

In its broadest sense, an investment is a sacrifice of current money or other resources for future benefits. Numerous avenues of investment are available today. You can deposit money in a bank account or participate in a mutual fund or invest in the equity shares of a company or contribute to a provident fund account or buy a stock option or acquire a plot of land or invest in some other form.

The two key aspects of any investment are time and risk. The sacrifice takes place now and is certain. The benefit is expected in the future and tends to be uncertain. In some investments (like government bonds) the time element is the dominant attribute. In other investments (like stock options) the risk element is the dominant attribute. In most other investments (like equity shares) both time and risk are important.

Almost everyone owns a portfolio of investments. The portfolio is likely to comprise financial assets (bank deposits, bonds, stocks, and so on) and real assets (car, house, and so on). The portfolio may be the result of a series of haphazard decisions or may be the result of deliberate and careful planning.

Your economic well-being in the long run depends significantly on how wisely or foolishly you invest. This book discusses the techniques and principles useful

in systematic and rational investment management. It seeks to improve your abilities in the field of investments.

1.1 INVESTMENT VERSUS SPECULATION

According to Benjamin Graham "An investment operation is one which, upon thorough analysis, promises safety of principal and an adequate return. Operations not meeting these requirements are speculative." Very broadly, the characteristics of an investor differ from the speculator as follows:

	Investor	Speculator
<i>Planning horizon</i>	An investor has a relatively longer planning horizon. His holding period is usually at least one year.	A speculator has a very short planning horizon. His holding period may be a few days to a few months.
<i>Risk disposition</i>	An investor is normally not willing to assume more than moderate risk. Rarely does he knowingly assume high risk.	A speculator is ordinarily willing to assume high risk.
<i>Return expectation</i>	An investor usually seeks a modest rate of return which is commensurate with the limited risk assumed by him.	A speculator looks for a high rate of return in exchange for the high risk borne by him.
<i>Basis for decisions</i>	An investor attaches greater significance to fundamental factors and attempts a careful evaluation of the prospects of the firm.	A speculator relies more on hearsay, technical charts, and market psychology.
<i>Leverage</i>	Typically an investor uses his own funds and eschews borrowed funds.	A speculator normally resorts to borrowings, which can be very substantial, to supplement his personal resources.

Gambling Gambling is fundamentally different from speculation and investment in the following respects:

- Compared to investment and speculation, the result of gambling is known more quickly. The outcome of a roll of dice or the turn of a card is known almost immediately.
- Rational people gamble for fun, not for income.
- Gambling does not involve a bet on an economic activity. It is based on risk that is created artificially.
- Gambling creates risk without providing any commensurate economic return.

TRADERS, SPECULATORS, AND INVESTORS

We may classify stock market participants into three broad categories: traders, speculators, and investors. Traders have a very short time horizon. They square off their positions within a day or within a week or within a month – their time horizon rarely exceeds a month. They usually work on margin in the derivatives markets (futures and options markets) and hence their positions are highly leveraged. Most of the traders rely on technical analysis.

Speculators have a time horizon that may extend up to six months. Samuel Nelson, in his classic book, *The ABC of Stock Speculation*, defined speculation as “a venture based on calculation.” He distinguishes speculation from gambling by saying that the latter is not based on calculation.

Investors have a longer time horizon, typically spanning at least one year, often much longer. Generally, investors do not resort to margin trading and take fewer risks compared to traders or speculators.

Investors, in general, rely on fundamental analysis. Clearly the formula for investing is different from that used for trading and speculating. As Martin J. Pring put it: “The techniques practiced by traders and speculators are as different from investors’ techniques as sprinter’s training is different from that of a marathon runner. Both need to be disciplined and fit, but each has a different regimen.”¹

1.2 INVESTMENT ALTERNATIVES AND THEIR EVALUATION

There is a bewildering range of investment alternatives. The more important ones, from the point of view of individual investors, are displayed in Exhibit 1.1.

Investment Alternatives

A brief description of various investment alternatives or avenues is given below. They are discussed at length in the following chapters.

Deposits A good portion of the financial assets of individuals is held in the form of deposits. They can be broadly classified as:

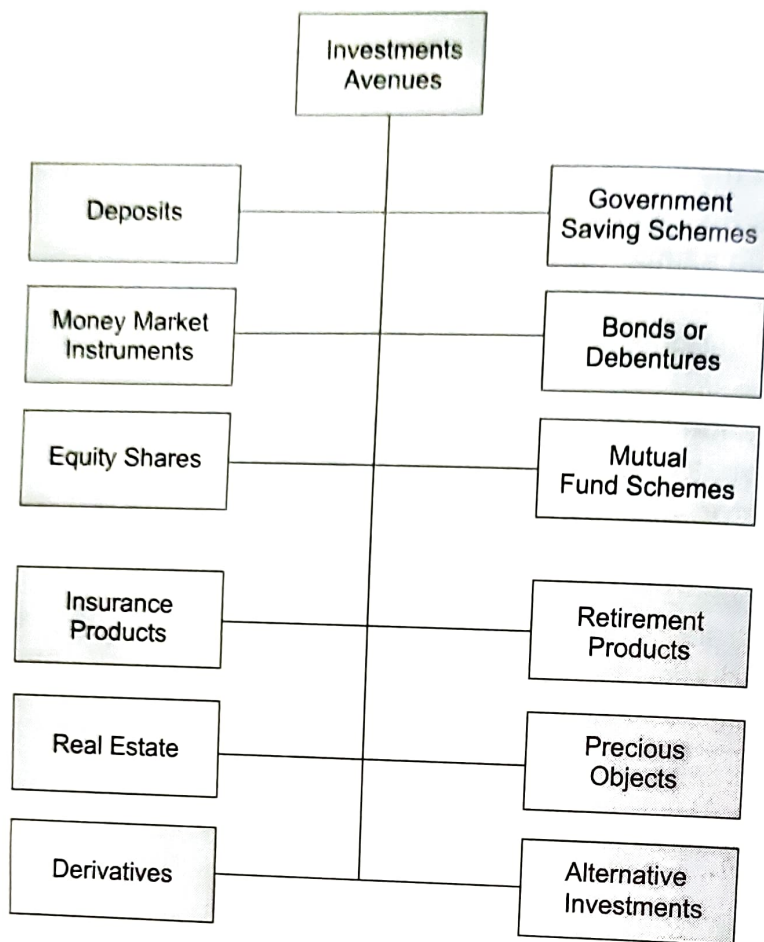
- Bank deposits
- Post office deposits
- Company fixed deposits

Government Savings Schemes Government of India offers a number of small savings schemes to individual investors. These schemes are offered through the post office and select banks. The important savings schemes are:

- Public Provident Fund

¹ Martin J. Pring, *Investment Psychology Explained: Classic Strategies to Beat the Markets*, New York: John Wiley & Sons, 1993.

Exhibit 1.1 Investment Alternatives



- Senior Citizens' Saving Scheme
- National Savings Certificate

Money Market Instruments Debt instruments