), the communication of settlement instructions to central securities depositories and to custodians that many investors employ to safekeep their securities, and the registration of the ownership of shares.

The process begins with the execution of the trade. A trade execution system may be “An open outcry” system (that have traditionally been used on stock exchanges), Electronic Communication Networks (ECN) - the networks of telecommunications links that have traditionally been used in the over-the-counter markets or an automated trade execution system based on links between computers.

Once a trade is executed, the next step is to ensure that the counterparties to the trade (the buyer and the seller) agree on the terms of the transaction - the security involved, the price, the amount to be exchanged, the settlement date and the counterparty. This step is referred to in some markets as trade matching and in others as trade comparison or checking. In automated trade execution systems counterparties often agree that trades will settle as recorded at the time of execution unless both agree to a cancellation. Such trades are referred to as “locked-in” trades. In other trade execution systems, Matching is typically performed by an exchange, a clearing corporation or trade association, or by the settlement system. Direct market participants may execute trades not only for their own accounts but also for the accounts of customers, including institutional investors and retail investors. In this case, the direct market participant may be required to notify its customer (or its agent) of the details of the trade and allow the customer to positively affirm the details, a process referred to as trade confirmation or affirmation.

Trade matching and confirmation set the stage for trade clearance, that is, for the computation of the obligations of the counterparties to make deliveries or payments on the settlement date. The obligations arising from securities trades are sometimes subject to netting. Multilateral netting arrangements, for example, include position netting schemes as well as systems that involve substitution of a central counterparty and novation of trades with that central counterparty.

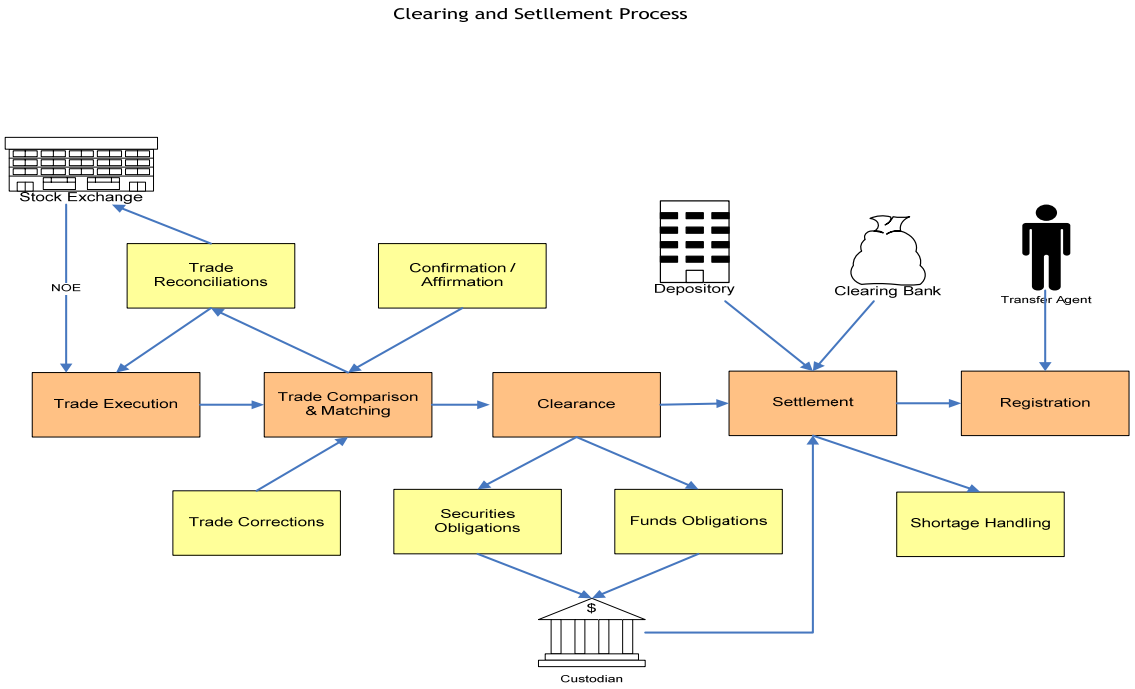
Once the obligations of the market participants have been calculated, whether on a gross basis or on a net basis, the instructions to transfer the securities and funds (monies) necessary to discharge the obligations are transmitted to the entity or entities that operate the settlement system. These instructions may be prepared by the counterparties themselves or by an exchange or clearing system. If trades have not previously been matched, the settlement system would typically perform this function before initiating processing of the transfer instructions. Other action may be required of participants before settlement can proceed, such as the pre-positioning of securities, funds or collateral.

Settlement of a securities trade involves the transfer of the securities from the seller to the buyer and the transfer of funds from the buyer to the seller. Historically, securities transfers involved the physical movement of certificates. However in recent years, securities transfers have increasingly occurred by book-entry. This has been possible due to establishment of central securities depositories that provide a facility for holding securities in either a certificated or an uncertificated (dematerialised) form and permit the transfer of these holdings through book entry. A central securities depository may also offer funds accounts and permit funds transfers as a means of payment, or funds transfers.

Often a transfer that has been executed by such Settlement Systems, in the sense that books have been debited and credited, is a provisional transfer, that is, a conditional transfer in which one or more parties retain the right by law or agreement to rescind the transfer. If the transfer can be rescinded by the sender of the instruction (the seller of the security or the payer of money), the transfer is said to be revocable. Even if the transfer is an irrevocable transfer, some other party (often the system operator) may have authority to rescind it, in which case it would still be considered provisional. Not until a later stage does the transfer become a final transfer, that is, an irrevocable and unconditional transfer that effects a discharge of the obligation to make the transfer. Only the final transfer of a security by the

seller to the buyer constitutes delivery, while only final transfer of funds from the buyer to the seller constitutes payment. When delivery and payment have occurred, the settlement process is completed.

For example, the whole Clearing & Settlement process and other Post Trade Activities has been captured in the diagram below:



3.7 Detailed Trade Life Cycle

3.7.1 Trade Initiation

The trade process is initiated in a variety of ways in which a customer decides either to buy or sell securities. The customer goes to either a Broker/ Dealer or a bank's trading desk through its investment manager. The bank in turn would coordinate with a broker who has access to the exchange. The client sends across his order details through communication network. The client order contains standard features like:

- Buy or Sell
- Specific Quantity
- Specific Security

The broker typically records the order if the order has been placed through a broker. Otherwise the trader directly maintains the details of the order.

3.7.2 Order Management (Trade Routing)

The order is placed by the client usually through a telecommunication network and is normally passed to either the exchange floor or to over-the-counter trading desk. The order management process consists of Entering orders, order modification, order cancellation. The order capture process is done through appropriate trade entry applications. The process is to capture the order details i.e. identification of the security to be traded, the quantity, limit price, order duration and exchanges. The client places the order and specifies the Operation i.e. either buy/sell, Quantity, Security Name and the Price. The order condition can be attached to the timing; price and quantity of the order, which is considered when the broker executes/matches the trade. The clients also modify/ cancel the order if the order has not been processed.

3.7.3 Trade Execution

The trade execution is carried out on a stock exchange after an order is placed. Order modification and / or order cancellation is required to handle any abnormality. An order is entered into the trading system by the brokers and they specify the information regarding the trade details. The trade details typically contain information like Security Name, Quantity, Price, Order Duration etc. The order is entered into the order book and gets executed as per the price and time condition as specified in the order. The order matching for the execution takes place in the stock exchange. The order modification and order cancellation take place before the order gets executed i.e. if the order is there in the order books of the exchange and is waiting to be executed; the request for order modification is entertained by the stock exchange. The stock exchange prepares a NOE (Note of Execution) with the trade details and sends it across to the Broker / Dealer and to the Clearing Corporation giving details of the trade. The date the trade is executed is known as the Trade Date, and is referred as 'T' or 'T+0'.

The order execution process for a customer's sell order (individual investor placing order through a broker) goes through the following cycle:

- Customer places a sell order through the Internet or to the account executive of the brokerage group.
- The account executive sends the order to its corresponding floor broker or to its trading desk.
- The order execution takes place on the floor of the exchange such as on NYSE, AMEX etc.
- The exchange sends a Notification of sell to the Firm's representative on the exchange as well as the trading desk of the brokerage group.
- The Firm's representative on the exchange floor sends a notification of the sell to the floor broker which is then matched with the counter party broker.

The trade execution results in identifying the following trade components:

- **Trade Date:** The trade date is the date on which the parties have agreed to execute the trade. It has an impact on the following:
    - *Entitlement to income on Equity:* In most of the case the entitlement to dividend from equity is directly related to the trade date. So if the trade date is incorrect a buyer may lose entitlement.
    - *Entitlement to Accrued interest on Bonds:* The trade date is normally linked to the value date of the trade and in most markets; the value date is used for the calculation of the accrued interest on bonds.
- **Trade Time:** The trade time is required mostly for regulatory purpose. As in most of the world markets, the trade time in terms of exact minute and hour is required for the regulatory compliance. It can be also be used to settle the trade disputes if any like the quantity difference. It also helps the regulator keep track of the price fluctuation relative to the trade time with a view to identify abnormal trading activity.
- **Value Date:** The value date of the trade is the intended date for exchange of securities and the cash. This is also known as the contractual settlement date. This is different from the actual settlement date when the actual exchange of securities and cash rakes place. The period between the trade date and the value date is known as Settlement cycle.
- **Operation:** The operation of the trade refers to the direction of the trade i.e., buy or sell.
- **Quantity:** This refers to the quantity of the security that is bought or sold.
- **Security:** This refers to the name of the security that is bought or sold
- **Price:** This refers to the price at which the two parties have agreed to trade.

3.7.4 Trade Enrichment

The process of trade enrichment involves the selection, calculation and attachment to a trade of relevant information necessary for efficiently servicing the clients. The trade components, which require enrichment, are:

- **Calculation of cash value:** The cash value calculation is done keeping the trade components in consideration.
    - *Operation:* The operation type like buying and selling can affect the cash value calculation. For e.g. the purchase of equity attracts stamp duty in UK but sale does not. Also the sellers of US equity are required to pay a fee to the Securities and Exchange Commission.
    - *Security Group:* The cash value calculation is done keeping the security group in consideration. For e.g. the stamp duty is payable on Irish securities and not on Japanese securities.
- **Counter party Trade confirmation requirement:** The trade details need to be enriched to determine if the counter party needs the trade confirmation and if it needs the trade confirmation, the format in which the confirmation would be send across to it.
- **Selection of Custodian details:** The client might have multiple accounts with single or multiple Custodians. The investor would send the Custodian details at which the settlement would take place. The trade details are enriched with the account number of the Custodian, which will handle the cash / securities settlement.

- **Methods of Transaction reporting:** Transaction reporting depends upon the security group as well as the country in which the transaction has occurred. For e.g. the UK equities may require one method of reporting whereas the international bonds would require another method.

3.7.5 Trade Validation

Trade validation is a process of checking the data contained in the fully enriched trade, in order to reduce the possibility of erroneous information being sent to the client (in case of institutional client). Also incorrect trade related information can lead to delay in the settlement or even in settlement failure. The validation of trade can be effected manually or automatically according to the availability of the system. The basic trade related information that are validated are:

- **Trade Date:**
  - Should be 'Today' for a new trade.
  - Cannot be in the future
  - Should be 'Today' or in near past for the amended trade.
  - Cannot be after the value date of the trade

- **Trade Time:**
  - Cannot be in the future

- **Value Date:**
  - Is normally the standard settlement cycle for the security group (e.g. T+3 for Canadian equities).
  - Cannot be earlier than the trade date
  - Should be a business date in the location of settlement

- **Operation:**
  - Typically this cannot be verified, as there is no means of checking except going back and checking with the order management system.

- **Quantity:**
  - Cannot be less than the minimum denomination of the bond.
  - Must be in multiples of the minimum denomination of the bond
  - Is normally in multiples of board lot for equities

- **Security:**
  - Cannot be a matured bond.

- Cannot be an expired warrant

- **Price:**
  - It must be expressed as per the security group.
  - Share price must be an amount per share
  - Bond prices must be either yield or a percentage relevant to face value.

- **Trade Cash Value:**
  - Must be quantity * price (unit or percentage) plus or minus other costs such as stamp duty where relevant.

- **Accrued Days:**
  - It must be relevant to the last coupon payment date and value date of the trade.

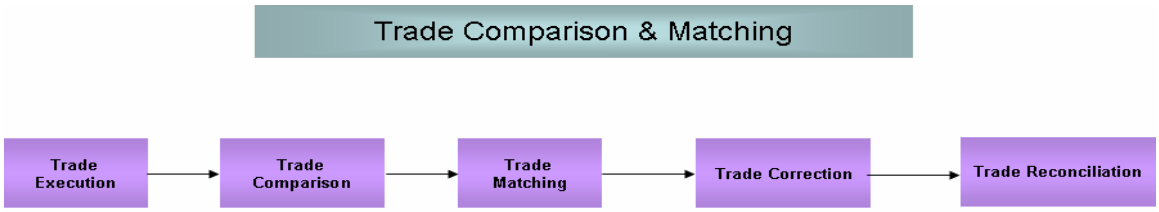
- **Accrued Interest:**
  - It must be relevant to the quantity, accrued days and coupon rate.

3.7.6 Trade Comparison

The Clearing Corporation matches the trades entered by the buying and selling parties to the trade. Unmatched trades are verified for their accuracy and the counterparties are contacted for amendments.

3.7.7 Trade Matching

Trades input by the counterparties to the trade, are compared and matched based on the matching criteria. Counterparties are informed about the status of their Trade which may be 'Matched'; 'Unmatched', 'Pending Match' and similar other statuses. Market participants then would need to make amendments to the trades input by them to facilitate matching. Trades that are matched are Netted.



Once a trade is executed, the first step in the clearing and settlement process is to ensure that the counterparties to the trade (the buyer and the seller) agree on the terms of the trade. This can be achieved by the process of Trade Comparison and Matching. The trade comparison strategy requires both parties to trade, the buyer and the seller, to report the trade details to the Clearing Corporation. Trades that "match" in detail are processed by the Clearing Corporation. This process of trade comparison and matching can take place in a variety of ways, and the trading mechanism itself often determines how it occurs.

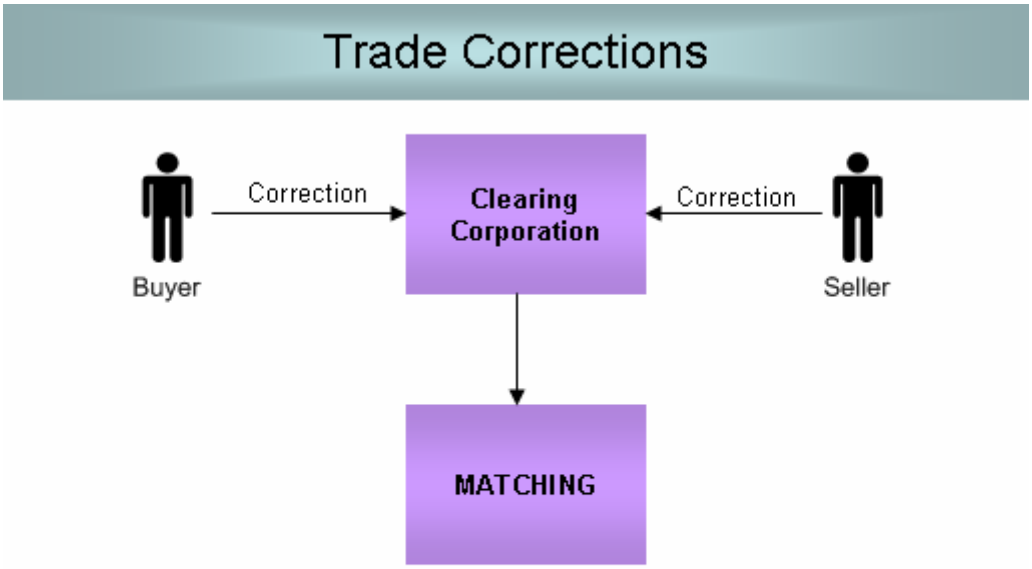
In an trading environment which is not automated – Open Outcry System, trades may be struck by member inter-se in designated trading areas called as 'Trading Rings' or 'Trading Pits' or over the phones (based on types of securities traded). In such an environment trades need to be compared and matched by Exchanges, Clearing Corporations, Trade Associations, etc, based on data submitted to them by the counterparties which may include the security involved, the price, the amount involved, the settlement date and the counterparty.

A Screen based Trading System typically takes the form of an anonymous electronic order driven or quote driven system. The comparison and matching process is implicit in such a system where the system, based on set parameters, matches the counterparties' order or quotes and automatically produces a confirmed trade between the two counterparties. Electronic contract notes issued by the buying and selling broker to their clients become a conclusive evidence of a trade having occurred on the stated security at the state price.

In over-the- counter markets, counterparties submit the terms of the trade to each other for verification by some mechanism, be it fax, S.W.I.F.T. message, or perhaps some specialized electronic messaging and matching service.

The primary advantage of adopting the Trade Comparison strategy is that it supports the earliest possible comparison of trade details and allows problems to be identified much earlier in the processing stream.

3.7.8 Trade Corrections

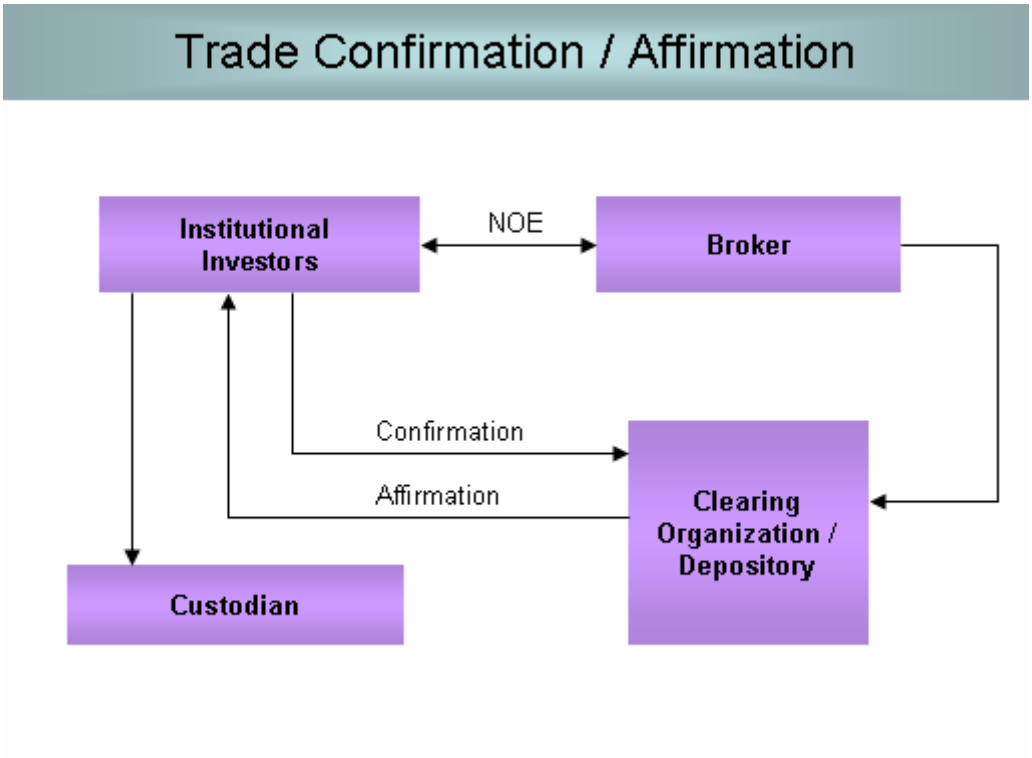


Errors in trade data are one of the major impediments to timely trade settlement. Corrections must be completed as early as possible in the trade cycle. The Clearing organization establishes methodologies for handling errors in trade reporting.

One strategy in dealing with errors is to simply report all errors to the parties involved, delete the transaction in error and require re-submission of a new transaction. Another strategy is for trades that are unmatched are reported to both parties for correction. The Clearing organization would be unable to determine validity of the trade submissions and would, therefore either request resubmission or maintain the unmatched trade in the system to provide the parties an opportunity to modify details.

3.7.9 Trade Confirmation / Affirmation

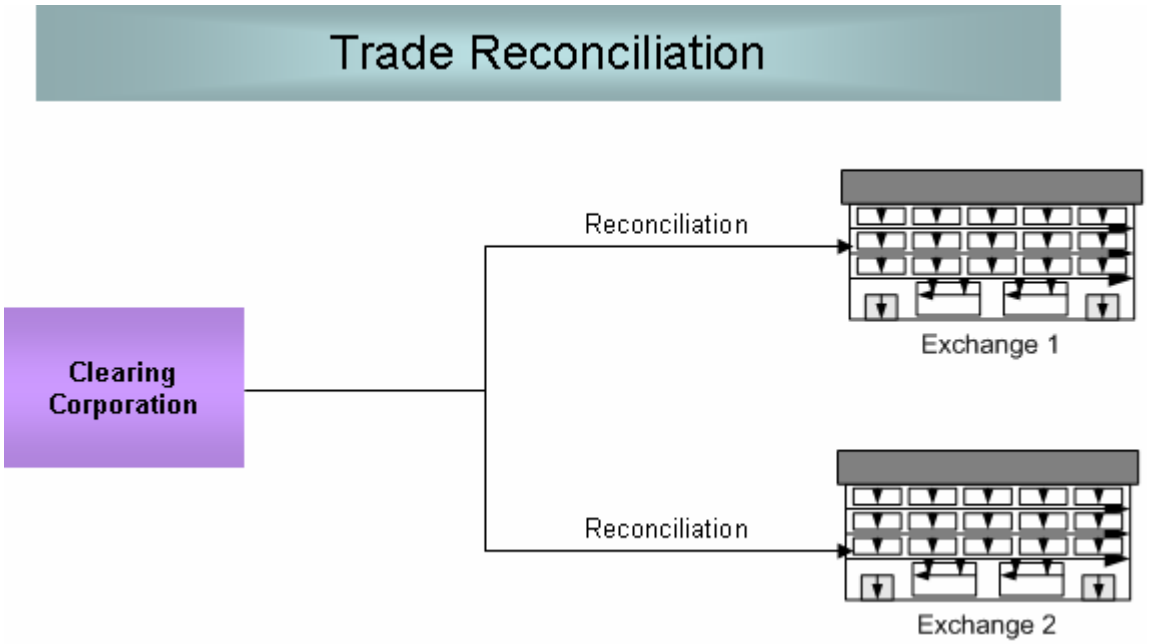
The process of confirmation and affirmation is more specific to Institutional Trades. Institutional Investors typically use the help of a custodian to handle their clearing and settlement activities. A trade is confirmed as executed by the Investment Manager's executing broker. The broker's confirmation may need to be Affirmed by the Investment Manager or the Custodian of the Investment Manager. Only Confirmed / Affirmed trades would be taken up for comparison and matching with the counterparty



Because the counterparties to trades are often acting on behalf of others (typically institutional trades), an important ancillary part of the trade confirmation process is also the transmission of trade information to these ultimate investors. In order for settlement to be completed, investors must confirm trade details and issue instructions for the proper positioning of funds and securities. The process by which indirect market participants confirm the details of transactions (referred to as affirmation) is important because it provides an early indication of trades for which delivery may be problematic.

Currently, the process by which indirect market participants confirm trades can be complex, in part because information may need to be transmitted to the direct market participant about the allocation of trades among various accounts of the indirect participant. Additional complexity often arises in cross-border trades because multiple intermediaries and custodians are involved. Efforts are under way to simplify and automate this process to reduce costs and improve the efficiency of the clearing and settlement process. Automation efforts - referred to as straight-through processing of securities transactions, focus on developing systems that require data to be entered only once in the clearing and settlement process.

3.7.10 Trade Reconciliation



The Clearing corporation could contribute to greater efficiencies amongst it participants by providing a mechanism to verify participants' trade reporting record to that of the Clearing organization. The trade reconciliation process is of particular importance for market participants' whose trades are reported to the Clearing organization by the Stock Exchange(s). The participant could provide a transmission of their trading record to be compared to the Stock Exchange information. The Clearing corporation can provide an exception or out – of – balance report which alerts the participant to transactions which require immediate attention. Trade Reconciliation performed systematically by the Clearing Corporation enhances the accuracy and efficiency of trade reporting and affirmation processing.

3.7.11 Clearance

After trades have been confirmed / affirmed, the next step in the process is clearance, the computation of the obligations of the counterparties to make deliveries or to make payments on the settlement date. Clearance typically occurs in one of two ways. Many systems compute the obligations for every trade individually. That is, clearance occurs on a gross or trade for trade basis. In other systems, the obligations are subject to netting.

In some markets, a central counterparty interposes itself between the counterparties to a securities trade, taking on each party's obligation in relation to the other. By achieving netting of the underlying trade obligations, the use of a central counterparty reduces credit risk, both replacement cost and principal risk, and liquidity risk for the trade counterparties. Netting arrangements are increasingly common in securities markets with high volumes of trades because netting produces very significant reductions in gross exposures in such markets. Trade or obligation netting arrangements should be distinguished from settlement or payment netting arrangements, in which underlying obligations are

not extinguished but funds or securities transfer instructions are settled on a net basis. Clearance can also be continuous (typically when settlement of a transaction is on a gross basis) or discrete (typically when settlement is on a net basis). Securities markets may avail of a central counter party (CCP), which is an entity that interposes itself legally between the buyers and sellers of securities by a process of "**novation**". The process of Novation reduces the counter party risk in clearing and settlement process. As a consequence, the buyers and sellers of securities interact directly with the CCP and remain anonymous to each other.

Every trade has two sides: - buy side and sell side. The Clearing Corporation assists the two parties by obtaining trade details from both the parties and comparing them. The Clearing Corporation obtains the trade details on the evening of the trading date, processes the data and compares both sides of the trade to verify the agreement on both sides of the trades. If agreement exists, the trade is recorded as a compared trade. The buying and selling brokers receive from a Clearing Corporation a daily report called a contract sheet detailing all the trade details.

Securities Settlement

This actual process of honouring the member Securities obligations is called as Securities Settlement. This involves pre-positioning of securities. In a physical environment, as on the Securities Pay-In Date the settlement agent (typically a custodian in case of Institutional Trades) would make arrangements for the physical movement of securities to the Clearing Corporation. As also on the Pay-Out date the Settlement Agent (typically a custodian in case of Institutional Trades) would need to make arrangements to collect the Securities from the Clearing Corporation if he / she has net receivable positions as per his / her computed obligations.

Funds Settlement

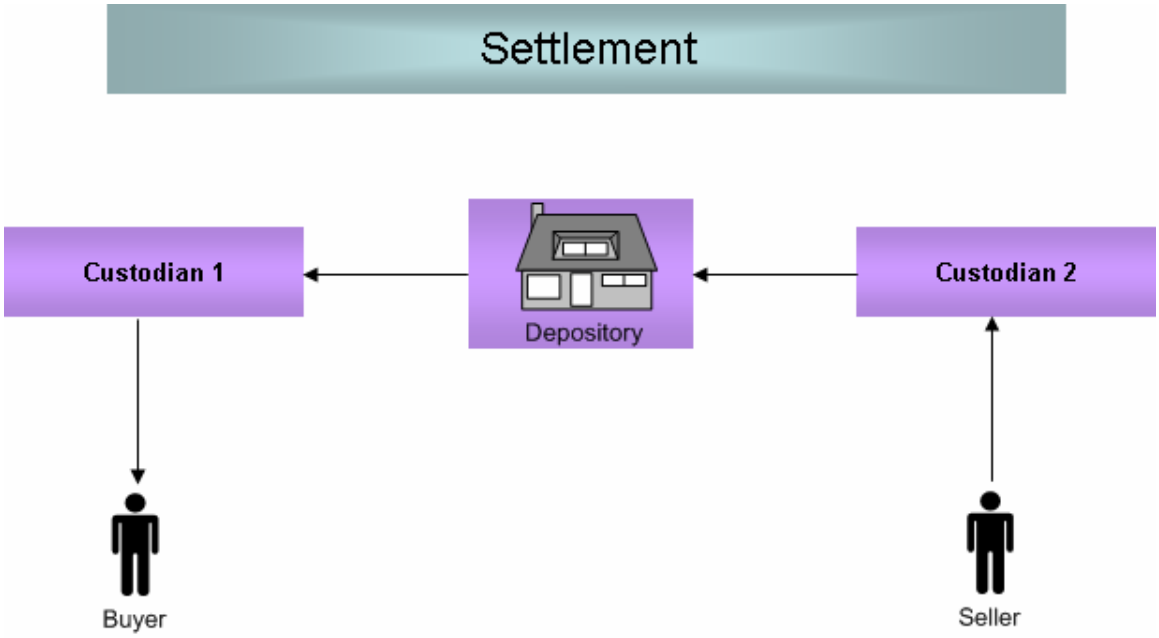
The actual process of honouring the Member Funds obligations is called as Funds Settlement. The Member needs to make available clear funds as on the cut of time of the Funds Pay-In Date as determined by the Settlement System for the settlement of his / her Funds Obligations in case he / she owes money to the Clearing Corporation. The Member's Bank Accounts are credited with funds due to the Clearing Member if he /she is the net receiver of funds from the Clearing Organization.

Handling Shortages

A shortage occurs when a Clearing member is unable to fulfil his /her securities or funds related pay-in obligations. In order to address Securities Shortages, Clearing & Settlement organizations have agreements with Securities Lending Institutions who lend securities to the Clearing & Settlement organizations to successfully complete the settlement. As also for addressing Funds related shortages, Clearing & Settlement organizations typically have in place Lines of Credit agreements with banks who lend for completing funds settlements.

3.8 Key Settlement Principles

3.8.1 Settlement



The “Settlement” function involves the exchange of securities and funds between two parties to a transaction. Settlement of a securities trade involves the final transfer of the securities from the seller to the buyer and the final transfer of funds from the buyer to the seller. Historically, securities transfers involved the physical movement of certificates. Problems of paper attributed the basic reason for inefficiencies in the Settlement Process. Elimination of the physical movement of paper would bring about greater efficiencies in the capital markets. Book entry transfer of securities and funds is a key element of efficient settlement systems. Many clearing and settlement organizations have understood this and world over there have emerged two ways to reduce the physical movement of paper. Immobilization and dematerialization enable securities transfers to occur through accounting entries on the books of the central depository.

3.8.2 Immobilization

The ability to effect book entry transfers is created through the immobilization of securities into central depository. Immobilization involves participants depositing their physical holdings of certificates in exchange for a book entry on the records of the depository. Once immobilized, entries in the records of the depository rather than physical movements of securities are used to trigger settlement. Immobilization in a depository often involves the use of a “nominee name”. All of the securities deposited are registered to the name of the nominee.

3.8.3 Dematerialization

One step beyond immobilization is the elimination of certificates altogether (dematerialization). Most of the efficiencies are attained by immobilization but dematerialization can eliminate many problems associated with clearing and settlement systems. For example the process for safekeeping, depositing and withdrawing certificates can be eliminated if securities are dematerialized. Most markets with centralized clearing and settlement operate with immobilization.

3.8.4 Settlement Cycle

Most markets have the concept of a Settlement Cycle. The cycle starts immediately after the trade execution. The length of the cycle determines the level of efficiency in the post trade process and consequently the entire Trade life cycle in the country in question. Markets are said to be efficient when the gap between the Trade Date and Settlement Date is as close as possible.

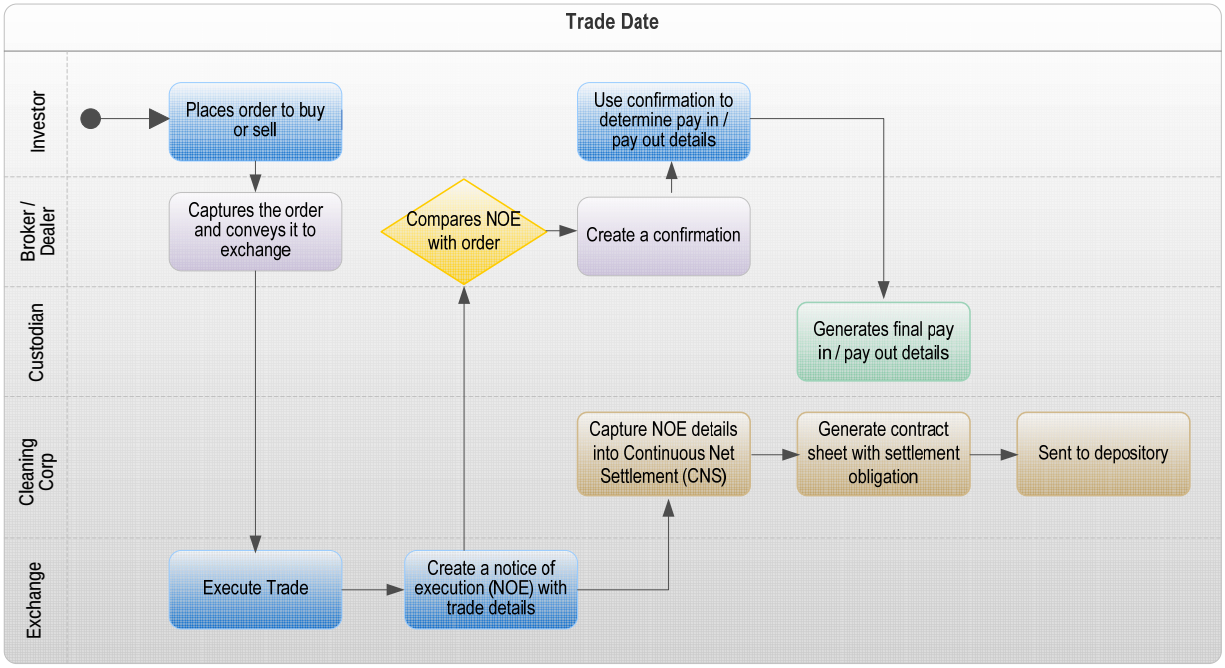
Account Period Settlement

In an account period settlement cycle the Trading occurs for a period of time (number of days). All the trades done during this period are aggregated as at the end of the predefined number of days, netted and settled. For example trading may occur from Monday through Friday, All the trades done till Friday from Monday may be netted on the following Monday and settled on the following Friday.

Rolling Settlement

In this type of settlement every Trading Day is considered separately. Trades are not aggregated for a period of time as is the case with Account Period Settlement. Thus every Trade Date will have a corresponding Settlement Date. Trades done for a given date are netted and settled on the Settlement Date. Thus for instance a T+3 Rolling Settlement would indicate that for Trades done on day T the settlement would occur on Day T+3

The United States follows a rolling T+3 Settlement cycle. The following summarizes the process flows that occur on each day till settlement in the United States for the equities segment:



Trade Date (T): Retail Trades

- ✓ Step 1: The transaction begins with the investor wishing to invest in equity. He contacts his broker (Trading Member) with an order to buy and similarly an investor contacts his broker (sell side) to sell the securities.

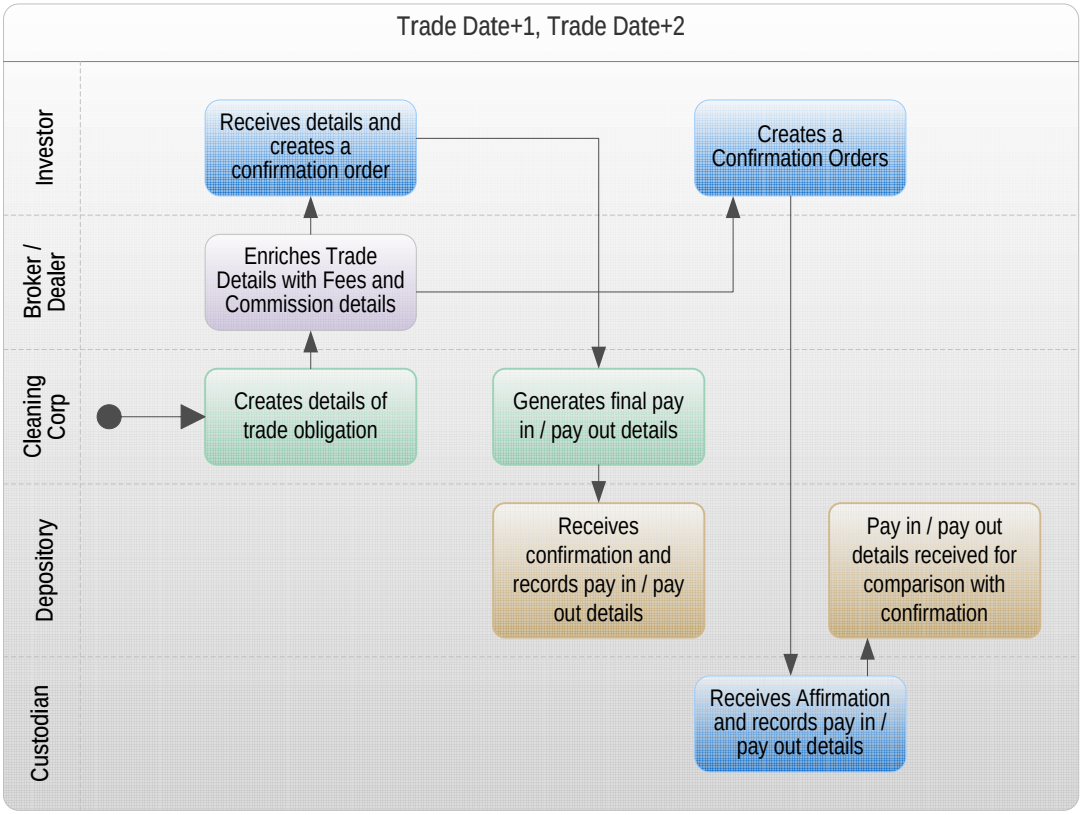
- ✓ Step 2: The Trading Member places a trade request on the exchange. This may be an automated order or quote driven exchange or a physical trading pit where a deal may be struck.

- ✓ Step 3: The trade execution takes place in the exchange as per the conditions specified in the order. In case of an un-automated or an Open outcry System, the exchange prepares a NOE (Notice of Execution) and sends out to the Trading Member and the Clearing Corporation. In case of an automated exchange the conclusive evidence o the trade is generated by the system itself typically called as the 'Contract Note'

- ✓ Step 4: The Clearing Corporation receives the trade details i.e. the quantity, price, counterparty etc) from the exchange. It matches them and sends Matched Reports to the Counterparties. Unmatched trades need to be amended by the Counterparties. The matched trade details are entered into the Continuous net settlement system to obtain the net positions for a Trading Member at the end of the day. The Clearing Corporation prepares an Obligation Statement with end of day positions for Clearing Member associated to the Trading Member and sends it across to the depository. (For retail trades, Trading Member and the Clearing Member typically are the same)

- ✓ Step 5: The Clearing Members confirm the movement of securities to / from their security accounts. As also they instruct their bankers to move their fund pay-in obligations to the

Depository's Settlement Account.



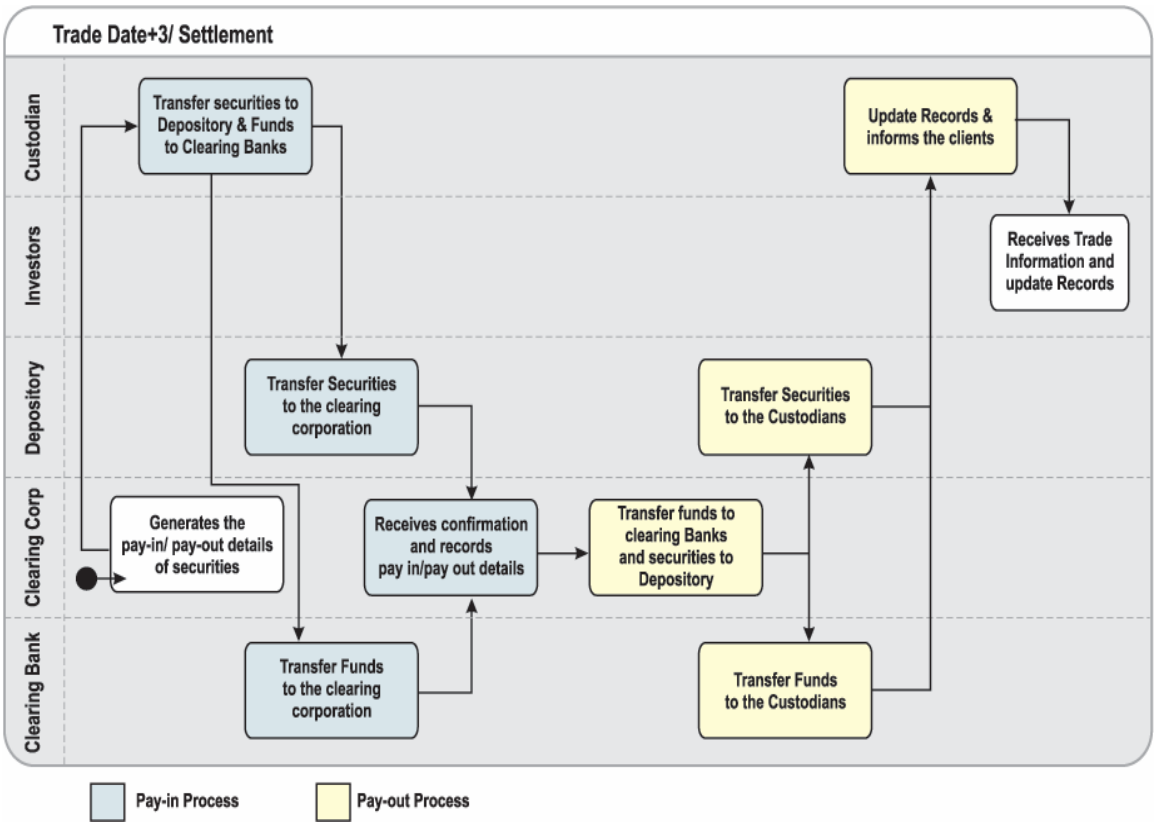
Trade Date +1/2 (T+1/2) – Institutional Trades

- ✓ Step 1: For an institutional trade, The Trading Member enriches the trade details with the fees, commission and other tax related details and send across the confirmation to the client.

- ✓ Step 2: The client (typically a financial institution) affirms the trade or it may request the settlement agent (typically a custodian) to affirm the trades on its behalf and sends it across to the custodians about the possible pay in/out of securities and funds.

- ✓ Step 3: The Clearing Corporation performs netting of all confirmed and or confirmed / affirmed trades to arrive at the net receivables and payables for both securities and funds leg of transactions (typically refereed to as Final Obligations).

- ✓ Step 4: The Custodians preposition Securities, Funds and Collaterals based on Clearing Corporation's Final obligation and confirms the Securities movement to the Depository. Also the Custodian instructs its bank to move the Clearing Member's fund obligations to the Depository's Settlement Account



Trade date + 3(T+3)

- ✓ Step 1: Pay In of securities & Funds: As of the designated cut off time the Securities move electronically to the Depository. Based on the instructions provided to the bankers there is also an electronic fund transfer to the Depository's Settlement Account.

- ✓ Step 2: Pay out of Securities & Funds: If the Clearing Members fulfil their pay-in, Clearing Corporation advises the Depository to release the Clearing Members' payouts. The Depository is a Fed Wire Member – registered as a limited purpose bank (In other countries, the Depository is typically a member of a Systemically Important Payment System of that country). This is essential for ensuring Delivery Versus Payment in Securities Settlements.

3.8.5 Payment

The quality of payments between a clearing and settlement organization and its participants is crucial to an efficient and low-risk environment. The criteria that needs to be applied to these payments is that they should be 'certain', 'final', 'unconditional' and 'irrevocable'. Centralized clearing and settlement services are 'zero – sum games'. If good payments are not received by the clearing and settlement organizations, it cannot make good payments to participants. Participants request (demand) absolute assurances of the payments they are due to receive. The clearing & settlement

organization can only provide these assurances of payment if it obtains the same assurances regarding payments it is to receive from participants.

Certainty of Payment

Payment Certainty is the cornerstone of efficient clearing and settlement systems. Clearing and settlement organizations ensure that the participants who own funds will in fact make these payments. A degree of certainty that this will occur can be achieved by limiting the potential size of payments that may be owed. Participants are required to keep sufficient liquidity to make unlikely the possibility that a payment will not be received.

Finality of Payment

The form of payment received by the clearing and Settlement Company is important in the consideration of its quality. For example a cheque is no necessarily a 'final' form of payment considering the fact that 'A stop cheque instruction' is not very difficult. Similarly procedures may be available to stop processing of an electronic funds transfer. Finality of payments is ensured by clearing corporations by stipulating certain forms of payments that are difficult or impossible to interrupt during payments clearing processes

Unconditional and Irrevocable

The form of payments received by the clearing and settlement organization cannot be conditional on the occurrence or non occurrence of a specified event. Once payment items have been received and cleared through the payments systems, the payment cannot be subsequently reversed. This is the principle of Unconditional and Irrevocable Payments. Such situations can arise if the institution on which the payment was drawn becomes insolvent. Clearing and settlement organizations may impose restrictions on the choice of the payment methods and institutions on whom acceptable payments may be drawn to address the said risk.

3.9 Delivery Versus Payment (DVP) principle

DVP is an important characteristic of efficient settlement systems. The goal of DVP is achieve a simultaneous exchange of securities and payment. High quality of payments must be received by the clearing and settlement organization. Certainty, finality, irrevocability and unconditionality are the characteristics of high quality payments. By far the largest source of credit risk in securities settlement and, therefore, the most likely source of systemic risk is the principal risk that may arise on the settlement date. Such principal risk can be eliminated if the securities settlement system adheres to the principle of delivery versus payment (DVP), that is, if it creates a mechanism that ensures that delivery occurs if and only if payment occurs. Furthermore, by eliminating concerns about principal risk, DVP reduces the likelihood that participants will withhold deliveries or payments when financial markets are under stress, thereby reducing liquidity risk. However, not all securities settlement arrangements currently achieve DVP. In some cases the linkage that exists between delivery and payment is, nonetheless, sufficiently strong to make a loss of principal by a participant seem a remote possibility. But in other cases book-entry securities transfer systems have been created that neither provide, nor are linked to, a money transfer system.

Achievement of DVP eliminates principal risk (and contributes to the reduction of liquidity risk), but it does not eliminate replacement cost risk or liquidity risk.

World over there are three common structural approaches or models for achieving DVP for linking delivery and payment in a securities settlement system

DVP 1: Systems that settle transfer instructions for both securities and funds on a trade-by-trade (gross) basis, with final (unconditional) transfer of securities from the seller to the buyer (delivery) occurring at the same time as final transfer of funds from the buyer to the seller (payment)

DVP 2: Systems that settle securities transfer instructions on a gross basis with final transfer of securities from the seller to the buyer (delivery) occurring throughout the processing cycle, but settle funds transfer instructions on a net basis, with final transfer of funds from the buyer to the seller (payment) occurring at the end of the processing cycle;

DVP 3: Systems that settle transfer instructions for both securities and funds on a net basis, with final transfers of both securities and funds occurring at the end of the processing cycle

4 Corporate Actions

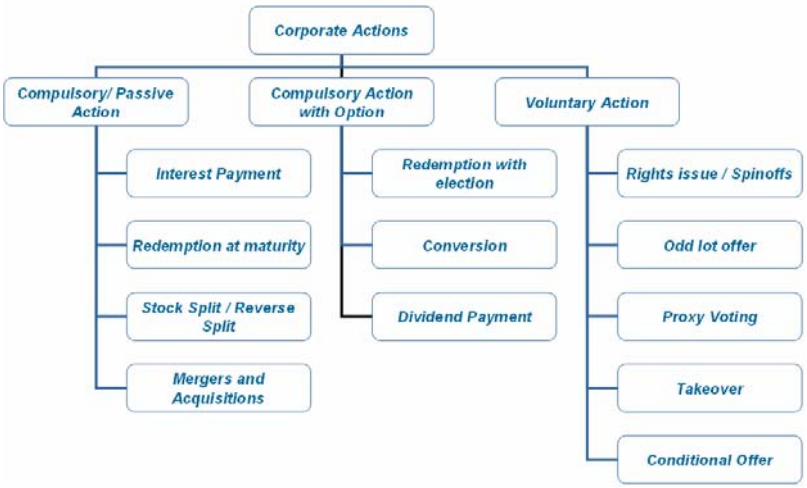
4.1 Introduction to Corporate Actions

Corporate action events are an integral feature of today's capital markets. They take place whenever changes are made to the capital structure or financial position of an issuer of a security that affect any of the securities it has issued. Rights issues, tender offers, conversions, takeovers, mergers, early redemptions and dividend payments are just a few examples. Close to 1m corporate actions take place every year worldwide. A single event may involve hundreds of different market participants (including custodians, fund managers, broker/dealers and depositories), ultimately cascading down to thousands of investors. Each of these participants faces high risk because corporate action processing is complicated, deadline-driven, not standardized, and to a large extent still manual.

In the past few years, concerns about corporate actions have been raised by, among others, the Group of Thirty, the Giovannini Group, the Committee for European Securities Regulators and the European Central Bank. These organizations have advocated bringing greater efficiency and standardization to corporate action processes, and some industry initiatives have been launched to work towards these aims. This reflects an increasing awareness in the securities industry that corporate action processing involves significant risks, and that corporate actions are not just a 'back-office' issue but also have an impact on trading strategies in the front office, and the efficiency of capital markets more broadly.

When a publicly-traded company issues a corporate action, it is initiating a process that will bring actual change to its stock. By understanding these different types of processes and their effects, an investor can have a clearer picture of what a corporate action indicates about a company's financial affairs and how that action will influence the company's share price and performance. This knowledge, in turn, will aid the investor in determining whether to buy or sell the stock in question.

Corporate actions are typically agreed upon by a company's board of directors and authorized by the shareholders.



One relevant classification distinguishes between:

- **Compulsory (or mandatory or passive) actions**, such as cash dividend and interest payments, where no action is required by the investor or its intermediaries;
- **Compulsory actions with options**, such as scrip dividends, where the shareholders are given the option to receive dividends in the form of further units of the security rather than in cash;
- **Voluntary (or optional) actions**, such as subscriptions and takeovers, where a decision is required by the investor or its agents.

4.2 Types of Corporate Actions

The following are the various types of corporate actions encountered more commonly:

Dividend Payment: one of the most basic passive actions is the dividend payment to equity-holders in a firm. However, even this action is not as straightforward as might be assumed, since there may be the option to reinvest dividends in shares, which requires investor approval ('scrip dividends'). If this option is passed up by default (for example, through an oversight), this may be costly; for example, resulting in a substantial positive adjustment to the share price afterwards.

There are two types of dividends a company can issue: cash and stock dividends. Typically only one or the other is issued at a specific period of time (either quarterly, bi-annually or yearly) but both may occur simultaneously. When a dividend is declared and issued, the equity of a company is affected because the distributable equity (retained earnings and/or paid-in capital) is reduced. Accordingly, the options need to be communicated to the investor and the corporate action initiated.

A cash dividend is straightforward. For each share owned, a certain amount of money is distributed to each shareholder. Thus, if an investor owns 100 shares and the cash dividend is $0.50 per share, the owner will receive $50 in total.

A stock dividend also comes from distributable equity but in the form of stock instead of cash. A stock dividend of 10%, for example, means that for every 10 shares owned, the shareholder receives an additional share. If the company has 1,000,000 shares outstanding (common stock), the stock

dividend would increase the company's outstanding shares to a total of 1,100,000. The increase in shares outstanding, however, dilutes the earnings per share, so the stock price would decrease.

Interest Payment: income payment for fixed income securities analogous to dividends. Once again, this is a compulsory action, although, compared with dividend payments, the issue of reinvestment is less important.

Redemption: this relates to the repayment of fixed-income securities or preference share capital, which is a mandatory corporate action (although optional redemptions also exist). Redemptions at maturity are repayments in full, in accordance with the terms and conditions of the issue. Partial redemptions can occur before the final maturity date, and may involve fixed or different amounts. They commonly involve a lottery in which the issuer draws a proportion of the outstanding interest-bearing securities that are to be redeemed.

Redemption with/without election: this refers to the option given to the registered owner (wherever applicable) to act on the instructions of the beneficial owner. The registered owner has or does not have the option to elect either a cash repayment or new securities. Accordingly, the complexity of the corporate action changes based on the two options.

Rights issue: A company implementing a rights issue is offering additional and/or new shares but only to already existing shareholders. The existing shareholders are given the right to purchase or receive these shares before they are offered to the public. A rights issue regularly takes place in the form of a stock split, and can indicate that existing shareholders are being offered a chance to take advantage of a promising new development. This is an optional action, to the extent that investors must choose whether to take up their rights to the new shares, usually at a discount. This also forms a corporate action with a deadline, and, as such, a failure with regard to rights issues could be particularly damaging for the issuing organization.

Odd Lot offer: An “odd-lot” offer is one where the listed company intends reducing administrative costs resulting from a large number of “odd-lot” holders. An “odd-lot” means a total holding of less than 100 securities. In all instances a three-way election must be provided for holders (all registered owners) of odd lots (and where applicable for the benefit of beneficial owners) the option of either:

- Electing to retain their odd-lot holding;
- Electing to top up their holding to 100 securities or a round lot of securities; or
- Electing to sell their odd-lot holding,
- And failing an election, the odd lot will be sold for the benefit of registered owners (and where applicable for the benefit of beneficial owners).

Accordingly, the corporate action is initiated and the options communicated to shareholders. This corporate action doesn't take place in markets where shares are traded in dematerialised form as the regular lot is 1 in these markets.

Conversion: Holders of convertible debentures, convertible preference shares-, deferred shares and options have the right to convert all or part of such instruments into ordinary shares for a short period each year and by a certain closing date. Sometimes holders of such instruments have to pay a conversion take-up price. The securities are compulsorily convertible. Investors have the option to convert all or part of their holding. Convertible bonds may, on occasion, have conditions attached as to when they may be converted.

i. **Conversion – Auto (Full):** is an event where all/part of the issued securities of a class are automatically converted into new securities of a different class by the issuer, without an election, i.e. holder of the security receives a new security in place of the old security. Not all the securities are converted in the case of a partial conversion.

ii. **Conversion – Election (Full/Partial):** is an event where the registered owners, where applicable acting on instructions of beneficial owners, are entitled to elect whether they wish to convert all or a specified portion of the issued securities of a class held by them into new securities of a different class. The holder of the security receives a new security in place of the old security. The holder has the election to convert if and when the investor chooses to, in line with the terms.

The corporate event in this case would be to inform the owners of the bonds of the time window for conversion, in order to allow them to make an informed decision on whether to convert.

Proxy voting: investors appoint 'proxies' and submit voting instructions (usually at the annual general meeting, but sometimes on other special occasions), thereby exercising the voting rights that accompany the shares.

Stock Splits: As the name implies, a stock split divides each of the outstanding shares of a company, thereby lowering the price per share - the market will adjust the price on the day the action is implemented. A stock split, however, is a non-event, meaning that it does not affect a company's equity, or its market capitalization. Only the number of shares outstanding change, so a stock split does not directly change the value or net assets of a company.

A company announcing a 2-for-1 (2:1) stock split, for example, will distribute an additional share for every one outstanding share, so the total shares outstanding will double. If the company had 50 shares outstanding, it will have 100 after the stock split. At the same time, because the value of the company and its shares did not change, the price per share will drop by half. So if the pre-split price was $100 per share, the new price will be $50 per share.

The result of the 2-for-1 stock split in our example above is two-fold: (1) the drop in share price will make the stock more attractive to a wider pool of investors, and (2) the increase in available shares outstanding on the stock exchange will make the stock more available to interested buyers.

A split can also be referred to in percentage terms. Thus, a 2 for 1 (2:1) split can also be termed a stock split of 100%. A 3 for 2 split (3:2) would be a 50% split, and so on.

Add to all this the complexity of following various norms within the industry

In UK, a one-for-one stock distribution means the holder of a security receives one new share for each share held. In the U.S. market, however this is known as a “two-for-one” stock distribution. The potential for mistakes from this is considerable. The repercussions simply in adjusting the traders’ P&L on the day following a mistake is simply unimaginable.

Reverse Split: *A* reverse split might be implemented by a company that would like to increase the price of its shares. If a $1 stock had a reverse split of 1 for 10 (1:10), holders would have to trade in 10 of their old shares for one new one, but the stock would increase from $1 to $10 per share (retaining the same market capitalization). A company may decide to use a reverse split to shed its status as a "penny stock". Other times companies may use a reverse split to drive out small investors.

Mergers and Acquisitions: A merger occurs when two or more companies combine into one while all parties involved mutually agree to the terms of the merge. The merger usually occurs when when two (or more) companies combine to form a single entity. Shareholders get shares in the new entity in proportion to their holdings before the merger. If a company undergoes a merger, it may indicate to shareholders that the company has confidence in its ability to take on more responsibilities. On the other hand, a merger could also indicate a shrinking industry in which smaller companies are being combined with larger corporations.

In the case of an acquisition, however, a company seeks out and buys a majority stake of a target company's shares; the shares are not swapped or merged. Acquisitions can often be friendly but are at times hostile, meaning that the acquired company does not find it favourable that a majority of its shares was bought by another entity.

A reverse merger can also occur. This happens when a private company acquires an already publicly-listed company (albeit one that is not successful). The private company in essence turns into the publicly-traded company to gain trading status without having to go through the tedious process of the initial public offering. Thus, the private company merges with the public company, which is usually small at the time of the merger, and usually changes its name and issues new shares.

Takeover: this is clearly an optional corporate action, in that investors have to choose whether to sell their shareholding to the potential acquirer of the company. Once again, there is usually a deadline

upon which the option to act expires. As such, failure to act or some reason (oversight or a processing failure) can again be costly, since it may imply forgoing opportunities for earnings enhancement. In addition, in a merger or takeover, shareholders may be offered cash or shares in the new entity; failure to exercise such an option may be costly to the shareholder due to subsequent share-price movements. Takeovers can be particularly complex events, since offers may be revised at various points in time, thereby significantly altering the event, or even creating a new event. Moreover, other bidders ('white knights') may come into play as well, creating yet another event.

Conditional Offer: This is an optional corporate action, wherein an offer is made to the shareholders of a company conditional to the occurrence of some event. Typically, where a takeover bid is being made, the predator will make an offer to shareholders conditional to it being accepted by more than 50% of the shareholders.

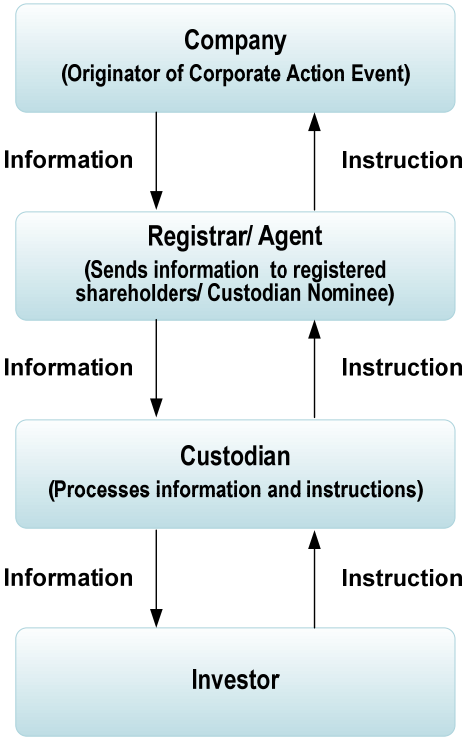
Spin Offs: A spin off occurs when an existing publicly-traded company sells a part of its assets or distributes new shares in order to create a newly independent company. Often the new shares will be offered through a rights issue to existing shareholders before they are offered to new investors (if at all). Depending on the situation, a spin-off could be indicative of a company ready to take on a new challenge or one that is restructuring or refocusing the activities of the main business.

4.3 Participants in Corporate Action

Following are the participants in corporate actions:

- Company
- Registrar/Agent
- Custodian
- Investor

The following figure shows the contractual / business relationships between the participants:



Company: Company is where the corporate action originates. Regulation usually requires the company to announce the corporate action publicly. In practice, this information dissemination normally involves two channels:

- Contacting the registered shareholders directly—the company knows who these registered shareholders are through the appointed registrar/agent or the central securities depository (CSD).
- Making a public statement, either through a press release, or, by issuing a public notice to the respective stock exchange were its stocks are listed. This information is then typically dispersed to interested parties through data vendors and other media.

Registrar/Transfer Agent: Registrar/Transfer agents occupy a central role in the issuance of securities and the subsequent transfer of such securities resulting from sales, purchases, reorganizations, tender offers, and other transfers of ownership. Transfer agents plays an important role in corporate action activities like initial issuance, stock dividends, stock splits and dividend reinvestment etc. Registrar forms an important link in the chain from issuers to investors.

Custodians: A custodian is a bank or other institution that holds securities on behalf of investors. The tasks performed by a custodian include:

- Safekeeping of securities
- Delivering or accepting traded securities
- Performing Corporate Actions like collecting interest, or dividend payments on held securities

Institutional investors usually appoint a custodian bank to safeguard their securities holdings. The service-level agreement between institutional investors and custodians typically covers administrative tasks such as settlement of trades and processing of corporate actions. Custodians, in turn, have an account at the CSD, where securities are ultimately held. Custodians are registered at the registrar/agent or CSD as the owner of the security on behalf of investors and any corporate action notices from the company are passed on by custodians to investors.

Investors: Typically, investors usually appoint a custodian to safeguard their assets. Investors mostly keep the decision-making responsibilities to themselves. However, sometimes through the agreements, investors may delegate the responsibility for dealing with corporate actions to the custodians.

4.3.1 Business Process of Corporate Action Processing

Receiving Corporate Action: The information regarding the corporate action is received from a number of external sources. As the same corporate action data is supplied by many different sources, a hierarchy of sources is maintained to prioritize the obtained data.

Notification of Corporate Action: The notification is generated for the client for Voluntary and Mandatory Corporate Actions. The notification process ensures that the client receives the information of the corporate action.

Maintaining Response of Corporate Action: The corporate action response is maintained for voluntary corporate action responses and compulsory action with option against expiration dates on a daily basis until the client responds with instructions.

Processing of Corporate Action: In this stage, the processing of the corporate action is done to update the records of the bank. As per the feedback received from the client in case of voluntary actions, the records for the client are updated in the records of the banks. A similar update is done for the mandatory types of corporate actions.

4.4 Income Processing

Custodians are responsible for collecting income payments received from the assets held under custody. The income payments typically take the form of dividends on equity securities and interest on bonds and cash equivalents. Custodians calculate the projected payments and inform the customers accordingly in advance. This enables the customers to plan investment decisions and use the proceeds effectively. The bank's internal controls for income collection also include an income map procedure that details each client's expected income from a particular security.

Contractual income payments are posted to the customer's account on the date they are due rather than the date they are received by the Custodian whereas the actual income payments are posted to the customer's account on the date they are received by the Custodian.

4.4.1 Business Process of Income Processing

Receiving Corporate Announcement: The Custodians are dependent on external vendors to receive corporate action information. These vendors are specialized in providing information across the globe. Some of the common vendor feeds used are those from JJ Kenny, DTC, Telekurs, Reuters etc. The information collected is in the form of announcements regarding interest (coupon) payments for registered bonds, dividend payment for equities, income payment for ADR securities, mutual funds, private placement securities etc.

Generating Payment Obligation: A payment obligation is a liability owned by the client. The payment obligation for a client is generated from the data regarding the corporate announcement. The payment obligation is generated for the pending payments that are due to the client. Also the cash projection for the client depending upon corporate announcements is calculated.

Account Maintenance: Details regarding the trade are tracked and the corresponding account is updated. The trade details are maintained and the details regarding the transaction are captured and recorded.

Payment Settlement: The payment settlement stage encompasses entire process of payment receipt, payment reconciliation, and payment reversal.

4.5 Proxy Voting

Custodians provide proxy-voting service to clients who want to exercise their rights as shareholders of a company during the general meetings. If personal attendance is not possible, the shareholder may appoint a representative to attend the meeting and vote by proxy. A Custodian helps investors to exercise their votes by providing a proxy voting service for all manner of general meetings wherever this service is available.

4.5.1 Business Process Involved in Proxy Services

Receiving Corporate Announcement: The corporate announcement regarding the agenda of General Body Meeting or Extraordinary General Body Meeting is captured from external vendors

Notification to Client: The Custodians notify the clients about the proxy services by providing the details of the corporate announcement.

Maintaining Response of Client: The client's response to the corporate announcement is maintained on a daily basis until the client responds with instructions. The client's response is

obtained by an email or fax. The response typically involves receiving client authorization to represent him at the meeting and vote on his behalf.

4.6 Tax Processing

Custodians provide services to minimize foreign withholding taxes or reclaim taxes withheld for their customers. The tax treaties between countries often reduce withholding taxes and exempt capital gains from taxes. The purpose of tax treaties is to reduce the possibility of double taxation on income earned in foreign countries. In addition, some countries provide reduced tax withholding rates for certain types of investments (government bonds, for example) or for certain types of investors (investors exempt from taxation in their home country, for example). Tax treaty benefits may provide for reduced withholding tax at the time the interest or dividend is paid ("relief at source"), while other treaties may require the investor to file for a refund after the fact ("reclaim"). Custodian files a form or statement on behalf of the client, certifying the investor's tax status and country of residence for tax purposes. Custodian keeps track of the tax rates for each of the countries in which it provides custody. Dividends, interest, and capital gains may all be taxed at different rates. The Custodian also maintains information about the tax treaties within its custody network, and whether its customers qualify for relief under the treaty.

4.6.1 Business Process of Tax Handling

Maintaining Tax Information: The tax related information like standard tax rates, exemptions and reductions available under local laws are maintained. The details specifying the reduced rates available by virtue of double taxation treaties are made available to the client. The market tax reports, summarizing local taxes for each market are provided to the client.

Tax Calculation: The tax calculation process captures trade details and applies the corresponding tax rates for computation of the tax.

Tax Reclamation: The tax reclamation process is used to reclaim the extra tax paid by the client. It can be of two types:

Contractual Tax Reclaims: In this kind of reclamation the client's cash account is credited with entitlements to tax relief according to a pre-determined schedule of time-frames, in place of when the tax refund monies are received. The contractual time frame may be 'n' months after the income pay date (where the value of n varies according to the market concerned) or payment may be made, less a discount, with income payment. This can greatly assist clients in managing available funds.

Non-contractual Tax Reclaims: In this type where tax relief is not obtained at source, the excess tax withholding is reclaimed. The bank prepares the required reclaim form and completes the associated reclaim process, pursuing items as appropriate and reporting their status to the clients.

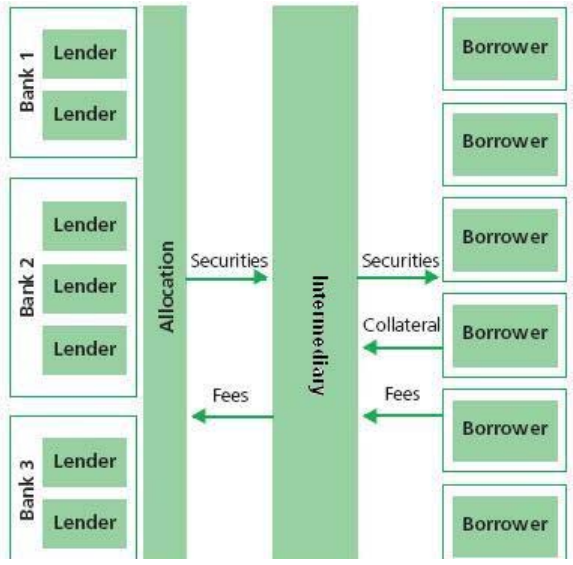
5 Securities Lending

5.1 Introduction

Securities lending is the temporary transfer of a security by its owner to another investor or financial intermediary. Once the securities have settled, the title and voting rights are transferred to the borrower, who can sell or re-lend the borrowed securities during the life of the loan. In return, the borrower agrees to return the loaned securities, secure the loan with collateral of equal or greater value than the loaned securities during the life of the loan, pay any user fees (implicit or explicit), and remit to the lender any dividends, coupon interest or other distributions that occur during the time the securities are on loan. Therefore, securities lending transaction is essentially a temporary, collateralized loan of securities by the lender to a borrower for a fee. Securities lending adds liquidity and efficiency to the markets and supports trading activities and strategies.

Over the last decade securities lending has become a prominent value-added service offering to the customers of a Custodian and is a major source of revenue for the Custodian banks across the globe. Traditionally bank Custodians had been the primary lending agent of customer securities but in the recent times various third party intermediaries have also started participating in the lending business. Besides wholesale intermediaries who conduct transactions directly with the lender and borrower, there are niche intermediaries as well who specialize in particular types of securities and also in collateral management.

The basic process of securities lending is depicted below:



5.1.1 Origins

Securities lending market came into existence in the United States during 1960s through the inter-dealer market. However, in the '70s the lenders first began lending securities to brokers on behalf of their clients. The demand for lending business increased with the changing strategies of securities trade and usage of electronic forms in trading. During '80s with an increased volume of business and revenues derived from lending, the participants realized the necessity of introducing protocols for trading, collateral management and margins. This period also witnessed an increased popularity for international lending with the resolution of long pending issues w.r.t. legal norms, tax agreements between countries and regulatory norms of each country. This resulted in the development of an international lending market where securities lending transactions were settled on the books of foreign sub-Custodians. The globalization of securities markets and consolidation of financial intermediaries boosted the growth of securities lending business in the '90s making it a dominant revenue earner for Custodians.

5.1.2 Different Types of Securities Lending

Most securities loan is collateralized either with other securities or with cash deposits. Where lenders take securities as collateral, they are paid a fee by the borrower. The lender will typically specify the type of securities that are acceptable (e.g. government securities, minimum credit rating). Value of the collateral provided generally exceeds the value of the securities loaned by a margin. The fee may also vary with the supply and demand for the security borrowed. E.g. if Treasury bond futures are maturing, the 'cheapest to deliver' Treasury bond will demand a higher fee than other treasury bonds. Parties who are short on the future will want to borrow that bond and deliver it against the future.

If securities lending is collateralized with cash, the transaction is equivalent to a **Repo**. By contrast here the borrower receives a negotiated rate of return (the rebate rate) on the collateral. The rebate rate is typically based on benchmark rates such as the Fed Funds rate, the Repo rate or LIBOR. The lender is entitled to retain any income earned on the reinvestment of the cash collateral in excess of the rebate rate. The lender and the lending agent (Custodian) split the excess income (in case of cash collateral) or the fee (in case of security collateral). These transactions are predominantly motivated by the lending bank's need for cash rather than borrower's need for a particular security. The transaction becomes similar to a cash loan collateralized by the loaned security.

5.2 Market Constituents

Typical securities lending market comprises of following:

Borrowers: These are Investment Banks, broker/dealers, intermediaries or Hedge Funds who require securities that they do not possess at that instant to meet their trade obligations.

Lenders: A lender is a financial institute that possesses assets in the form of equities and fixed income securities and participates in the market either directly or indirectly through an agent.

Securities and Collateral: The security borrowed and the financial instrument kept with the lender as collateral. Usually security, cash or letters of credit are accepted as collateral.

The Intermediaries: The Securities Lending market involves various types of intermediary firms which take principal and/or agency roles. These firms act as an intermediary (agent) between the underlying owners of securities and the borrowers of securities. A principal firm establishes a relationship directly with the owner of the securities (the Lender) and is borrowing for its own purposes

Agent intermediaries include:

- Asset Managers: An entity that is responsible for the management of money invested on behalf of individual and institutional customers. The term is often used to describe an entity that specifically focuses on a particular type of asset class. However, basically all Asset Managers provide a similar service.
- Custodian: A custodian guards, protects or maintains property. A custodian for a security or financial instrument may perform any number of specified administrative functions for fees; and, for the convenience of the actual owner, a custodian may, even, be registered as the owner of the security. However, the custodial relationship does not give the custodian a level of control over or rights to the property which a trustee would hold. For instance, the contract permitting the use of the custodian's name as the registered owner of the security explicitly precludes the custodian taking any action to transfer ownership to another party or, even, that registration to another name without an instruction from the owner.
- Third-party Agents: Lenders who offer an alternative to custodian banks. These firms tend to specialize in one or more categories of assets and are very thinly capitalized. Their sole focus is securities lending. A custodian bank can also act as a third party lending agent when it offers its lending services without custody of the assets.

Principal intermediaries include:

- Broker/Dealer - A firm that acts both as a broker and as a dealer. A broker acts as an agent for their customers, and a dealer acts on of their own behalf. These firms typically act as a Principal when borrowing directly from a lender. Broker dealers borrow securities for a wide range of reasons, including, market making, to support proprietary trading and on behalf of clients.
- Specialist Intermediaries – Historically, regulatory controls in Stock Lending markets gave rise to a high level of intermediaries. Some specialize in intermediating between stock lenders and market makers.
- Prime Brokers – Serve the needs of hedge funds and other ‘alternative’ investment managers. Services provided by prime brokers include: Securities Lending, leverage of financing provision, trade execution, clearance, custody and reporting.

5.3 Business Drivers of Securities Lending

5.3.1 Why Entities Lend?

Lenders participate in Securities Lending in order to capture incremental returns from their securities which would otherwise be lying dormant in their investment accounts. Incremental income is realized in different ways dependant upon the collateral taken for the loan. If the collateral is in the form of cash, this cash is invested so as to earn an increment above the level of the rebate to be paid to the borrower for the use of the cash. A fee is paid to the lender when the collateral is in the form of securities or letters of credit.

The characteristics of a good lender generally include the following:

- **Diversified portfolio:** lenders have a greater choice of securities to lend.
- **Position size:** Borrowers seek to borrow the majority of the securities it needs from a single source (a lending agent or directly from a lender).
- **Passive trading strategies:** (An investment strategy involving limited ongoing buying and selling actions. Passive investors will purchase investments with the intention of long-term appreciation and limited maintenance) active trading strategies increase the likelihood of recalls, making their securities less attractive than those in more passively managed portfolios.

Those lenders with securities portfolios of sufficient size to make securities lending worthwhile, could include:

- Pension Fund operators
- Insurance and Assurance fund operators
- Other collective investment scheme operators
- Endowments
- Foundations
- Not-For-Profit Organizations

5.3.2 Why Entities Borrow?

Why Organizations borrow stock can be categorized into four broad groups.

Borrowing for Failed Trades: A failed trade may be defined as one where delivery cannot be completed because of insufficient securities available. This is not deliberate policy, but is caused by any number of general administrative problems. Borrowings to cover fails are mostly small and short in duration (one to five days). The borrower keeps the loan open only until he can complete delivery of the underlying trade.

An example of this type of transaction occurs when a broker's client sells stock, but fails to deliver the securities to his broker. The broker borrows the stock, settles the trade and places the resultant

settlement funds on deposit. He thereby earns interest on this cash and avoids fail fines. He then unwinds the loan once the client has delivered his securities.

Borrowing for Margin Requirements: Securities are also borrowed to meet margin requirements, for example at the Exchange Traded Options Market. Securities can be borrowed cheaply and lodged as margin, rather than depositing cash.

Borrowing for Market Making and Proprietary Trading: Market Makers and Proprietary Traders are one of the largest borrowers of stock and are responsible for the majority of securities lending transactions. These traders sell stock for a variety of reasons, most of which are hedging related. Activities under this category include short selling, equity/share price index arbitrage, equity/ derivative arbitrage, and equity option hedging.

Intermediary Brokers: Intermediaries act between lenders and borrowers. For their services, the intermediary takes a spread. Many institutions find it convenient to lend stock to one or two intermediaries who then on-lend to many more counterparties. This saves administration and limits credit risks.

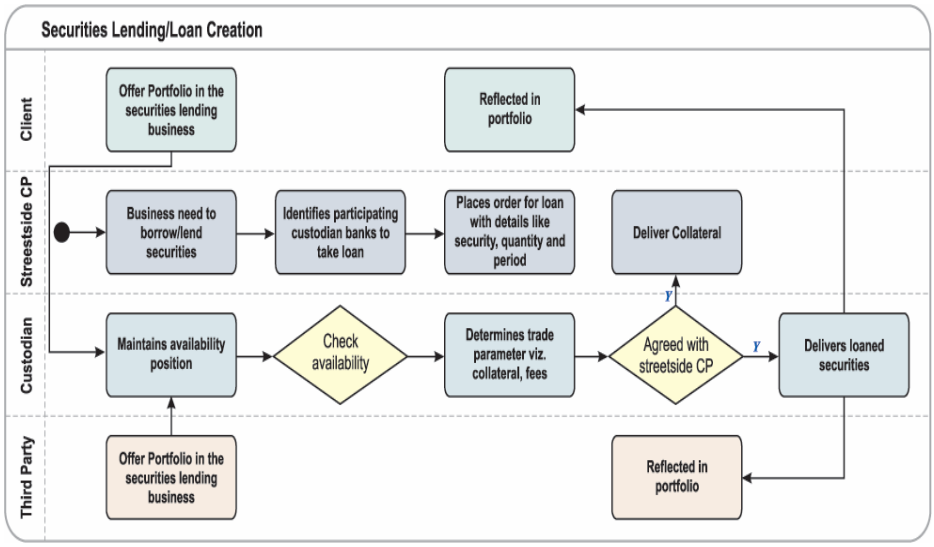
Another large class of transactions not involving a short comprises those motivated by lending in order to transfer ownership temporarily, an arrangement which can work to the advantage to both lender and borrower. For example:

Borrowers take advantage of those instances when a lender is subject to withholding tax on dividends or interest but the borrower, or the party to whom the borrower on-lends the security, may be subject to a more favourable tax rate. In such instances, the borrower expects to receive the dividend at a lower rate of tax, and, in exchange for this, it shares some of the benefit (difference between the tax rates) with the lender.

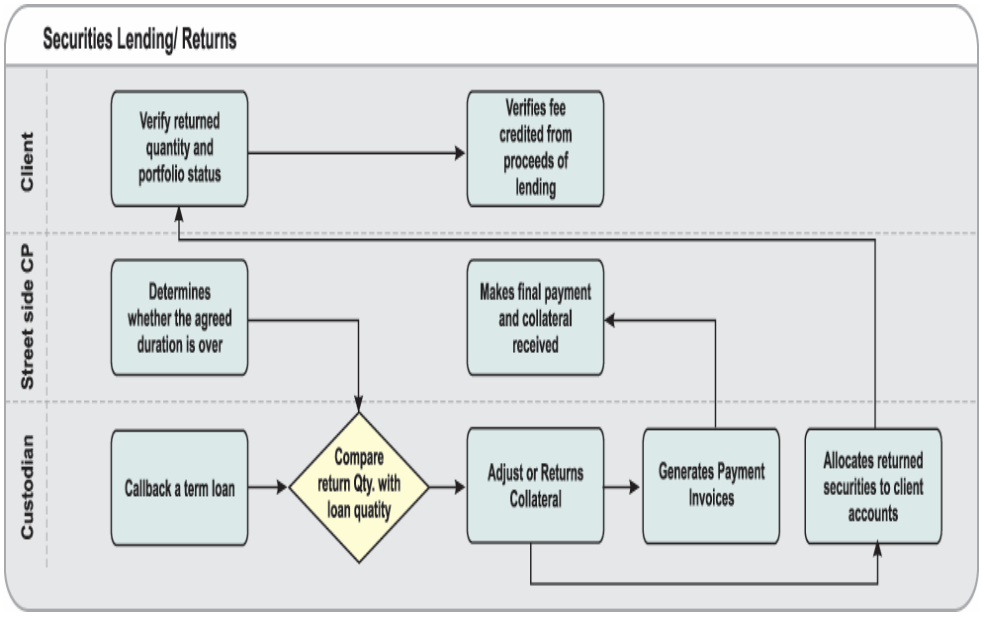
Where an issuer offers shareholders the choice of receiving a dividend in cash or reinvesting it in additional securities at a discount to the market price (DRIP), this may present an arbitrage opportunity to a borrower. They can source such securities from certain funds (e.g. index trackers) who do not take the more attractive DRIP alternative because their holdings would become larger than permitted under investment guidelines. This arbitrage provides the borrower with an economic benefit that is shared with the lender in the form of a favourable rebate or fee payment.

5.4 Securities Lending Workflow

5.4.1 Workflow – Loan Creation



5.4.2 Workflow – Loan Returns



5.5 Business Process of Securities Lending

Pre-requisites

The lending bank prepares a **Master Loan Agreement** before proceeding into securities lending transactions with a borrower. This agreement contains the duties and responsibilities of each party to manage risks related to a broker failure. The broad contents of the agreement can be:

- Structure of transaction details including legal title ownership
- Period of loan (maximum and minimum limits)
- Acceptable forms of collateral
- Norms to be used for collateral valuation and margins imposed
- Manufactured payments (necessitated by dividends or corporate actions that may be announced during the duration of the loan)
- Rebate rates (required for cash collateral) and fees to be charged
- Termination of loan and return of securities

Events of default

The lending bank is also required to prepare individual **Agency Agreement** with all its customers that accept this bank as its lending agent. The broad contents of this agreement can be:

- Acceptable forms of collateral and margin requirement
- Reinvestment of cash collateral
- Fee split and schedule
- Pre-approval of borrowers (sometimes this may also contain a pre-determined set of counterparties who will not be accepted as borrowers)
- Any applicable indemnification
- Loan termination clauses
- Norms of default in return

The lending banks to identify potential borrowers implement well-defined market driven processes. These borrowers are referred as **street-side counterparties** and their credit rating and acceptability is reviewed periodically hereafter. The factors considered for selection and ongoing review of borrowers are:

- Financial condition and capital adequacy
- Risk profile of loans taken i.e. how the borrower plans to use the securities lent to them
- Reputation of borrower (derived from market based credit ratings)

Based on these parameters, the bank prepares a borrowing limit for each of these counterparties. In cases, where the borrowers have business agreements with other lines of business of the lending bank, these agreements tend to cover the borrowing limit at a master level and not at an individual securities lending program level.

The lending and borrowing parties must abide by the laws and taxation applicable in the markets of their operation. Some legal constraints applicable in a market can restrict a party from participating in securities lending program. The parties must also abide by the tax laws applicable in their markets of operation. Some of the important considerations for calculating fees / gains generated from a lending agreement are:

- The borrower returns securities to the lender that are identical to those borrowed
- The borrower makes payments to the lender all dividends, interest and other distributions that the owner is entitled to during the period of loan
- The terms of the agreement does not reduce the lender's risk of loss and opportunity for gain on the security

5.5.1 Create a Loan Trade

The borrower approaches the lending bank directly or through some pre-determined agents with the request for a loan. The request comprises of:

- Securities required (Identification like ISIN, CUSIP, Valoren number)
- Quantity of securities required
- Period of loan (i.e. number of days)
- Offered forms of collateral (either of or a combination of accepted forms of collateral defined in the master agreement)
- Based on the availability of these securities with the lending bank, the trade is accepted.

5.5.2 Allocation of Securities

The lending bank manages a record of available positions for each security that can be loaned out. The sources of such securities are:

- **Managed pool:** securities available from accounts of customers who have agreed to offer their securities in the lending program of the bank
- **Third party accounts**: securities available from institutions who do not have a securities lending program of their own but participate in the lending business of this particular bank
- **Private Label accounts:** securities available from institutions similar to a third party but are not dedicated to one particular lending bank i.e. these accounts can offer their securities to multiple lending banks. These institutions can select to participate with the loan of a particular lending

bank based on the terms of the loan offered to them (i.e. fee split, dividend requirement, open/close-ended loan, period of loan and closure clauses)

Hence, the availability of securities with the lending bank is a summation of all the positions available from each of the participants mentioned above. The priority of allocation, in the event of a loan is also in the sequence mentioned above.

Allocation Example

Once the lending bank accepts a particular loan trade, it needs to allocate the quantity amongst its participants. There are various business algorithms in vogue to do an allocation, the most common amongst them being:

1. **Pro-rated allocation** – In this method of allocation, the total amount of loan is divided amongst the accounts pro-rated based on their individual positions

E.g. suppose the lending bank closes a loan of 1000 IBM securities. Its managed pool shows an availability of 5000 IBM securities amongst 3 accounts A, B and C where they possess 2000, 2000 and 1000 respectively.

Then the allocation will be as follows:
400 IBM stocks will be allocated from the account of A
400 IBM stocks will be allocated from the account of B
200 IBM stocks will be allocated from the account of C

2. **Preferential allocation** – In this allocation, the high-valued preferred accounts are given a priority in allocation. If they do not have the entire loan quantity in their accounts, then the remaining is distributed amongst other accounts

Upon allocation from the accounts, the quantity available for further loans are reduced from the positions – both at a pool level as well as in individual account levels. Hence, in E.g. 1 above, after completing the loan, the following effect will take place:

Total available positions of IBM for further loans = 4000 securities
Availability from Account A = 1600 securities
Availability from Account B = 1600 securities
Availability from Account C = 800 securities

5.5.3 De-allocation of securities

It may happen during the course of a loan, a particular account holder plans to sell-off a portion of the portfolio. In such cases, the lending bank needs to credit back the securities allocated from that account (i.e. de-allocate the loan) and allocate the amount to some other account. In such instances,

it may also happen that the lending bank is unable to locate the equivalent number of securities with any of their other accounts and is required to borrow it from some other bank in the market place to honour the lending agreement with its street-side counterparty.

5.5.4 Period of Loan

The period of loan can be of two forms:

- **Term Loan:** The loan given for a pre-determined period of time at the time of execution.
- **On-call Loan:** These are open-ended loans, which are given with a pre-condition that the lender can call back the loan whenever it requires to do so by providing a particular notice

On call loans usually generate lesser fees but saves the banks from complications arising out of de-allocation.

5.5.5 Loan Return

At the end of the loan period or within the duration of the loan, a borrower can return a part or whole of the quantity borrowed. The loan return can be of two types:

- **Full Return:** the borrower returns the entire quantity and takes back the collateral

  In case of full return, the lending bank returns the securities to their respective owners from whose accounts they were allocated.
- **Partial Return**: the borrower returns only a partial quantity of the loan (in between the lending period or at the termination of the loan)

In such cases, the lending bank credits the accounts of customers from where the loans were initiated based on a fairness business algorithm. The remaining quantity can be credited back to the customers by taking appropriate borrows from other customers or external counterparties. In cases where the account holder is not in a hurry to transact with the securities, the accounts are credited after the borrower returns the remaining quantity. In case of partial return, the lending bank also needs to do a re-evaluation of the collateral requirement and returns the excess collateral.

5.5.6 Settlement Process

The securities lent out to the borrower must follow the settlement cycle (described in appendix during trade and settlement life-cycle) in order to transfer the legal ownership of the securities from the lender to the borrower. This is reflected in the depository records and any corporate actions generated on the security will be credited to the borrower account. However, there will be manufactured calculations between the lender and borrower to debit the corporate actions from the borrower and credit the same to the lender.

5.5.7 Record-keeping and Reporting

There are various mandatory and regulatory reporting associated with the securities lending business of the bank. The regulatory reports are sent with information on statutory liquidity position, exposure limits and control, securities invested, compliance with prohibited stocks and funds and ageing report of bad loans.

In addition to these, there are other reports generated internally for risk management, stale price exposure (instances where current day's price is not available and mark to market is done with a previous business day's price), Profit & Loss (P&L) reporting, broker intimation, fees calculation, revenue recognition from completed trades and customer intimation on loan positions.

These norms and reporting necessitates detailed storage and retrieval of information. The banks implement book keeping practices to calculate operation cost and reflecting the P&L – on a daily, monthly and yearly basis.

5.5.8 Fees Calculation and Split

Fees are quoted in a lending trade as 'basis points'. A basis point is one one-hundredth of a percent. E.g. a fee of 150 basis points implies 1.5%.

The securities lending fee rate is applied to the market value of the loaned security daily and calculated on an actual over 360 day basis. There may be specific agreements with borrowers where the lending fee may be calculated on a 365-day basis. These daily fees accrue during the life span of the trade and are charged to the borrower either on a monthly basis or at the termination of the trade. The fees are subsequently split between the account holders from whom the loan was allocated and the lending bank.

5.5.9 Fails Lending

Loans that are not returned to the lender on the maturity date are considered fails. Such failure to return loaned securities results in assessment of penalty rate for the borrower. In order to meet the obligations to individual customers whose securities were used for the trade, the lender can either purchase the securities from marketplace or borrows them from another lender. The borrower receives availability information from potential lenders (with whom they have an existing fails lending agreement) on a daily or intra-day basis. In order to meet the trade obligations, the borrower can directly borrow the required quantity at pre-determined rates to create this trade. This saves the borrower opportunity cost of negotiating with the lending desk and go through the cycle of trade creation.

Collateral management for such trades is done automatically against a collateral pool maintained by the borrower with the lender. The lender adjusts the collateral requirement against the pool once the trade is created.

5.6 Market Information Requirement

In order to make intelligent decisions about a loan, the lending bank requires a variety of live market information on a daily or periodic basis. The key market information collected is as follows:

5.6.1 Static Data of Securities

The lending desk requires the current list of securities that are listed on the stock exchanges across the globe in order to execute a trade. The static data of security comprises:

- Security Identification (CUSIP, ISIN, Valoren number etc)
- Security type (i.e. common stock, preferred stock, bond, special purpose vehicles)
- Security details (i.e. name, type of business, markets where listed, coupon rates, trade lot sizes)
- Important dates (i.e. record date, dividend payout dates, book closing date)

5.6.2 Static Data of Counterparty

The lending desk requires the list of accepted borrowers who have signed the lending agreement with the lending bank. The counterparty details contain the following information:

- Counterparty identification (Name, address, address of incorporation)
- Trading agreement (Default fees, margins)
- Collateral details (accepted forms of collateral)
- Outstanding details (maximum amount that can be borrowed and present exposure)
- Messaging details (format of messages used to communicate and any special information like Custodian code, beneficiary account details, cash account details)

5.6.3 Price

The lending desk requires the price information for all securities lent out as well as for those securities received as collateral. The price is usually collected from various vendors specialized in providing market information across the globe.

The information required are the ISIN, prices (various price information is required i.e. mid-day price, market opening price, market closing price, intra-day high and low, price from primary exchange of listing and secondary exchanges of listing).

This information is used to calculate the valuation of the loan and the corresponding value of the collateral received. This process of evaluation at the close of business for each business day is called mark to market. Based on the exposure calculation, the lending desk decides whether additional collateral is required from the borrower against a particular trade. However, in cases of bonds, the mark to market is based on the dirty price (base price plus any accrued interest).

5.6.4 Foreign Exchange rates (Forex)

The lending bank requires calculating Forex information from a pre-determined vendor. The Forex rates are used to evaluate international trades as well as convert the fees/commissions, rebates, earnings into the corresponding base currency.

5.6.5 Corporate Action

The lending desk requires corporate action information to re-visit the trades executed with the corresponding security on which a corporate action is announced. The most common corporate actions that can affect a loan are:

- *Dividends* – If a corporation announces dividends, the lending desk uses a manufactured calculation process to debit the dividend from the account of the borrower and credit the dividend to its own accounts. This can be adjusted on a real time basis or at the time of closing the trade.
- *Stock splits* – A stock split impacts the quantity of trade being lent out. Such a split will necessitate the revision of loan quantity and cascading effect on collateral calculation. A stock split on a security that is received as collateral by the lending bank also necessitates a similar action.
- *Mergers/Acquisition* – A merger happening with any stock lent out/received as collateral implies a cancellation of the trade and reopening with the new stock code and implementing the swap rations decided during the merger.
- *Bonus/Rights issues* – A bonus or right issue is also taken care of by the manufactured amounts exchanged between the lender and the borrower. Such issues are thereby credited to the accounts of the lender and debited from the account of the borrower.

5.6.6 Rating

The lending bank requires credit rating from accepted firms like Moody's, S&P (Standard and Poor's) for all the securities that are received by the desk as collateral. The rating information is used to decide which securities can be accepted as collateral from borrowers.

5.7 Collateral Management

Risk management through exposure control is the primary driver of the lending bank to perform collateral management. Additional purpose of collateral management is to invest cash collateral appropriately and maintain liquidity.

The industry practice is to require collateral in excess of the market value of securities being lent out. Collateral margins vary according to the market, type & volatility of collateral provided and any specialized preferential agreement in vogue between lender and borrower. For fixed income securities provided as collateral, the collateral margin is increased by accrued interest. In spite of the master

agreement between borrower and lender, the collateral margin is negotiated individually at the time of each trade.

Control Collateral Margins

The securities loaned and the collateral provided is marked to market daily. When collateral exceeds the required margin, the excess may be returned to the borrower. Alternatively, when the collateral value is less than the required margin, the borrower must provide additional collateral. The parties stipulate who is responsible for safekeeping the collateral; the lending agent bank is often selected for the job. Some borrowers may require that the collateral be kept with an independent third party. The party safekeeping the collateral may do that alone, or it may also be responsible for pricing the assets, making margin calls, and collecting income.

Management of Cash Collateral

Managing cash collateral is the corner stone of collateral management process by a lending bank. The investment of such cash collateral is the primary source of revenue for these banks. The return in excess of the borrower rebate is split between the agent (or investment manager) and lending customer. This fee sharing arrangement is an additional incentive for the lending bank to accept higher risk by managing cash collateral. The bank has a pre-defined investment guideline identifying permitted types of securities where it can invest, minimum credit quality standards, maturity and duration limits, maturity mismatches and liquidity requirements.

Generate Liquidity

The banks are exposed to liquidity risk due to short-term nature of security loans. The banks are required to maintain adequate liquidity in the cash collateral investments to meet the needs of both borrower and lender. The lender has the option of recalling loaned securities at any time (i.e., if they want to sell them). Many brokers clear securities lending positions off their books for their periodic accountings. On an overnight basis, brokers may return large quantities of borrowed securities only to borrow them again the next day.

5.8 Repurchase Agreement (Repo) Trades

A repurchase agreement (or repo) is an agreement between two parties whereby one party sells the other a security at a specified price with a commitment to buy the security back at a later date for another specified price. Most repos are overnight transactions, with the sale taking place one day and being reversed the next day. Long-term repos—called term repos—can extend for a month or more. Usually, repos are for a fixed period of time, but open-ended deals are also possible. Reverse repo is a term used to describe the opposite side of a repo transaction. The party who sells and later repurchases a security is said to perform a repo. The other party—who purchases and later resells the security—is said to perform a reverse repo.

While a repo is legally the sale and subsequent repurchase of a security, in reality this is equivalent to a secured loan. Economically, the party purchasing the security makes funds available to the seller and holds the security as collateral. If the repoed security pays a dividend, coupon or partial redemptions during the repo, this is returned to the original owner. The difference between the sale and repurchase prices paid for the security represents interest on the loan. Hence repos are quoted as interest rates.

Securities dealers use repos to finance their securities inventories. They repo their inventories by rolling the repos from one day to the next. Counterparties may be institutions such as money market funds that have short-term funds to invest or they may be parties who wish to briefly obtain use of a particular security. For example, a party may want to sell the security short, or they may need to deliver the security to settle a trade with another party. Accordingly, there are two possible motives for entering into a reverse repo:

- Short-term investment of funds
- Obtain temporary use of a particular security

In the former case, it is called general collateral or GC. In the latter case, the security is called a special security. Interest rates payable on special repos tend to be lower than those payable on GC repos. This is because a party reverse repoing a special security will accept a reduced interest rate on its funds in exchange for receiving the special security it requires. Economically, the transaction is identical to a cash collateralized securities lending. Pricing of either type of deal depends upon demand for the desired security.

Because repos are essentially secured loans, their interest rates do not depend upon the respective counterparties' credit qualities. For GC repos, the same rates apply for all counterparties. Accordingly, GC repo rates—or simply repo rates—are benchmark short-term interest rates that are widely quoted in the marketplace. They differ from LIBOR (LIBOR stands for London interbank offered rate. It refers to any of a number of short-term indicative interest rates compiled by the British Bankers Association (BBA) at 11:00 AM London time each business day. LIBOR is quoted for very short term and monthly maturities out to a year for most of the world's major currencies. LIBOR rates are widely used as the underlying interest rates for derivative contracts for all currencies except the EURO. Similarly, EURIBOR stands for Euro interbank offered rate. These interest rates for the Euro are compiled by the European Banking Federation (FBE—Fédération Bancaire de l'Union Européenne) and are released at 11:00 AM Brussels time, each business day. Rates are quoted for one week and monthly maturities out to a year. EURIBOR is widely used as the underlying interest rate for Euro-denominated derivative contracts) rates in that they are for secured loans whereas LIBOR rates are for unsecured loans.

6 Fund Administration: Funds Accounting & Administration Services

6.1 Introduction

Fund administration and accounting services offer a flexible and end-to-end solution for financial institutions that are looking for trustee and administrative support for their managed funds. These include equity and fixed income funds, hedge funds, index funds, guaranteed funds and venture capital funds, domiciled in various jurisdictions. The role of the fund administrator is evolving in line with industry trends. Banks offer services that provide accurate, timely, accounting valuation, compliance monitoring and reporting services for their client's assets in a secured environment.

This allows the funds manager to focus on his core business while reducing operational risks and all related costs. Some of the typical functions provided by the fund accounting firms are:

- Fund Accounting and Recordkeeping
- Security Pricing
- Corporate Actions
- Reporting and Monitoring
- Tax Services

6.1.1 Third Party Fund Administration

Fund administration, the plethora of back and middle-office functions that are vital to the running of any investment manager's business, have increasingly come to be outsourced to specialist providers (third party fund administrators) and custodian banks in the last few years. Third-party fund administrators undertake over 20 separate back and middle office functions for asset managers, ranging from calculating a fund's net asset values - daily, weekly, quarterly, or whatever the fund requires - to investor record keeping, general fund accounting, transfer agency work, multicurrency accounting, trustee services and even some fund marketing services

There are three primary components to the third-party administration model: fund accounting, fund administration and transfer agency. Various ancillary and value-added services are also often available, including custody, stock lending, and risk measurement and performance attribution. Before moving on to the details of each of the functions we will first look at the basics of investment funds and how they function.

6.2 Business Drivers of Funds Services

- **Focus on core business:** The fund administrator provides reliable, confidential and cost effective fund administration, processing and reporting systems that allow the investment fund manager to focus on his clients and his core competencies of asset management and asset gathering, rather than the back office, systems and administration.
- **Cost Control:** The fund administration services helps to control the cost structure of the funds.
- **Regulatory Requirement:** The fund administrator ensures meeting of laws dealing with registration and sales reporting requirements. It also ensures that regulatory requirements are met.
- **Operational Efficiency:** The fund administrator lightens the daily administrative responsibilities by preparing financial statements, compliance and client reporting, reconciliations, tax filings and legal filings.

6.2.1 Business Processes of Fund Administration

Funds Establishment

It is a process of providing a proper service for constituting the legal, tax, regulatory, compliance and administrative structure for a new fund. It also includes providing a registered office for funds, arranging shareholders meeting and providing for any legal publication related to the establishment of funds.

Funds Accounting

It is a process of maintenance of proper accounting records for a fund, in accordance with local laws, regulations and accounting standards. The Custodians offer accounting services for different types of funds. This includes preparation of fund balance sheets and statements of operations, calculation of expense accruals, calculation of net income, calculating capital gains/losses etc. The main services offered as a part of fund accounting are:

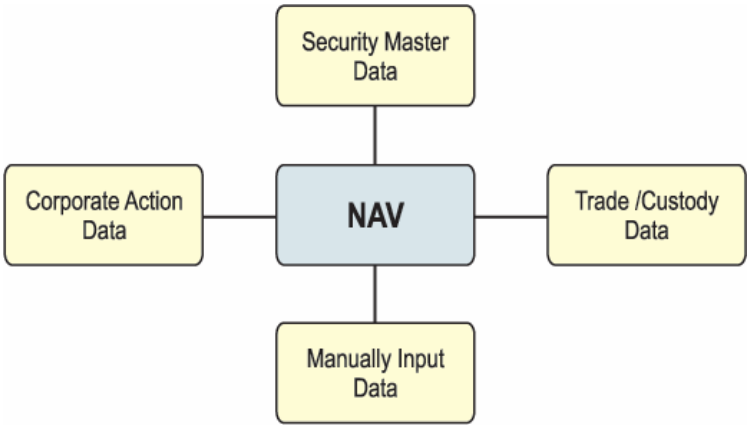
- Maintaining books and records of the funds in conformity with local laws and regulation.
- Maintaining lots for portfolio holdings (including tax lot)
- Maintaining general ledger accounts
- Calculating and accruing all expenses (maintaining expense budgets by fund and complex) Booking purchases, redemptions, and transfers of fund shares as directed by the transfer agent
- Daily general ledger accounting, including investment, capital share, and expense activities
- Reconcilement of cash and production of cash availability reports.
- Expense accrual maintenance and monitoring

Funds Valuation

It is the process of calculation of the Net Asset value ("NAV") of a fund. The services offered include:

- **Daily Valuation:** In this all the securities position prices are updated at least once per day.
- **Intra Day Valuation:** In this all the securities position prices are updated at least twice per day.
- **Real Time Valuation:** In this all the securities position prices are updated in real time.

Fund Valuation is one of the most important services that the Custodian provides to a fund manager. The Fund valuation needs to be sent across to the stipulated regulatory body everyday and any deviation from that is severely punished.



The process of NAV calculation includes gathering the data related to the securities in the portfolio of the funds. The data includes the trade related data, data of the securities at the Custodians place, corporate action related data of the securities in the portfolio and some other data which have to be manually entered. The NAV calculation engines gather all this data and the price information from different pricing source to calculate the NAV.

6.3 Funds Pricing

It is the process of determining the price of each issued unit of investment in a fund, from the net asset value of the fund and the number of units in issue. The data for pricing of the funds can be obtained from either client's own pricing source or multiple price sources.

6.4 Reporting and Monitoring

It is the process of providing reports to the concerned entities and the monitoring of various compliance criteria for the funds. The reporting and monitoring services offered are:

- **Financial Reporting:** It is the process of reporting the records of the cash and securities positions, with information updated at least daily and supplied electronically.
- **Tailored Reporting:** A comprehensive range of reports is provided and many can be tailored to the form and content required by each client.
- **Regulatory Reporting:** It includes preparing the reports as specified by the local rules and regulation like NAV Reports to Client's Schedule which includes reports of a securities portfolio's NAV made available at a frequency to suit each client
- **Multi-currency Reporting:** Reporting transactions and positions in more than one currency (typically a client's base currencies and the currency of each country of investment).
- **Compliance Monitoring:** It includes monitoring positions of each line of stock, particularly across multiple investment managers, and reporting by reference to pre-determined compliance criteria.
- **Message Compliance:** This ensures that all messages must adopt recognized industry standards to avoid causing delays, errors and costs. The format should follow a proprietary standard (such as those specified by SWIFT, ISITC and FIX).

6.5 Benchmarking

It is the process of asset allocation of funds against a pre defined mandate exposure limits. These predefined exposure limits are specified against an industry standard Benchmark index. The benchmark process include following steps:

Configuring Benchmark: The various industry standard Benchmarks are captured and maintained in the internal systems

Compliance and Reporting: support running various compliance tests of any fund data against benchmark data and report the outcome.

6.6 Tax Services

Fund administration services also provide clients with top-notch tax and legal support. They perform compliance testing, construct and submit tax returns, and conduct year-end tax reporting for the fund. In addition they provide various other services mentioned below:

- Assist with interpretation of tax law and related compliance requirements applicable to mutual funds and pooled investment vehicles.
- Prepare fiscal year end distribution calculations, including all tax related items required to be disclosed in financial statements.
- For any tax period, review of portfolio to determine if all necessary tax adjustments have been considered due to the types of investments held by each Fund.
- Analyze information on any events, new policies or changes in accounting for items of income or expense which could lead to differing book and tax treatment.
- Perform analysis of income to be paid on a class level to ensure that there are no issues with respect to preferential dividends or diverging NAVs.

7 Transfer Agency

7.1 Introduction

A transfer agency is involved with the process of recording the activity of shareholder in buying and selling of units of investment in a fund. It can work either with a publicly held company or a fund. A Transfer Agency provides a facility for shareholders / unit holders to buy / sell their shares / units for Funds as governed by the Prospectus & Market Regulators.

Most transfer agents are banks or trust companies, but sometimes a company acts as its own transfer agent. As transfer agent, the bank is responsible for the timely and accurate recording of security ownership. Every share of outstanding stock must be accounted for, as well as every dollar of debt in the form of bonds. Banker therefore maintains registration in two files, each of which must be in balance at all times.

7.1.1 The Role of the Transfer Agent

The primary function of a Transfer Agent is to control the issuance and cancellation of certificates of a particular corporation. This is done by using blank certificates designed by the Company which are maintained and controlled on the agent's premise. In addition to retaining, the cancelled certificates and instructions presented for the transfer, the agent is responsible for maintaining a current record of all owners of the company securities. The Transfer Agent processes all stock transfer requests, produces daily stock transfer journals, maintains shareholder records and outstanding share figures and answers all communications from shareholders about their holdings. While electronic data processing has simplified recordkeeping, it has also created vast new sources of information for shareholders, government agencies and the corporation itself.

The transfer agents often perform other functions for the companies they service beyond the physical issuance and cancellation of certificates. These services include:

- Preparation and processing of dividend payments to stockholders.
- Placement of stop transfers and the replacement of outstanding certificates when a stockholder reports a certificate lost or stolen.
- Distribution of various financial statements and publications.
- A transfer agent may also serve as the company's paying agent to pay out interest, cash and stock dividends, or other distributions to stock and bondholders.
- In addition, transfer agents act as proxy agent (sending out proxy materials), exchange agent (exchanging a company's stock or bonds in a merger), tender agent (tendering shares in a tender offer), and mailing agent (mailing the company's quarterly, annual, and other reports).

7.2 Services offered By Transfer Agents

The transfer agents offer following services to its clients:

7.2.1 Shareholder Record Keeping & Reporting

It is the process of maintaining the register for owners of units in the fund. The transfer agents also provide the preparation of statement of Net Asset Value, distribution and other activity for the owner of units of investment in a fund. Some of the other services that are provided by transfer agency include:

- *Subscription/Redemption*: This mainly deals with making sure of the client's compliance with prospectus specifications. This may involve legal review of the documents, signature verification or confirmation of dealing activity with the promoter.
- *Transfers*: Transfer Agency helps the shareholders to give his/her shares to another person or entity. This transfer is normally provided for a reduced fee or no fee at all.
- *Switches/Exchange*: The process by which a shareholder chooses to switch / exchange his/her shares to another share class / currency fund within that fund structure. Primary focus for T.A is on disruptive /substantive and repetitive trade request which the client requests.
- *Backdate Deals*: Backdated trades occur whenever a shareholder's trade is processed at a previously issued price. (I.e. backdated to a historical trade date). These should and need to be controlled to ensure that the fund and other investors do not suffer a loss.
- *Foreign exchange*: Transfer agency ensures that the FX is placed for the correct currency, value date, settlement date and in line with the funds currency cut off times. All FX deals are placed and called back by dual independent sources when done manually.
- *Distribution*: This deals with allocation in the form of either a cash portion of company profits to a shareholder on a pro rata basis, or dividends be paid in the equivalent amount of shares (reinvested shares).

7.2.2 Dividend Payment and Disbursement Services

It is the process of making payments to the shareholders of the corporation after a dividend has been declared by the corporation. The Transfer agents maintains a list of share holders for a particular issuer of security and on a particular date known as record date the holders of the securities are passed on the dividend. For e.g. ABC Corporation declares a dividend on 10th Sep'2004 and decides the record date as 20th Sep 2004. The transfer agent checks its list of stockholders of ABC Corporation on 20th September and pass on the dividend to them. The process of dividend disbursement is accomplished by check payments or ACH transactions.

7.2.3 Annual Meeting Services

It is the process of facilitating the annual meeting related services to the shareholders of a particular corporation for whom it is acting as a transfer agent. The information related to the date, time and place of annual meetings are sent across to the shareholders in advance so that they get the information in advance about the upcoming annual meeting.

7.2.4 Dividend Re-Investment Services

It is the process of facilitating the Dividend Re-investment process to the shareholder of a particular corporation for whom it is acting as a transfer agent. For e.g. ABC Corporation declares a dividend on 10th Sep'2004 and decides to give a option to its share holder to reinvest in its stocks rather than take a cash dividend. The transfer agent gets the instruction from the stockholders and depending upon the instruction either buys the stocks or processes the cash disbursement.

7.3 Regulatory Requirements for Transfer Agents:

7.3.1 Record keeping Requirements for Transfer Agents

The Securities Exchange Act of 1934 ("Act") specifies registered transfer agents to use electronic, microfilm, and microfiche records maintenance systems to preserve records that they are required to retain under Rule 17Ad-6. The new requirements apply only to those registered transfer agents that elect to store their records using these methods.

7.3.2 The Transfer Agent Regulatory System

The Act directs the Securities Exchange to use its authority under the Act "to facilitate the establishment of a national system for the prompt and accurate clearance and settlement of transactions in securities.

Transfer agents play a vital role in the operation of that system. Transfer agents cancel stock certificates presented for transfer, issue new stock certificates, and maintain the records reflecting the ownership of securities as agent for the issuer. They also may disburse dividends and interest payments and send security owner communications, such as proxy materials and annual reports. Some transfer agents maintain custody of securities on behalf of individual investors and securities depositories. In order to facilitate the prompt, accurate, and efficient clearance and settlement of securities transactions, the Commission, having due regard for the public interest, the protection of investors, the safeguarding of securities and funds, and the maintenance of fair competition among transfer agencies, is authorized to promulgate rules and regulations that are necessary or appropriate to implement the provisions of Section 17A of the Act.

Rule 17Ad-7, as amended, allows transfer agents to use electronic or micrographic storage media to maintain their records. Specifically, the rule requires transfer agents to:

- Use storage mechanisms that are designed to ensure the accessibility, security, and integrity of the records, detect attempts to alter or remove the records, and provide means to recover altered, damaged, or lost records;
- Create an index of the records that are electronically or micrographically stored and store the index with the underlying records;
- Keep a duplicate of all records and indexes that are stored using electronic or micrographic storage media;
- Be able to promptly download electronically or micrographically stored records to an alternate medium such as paper, microfilm, or microfiche; and
- Keep in escrow an updated copy of the software or other information that is necessary to access and download electronically stored records.

The amended rule does not require transfer agents that wish to continue to maintain their records in hard copy format to maintain their records any differently than they are doing today. The requirements adopted today apply only to those transfer agents that choose to retain their records electronically or micro graphically.

7.3.3 Record Integrity Standards

The Rule 17Ad-7 mandates that transfer agents use an electronic or micrographic storage media system that met certain standards intended to deter the alteration of records. The transfer agents should preserve their records electronically and they must do so in a non-rewrite able, non-erasable format and that the storage system be able to automatically verify the quality and accuracy of the electronic recording process. The Rule 17Ad-7 also proposed that the electronic storage media system label the storage units in sequential order and record the date and time that information is electronically stored.

8 Trust Services

8.1 Introduction

Institutional trust services or corporate trust services are services which assist, in the fiduciary capacity, in the administration of the corporation's debt. For example, in a normal bank loan, the lender normally lends money to the company (usually with conditions called "covenants", accepts payments from the company monthly, and watches the company to ensure that it is meeting all its agreed upon conditions (for example, that its ratio of profits to expenses stays above a certain amount). However, most large companies borrow money not from banks, but by selling bonds. When the company sells bonds, a corporate trust company can handle the acceptance of payments from the company (which it passes on to the bondholders), and is the entity which monitors the company to ensure it is responding to covenants. In the event of the company's bankruptcy, the corporate trust company fights to get as much money back as it can for the bondholders.

Examples of Corporate Trust Companies: Bank of New York, Wells Fargo, US Bank, State Street, Northern Trust.

8.1.1 Global Debt

Institutional Trust Services provide a full range of support to both public and private debt markets. Issuers of debt instruments corporate or municipal require an independent intermediary between themselves and the investors. Both issuers and investors are concerned about interest payment in timely fashion, principal payment at maturity, modification to bond ownership and adherence to terms of the agreement.

8.1.2 Conventional Debt

A corporate seeking to raise capital from the financial markets can do so through many alternatives. One such alternative is to issue securities to prospective buyers. The structure of such securities can vary widely depending upon the presence of many factors. Some of the major factors are: collateral, securitisation, coupons, interest rate (fixed / floating) and payment schedule.

If collateral does not back the issued security then it is called an unsecured security and falls under the conventional debt category. Once the corporate has issued the security, the FI can act either as a Trustee or an Issue and Paying Agency (IPA) on behalf of the corporate (issuer).

The securities thus issued and circulated to the buyers can be categorized as one of the following two types:

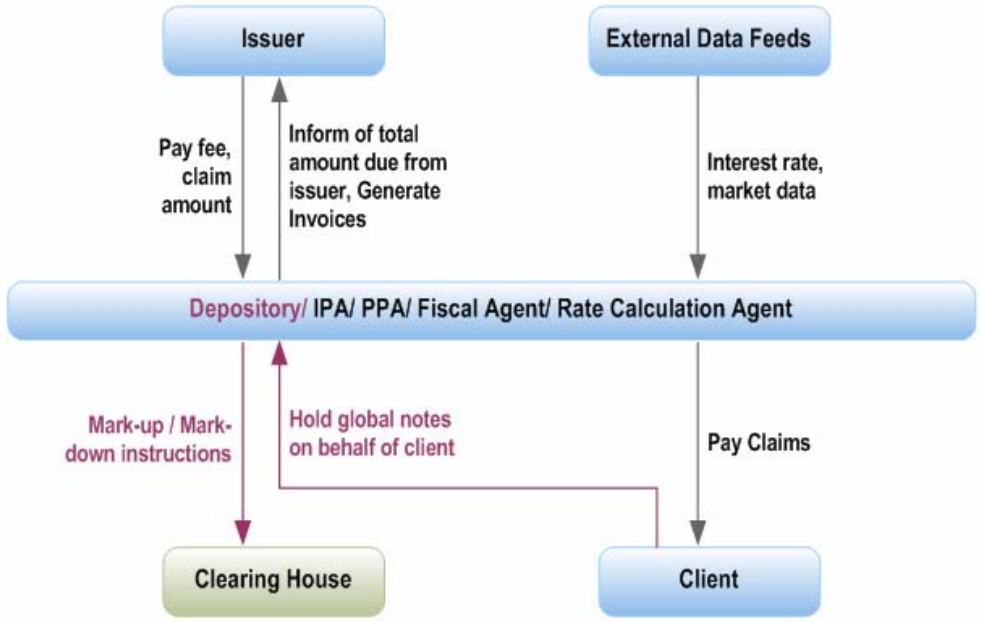
- **Global notes:** The buyer in whose name the note has been issued does not hold the note and usually a third party (custodian, depository) will hold it on his behalf, usually for trading purposes.

- **Definitive Notes:** the customer itself in whose name the note is issued holds these notes.

Following roles are fulfilled by services provider:

- Issue and Paying Agent (IPA)
- Principal Paying Agent (PPA)
- Fiscal Agent
- Rate Calculation Agent
- Custodian
- Depository
- Clearance & Collateral Manager

The following diagram shows the high level workflow between the trust and external parties for each of the above roles:



9 Issuer Services : Depository Receipts

9.1 Depository Receipt: An Overview

A depositary receipt (DR) is a type of negotiable (transferable) financial security that is traded on a local stock exchange but represents a security, usually in the form of equity, that is issued by a foreign publicly-listed company. The DR, which is a physical certificate, allows investors to hold shares in equity of other countries. One of the most common types of DRs is the American depositary receipt (ADR), which has been offering companies, investors and traders global investment opportunities since the 1920s.

Since then, DRs have spread to other parts of the globe in the form of global depositary receipts (GDRs) (the other most common type of DR), European DRs and International DRs. ADRs are typically traded on a U.S. national stock exchange, such as the New York Stock Exchange (NYSE) or the American Stock Exchange, while GDRs are commonly listed on European stock exchanges such as the London Stock Exchange. Both ADRs and GDRs are usually denominated in U.S. dollars, but can also be denominated in euros.

9.1.1 How Does the DR Work?

The DR is created when a foreign company wishes to list its already publicly-traded shares or debt securities on a foreign stock exchange. Before it can be listed to a particular stock exchange, the company in question will first have to meet certain requirements put forth by the exchange. Initial public offerings, however, can also issue a DR. DRs can be traded publicly or over-the-counter. Let us look at an example of how an ADR is created and traded:

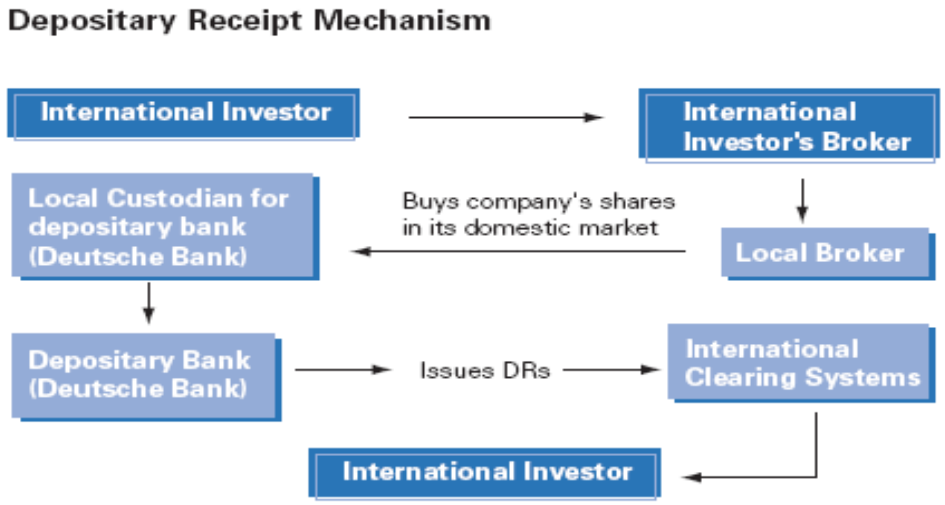
ADR Issue Example

A gas company in Russia has fulfilled the requirements for DR listing and now wants to list its publicly-traded shares on the NYSE in the form of an ADR. Before the gas company's shares are traded freely on the exchange, a U.S. broker, through an international office or a local brokerage house in Russia, would purchase the domestic shares from the Russian market and then have them delivered to the local (Russian) custodian bank of the depository bank. The depository bank is the American institution that issues the ADRs in America. In this example, the depository bank is the Bank of New York. Once the Bank of New York's local custodian bank in Russia receives the shares, this custodian bank verifies the delivery of the shares by informing the Bank of New York that the shares can now be issued in the United States. The Bank of New York then delivers the ADRs to the broker who initially purchased them.

Based on a determined ADR ratio, each ADR may be issued as representing one or more of the Russian local shares, and the price of each ADR would be issued in U.S. dollars converted from the

equivalent Russian price of the shares being held by the depository bank. The ADRs now represent the local Russian shares held by the depository, and can now be freely traded equity on the NYSE.

After the process whereby the new ADR of the Russian gas company is issued, the ADR can be traded freely among investors and transferred from the buyer to the seller on the NYSE, through a procedure known as intra-market trading. All ADR transactions of the Russian gas company will now take place in U.S. dollars and are settled like any other U.S. transaction on the NYSE. The ADR investor holds privileges like those granted to shareholders of ordinary shares, such as voting rights and cash dividends. The rights of the ADR holder are stated on the ADR certificate.



9.2 Pricing and Cross-Trading

When any DR is traded, the broker will aim to find the best price of the share in question. He or she will therefore compare the U.S. dollar price of the ADR with the U.S. dollar equivalent price of the local share on the domestic market. If the ADR of the Russian gas company is trading at US$12 per share and the share trading on the Russian market is trading at $11 per share (converted from roubles to dollars), a broker would aim to buy more local shares from Russia and issue ADRs on the U.S. market. This action then causes the local Russian price and the price of the ADR to reach parity. The continual buying and selling in both markets, however, usually keeps the prices of the ADR and the security on the home market in close range of one another. Because of this minimal price differential, most ADRs are traded by means of intra-market trading.

A U.S. broker may also sell ADRs back into the local Russian market. This is known as cross-border trading. When this happens, an amount of ADRs is cancelled by the depository and the local shares are released from the custodian bank and delivered back to the Russian broker who bought them. The Russian broker pays for them in roubles, which are converted into dollars by the U.S. broker.

9.3 The Benefits of Depositary Receipts

The DR functions as a means to increase global trade, which in turn can help increase not only volumes on local and foreign markets but also the exchange of information, technology, regulatory procedures as well as market transparency. Thus, instead of being faced with impediments to foreign investment, as is often the case in many emerging markets, the DR investor and company can both benefit from investment abroad.

9.3.1 For the Company

A company may opt to issue a DR to obtain greater exposure and raise capital in the world market. Issuing DRs has the added benefit of increasing the share's liquidity while boosting the company's prestige on its local market ("the company is traded internationally"). Depositary receipts encourage an international shareholder base, and provide expatriates living abroad with an easier opportunity to invest in their home countries. Moreover, in many countries, especially those with emerging markets, obstacles often prevent foreign investors from entering the local market. By issuing a DR, a company can still encourage investment from abroad without having to worry about barriers to entry that a foreign investor might face.

9.3.2 For the Investor

Buying into a DR immediately turns an investors' portfolio into a global one. Investors gain the benefits of diversification, while trading in their own market under familiar settlement and clearance conditions. More importantly, DR investors will be able to reap the benefits of these usually higher-risk, higher-return equities, without having to endure the added risks of going directly into foreign markets, which may pose lack of transparency or instability resulting from changing regulatory procedures. It is important to remember that an investor will still bear some foreign-exchange risk, stemming from uncertainties in emerging economies and societies. On the other hand, the investor can also benefit from competitive rates the U.S. dollar and euro have to most foreign currencies.

9.4 ADR Basics: What is an ADR?

Introduced to the financial markets in 1927, an American Depository Receipt (ADR) is a stock that trades in the United States but represents 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.

ADRs were introduced as a result of the complexity involved in buying shares in foreign countries that trade at different prices and currency values. For this reason, U.S. banks simply purchase a large lot of shares from the company, bundle the shares into groups and reissues them on the NYSE, AMEX, or NASDAQ. The depository bank sets the ratio of U.S. ADRs per home country share. This ratio can be anything less than or greater than 1. The reason they do this is because they wish to price the ADR high enough as to show substantial value, yet low enough, so that the individual investors can purchase these shares. For example, most investors try to avoid investing in penny stocks, and many would shy away from a company trading for 50 Russian Roubles per share, which equates to $1.50 US per share. As a result, the majority of ADRs range between $10 and $100 per share. If, in the home country, the shares were worth considerably less, then each ADR would represent several real shares.

There are 3 different types of ADR issues:

- **Level 1 -** This is the most basic type of ADR; foreign companies either don't qualify or don't wish to have their ADR listed on an exchange. Level 1 ADRs are found on the OTC market and are an easy and inexpensive way to gauge interest for its securities in North America. Level 1 ADRs also have the loosest requirements from the SEC.
- **Level 2 -** This type of ADR is listed on an exchange or quoted on NASDAQ. Level 2 ADRs have slightly more requirements from the SEC but they also get higher visibility trading volume.
- **Level 3 -** The most prestigious of the three, this is when an 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 advantages of ADRs are twofold. For individuals, ADRs are an easy and cost effective way to buy shares in a foreign company. They save considerable money by reducing administration costs and avoidance of foreign tax on each transaction. Foreign entities like ADRs because they get more U.S. exposure and allow them to tap into the wealthy North American equity markets. In return, the foreign company must provide detailed financial information to the sponsor bank.

How an ADR's Price is Determined

Now, let's use an example to give a better idea about how the ADR process works. The recent boom in "Bloody Marys" has increased the prospects for the vodka industry. Russian Vodka Inc. wants to list shares on the NYSE to gain exposure to the U.S. citizens and to tap into the lush Bloody Mary market.

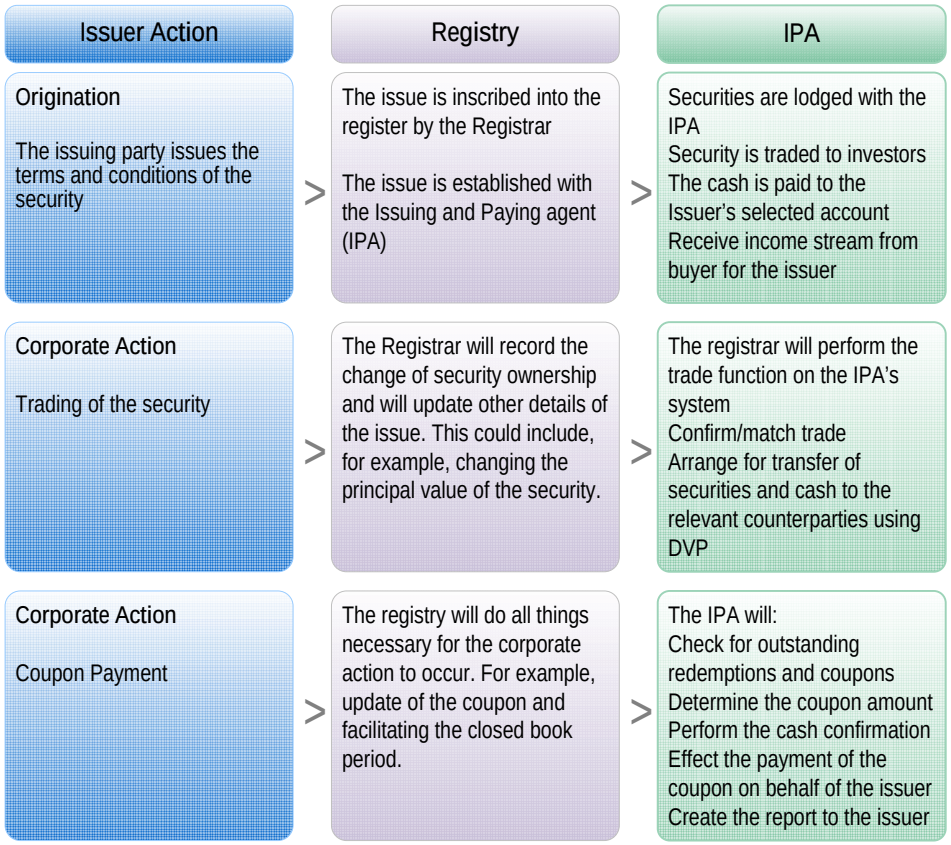
Russian Vodka already trades on the Russian Stock Exchange at 127 Russian Roubles ($4.58 US). Let's say that a U.S. bank purchases 30 million shares fro m Russian Vodka Inc. and issues them in the U.S. at a ratio of 10:1. This means each ADR share you purchase is worth 10 shares on the Russian Stock Exchange. A quick calculation tells us that the new ADR should have an issue price of around $45.80 US each (10 times $4.58).

Performance floats on supply and demand just as normal stocks do. But, if the U.S. price gets too far off from the Russian price after taking into account the currency exchange rate and the ratio of ADRs to home country shares then an arbitrage opportunity will exist. ADRs do tend to follow the general trend of the home country shares, but this is not always the case.

10 Issuer Services : Issuing and Paying Agent

10.1 Introduction

The Issuing and Paying Agent manages debt issuance of the Programme during its life on behalf of the Issuer.



An Issuing and Paying Agent performs the following activities:

- Maintains records
- Performs rate fixes/redemption calculations
- Publishes notices on behalf of Issuer
- Claims funds for payment of interest/principal from Issuer
- Pays Investors against presentation

- Performs exchanges/conversions (if applicable)
- Manages all other corporate actions (options etc)
- Regulatory reporting

10.2 Issuing and Paying Agent Benefits

The IPA facilitates the straight through flow of information between the Issuer, Registrar and Investor. In allowing the Issuer to minimize their back office functions, it provides the following benefits:

- Timely and accurate control over each corporate action relating to the Issue
- RTGS irrevocable and immediate settlement of funds
- Straight through processing of corporate actions relating to the security with controlled input by the Issuer.

11 Alternate Investment Services : Hedge Fund Servicing

11.1 Introduction to Hedge Funds

Hedge funds are lightly regulated private investment funds, sometimes characterized by unconventional strategies (e.g., strategies other than investing long only in bonds, equities or money markets). They are primarily organized as limited partnerships, and previously were often simply called "limited partnerships" and were grouped with other similar partnerships such as those that invested in oil development.

11.1.1 Origin and Development

The term Hedge fund dates back to the first such fund founded by Alfred Winslow Jones in 1949. Jones' innovation was to sell short some stocks while buying others, thus some of the market risk was hedged. While most of today's hedge funds still trade stocks both long and short, many do not trade stocks at all.

For U.S.-based managers and investors, hedge funds are simply structured as limited partnerships or limited liability companies. The hedge fund manager is the general partner or manager and the investors are the limited partners or members respectively. The funds are pooled together in the partnership or company and the general partner or manager makes all the investment decisions based on the strategy it outlined in the offering documents.

In return for managing the investors' funds, the hedge fund manager will receive a management fee and a performance or incentive fee. The management fee is computed as a percentage of assets under management, and the incentive fee is computed as a percentage of the fund's profits.

A "high water mark" may be specified, under which the manager does not receive incentive fees unless the value of the fund exceeds the highest value it has achieved. The "high water mark" is intended to encourage fund managers to recoup losses, but is viewed by critics as encouraging laggard funds to close, to the detriment of investors.

The fee structures of hedge funds vary, but the annual management fee is typically 20% of the profits of the fund plus 2% of assets under management. Certain highly regarded managers demand higher fees. In particular, Steven Cohen's SAC Capital Partners charges a 50% incentive fee (but no management fee) and Jim Simons' Renaissance Technologies Corp. charged a 5% management fee and a 44% incentive fee in its flagship Medallion Fund before returning all investors' capital and running solely on its employees' money.

The typical hedge fund management firm includes both the domestic U.S. hedge fund and the offshore hedge fund. This allows hedge fund managers to attract capital from all over the world. Both funds will trade 'Pari passu' based on the strategy outlined in the offering documents.

11.2 Hedge Fund Investment Advisers

A hedge fund typically is sponsored, organized and managed by its investment adviser. Many hedge fund investment advisers were founded by former traders, analysts or portfolio managers who left investment banks, investment management firms and other large financial institutions to establish their own hedge funds. Many of these individuals were attracted by the entrepreneurial aspects of starting their own business and managing assets using investment strategies in which they may have a particular expertise. They also often are lured to establish their firms by the potential compensation that can be earned by managing hedge funds.

A hedge fund's investment adviser usually is responsible for establishing the hedge fund and overseeing the preparation of the hedge fund's PPM (A hedge fund's rulebook is its private placement or confidential offering memorandum and is colloquially known as a "PPM) and subscription agreement, as well as the applicable limited partnership or limited liability company agreements (for domestic funds).The investment adviser negotiates the hedge fund's arrangements with various service providers, including broker-dealers providing prime brokerage services. The investment adviser also generally is responsible, at least in the early stages of the hedge fund's existence, for marketing and distributing the fund's securities to investors. Finally, the investment adviser often is responsible for investor relations, including providing periodic reports to investors about fund performance.

The nature and capabilities of hedge fund investment advisers vary greatly. Some hedge fund advisers are exceedingly sophisticated entities that manage billions of dollars in investment assets. These advisers employ multiple portfolio managers, analysts, brokers and compliance, risk management, legal and other operational personnel. These advisers also have the ability to install sophisticated systems and procedures to assist in complying with the advisers' fiduciary duties. At the opposite end of the spectrum are smaller, typically recently established investment advisers where one individual serves as marketer, portfolio manager, trader, operations officer and risk manager. Many of these types of advisers have few, if any, formal procedures.

11.3 Broker-Dealers / Prime Brokers

Full service broker-dealers frequently offer prime brokerage services, in addition to typical brokerage services, to hedge fund advisers. Prime brokerage is a system developed by full-service broker-dealers to facilitate the clearance and settlement of securities trades and to provide other services for substantial retail and institutional customers, including hedge funds. Hedge fund advisers often select prime brokers by matching the hedge fund's strategies with the specific services and areas of

expertise offered by one or more different full-service broker-dealers. Among the key services that may be offered by broker-dealers are:

- **Streamlined Trading**. Prime brokers clear and settle hedge funds' trades executed by other broker-dealers ("executing brokers") upon instructions from hedge fund advisers. The hedge fund maintains its funds and securities in an account with the prime broker. Transactions placed with executing brokers are effected through accounts with those brokers in the name of the prime broker for the benefit of the hedge fund. After executing a trade, the executing broker and the hedge fund adviser report the details to the prime broker, who clears the trade and provides custody of the securities.

- **Securities Lending**. Many hedge funds' investment strategies involve short selling. A broker-dealer's securities loan capability plays a critical role in this process. Prime brokers use their relationships in the banking and brokerage communities to locate and acquire securities to lend to their customers for short selling purposes. Hedge funds often choose prime brokers who have the largest inventories of securities available for loans, or those who are able, through relationships and market clout, to easily acquire the securities.

- **Margin Lending**. Broker-dealers maintain margin accounts and provide loans and other services in connection with facilitating transactions for their customers. Prime brokers are generally required to maintain collateral to secure margin loans to hedge funds as a result of regulatory requirements and internal limits on risk exposure, which are constantly monitored for changes.

- **Capital Introduction**. These services are designed to introduce hedge fund advisers to potential hedge fund investors. Prime brokers may sponsor seminars for consultants and institutional investors seeking exposure to hedge funds. Prime brokers may also set up one-on-one meetings and prepare marketing materials to introduce potential investors to hedge fund advisers.

- **Hedge Fund Start-up Services**. Broker-dealers may offer new hedge fund advisers with the means of operating a hedge fund through introductions or referrals to lawyers, accountants and other service providers. In addition to assisting these hedge fund advisers with back office support, the broker-dealer may provide the hedge fund adviser with office space.

- **Customized Reporting**. Some broker-dealers offer to provide hedge fund advisers with customized periodic reports, including: (1) reports that reflect end of day pricing of securities; (2) reports that provide risk management to investment advisers, such as value-at-risk, liquidity and stress testing; and (3) reports that allow fund advisers to provide investors with some limited transparency information.

- **Research**. Most broker-dealers offer to provide proprietary and third-party research and other soft dollar arrangements related to individual securities and particular market sectors of interest to the hedge fund's investment adviser.

- **Valuation.** Some broker-dealers may function as a source of prices for certain types of (or individual) securities.

- **Technology**. Some broker-dealers facilitate the start-up of new hedge funds by offering technology services, including reporting systems, software, trading systems, connections to ECNs, fixed connectivity and risk management systems. Other broker-dealer firms offer advice in these areas and may arrange for these services to be provided by a third-party.

- **Operations Services**. Broker-dealers may offer to provide persons seeking to start a hedge fund with: (1) advice regarding minimum and maximum amounts of investor subscriptions required to be raised and rates of returns expected by investors; (2) services such as the preparation of

offering materials and reports to investors; (3) information on strategies to assist in obtaining investments; (4) advice as to appropriate investment alternatives for excess cash; and (5) referrals of requests for information from potential investors.

Compensation for prime brokers varies based on the nature of the services that they provide to their customers. While some broker-dealer firms have guidelines for fees, most will negotiate final fees on a case-by-case basis. To determine fees, prime brokers evaluate each hedge fund adviser on an overall risk/return basis and on the business done at the broker-dealer firm. Prime brokers generate revenue on hedge fund business from commissions, spreads, administrative fees, ticket charges, stock loans and credit interest earned from providing position financing and arranging securities loans. The prime broker will generally assess the package of services required by the hedge fund and suggest a price on that basis.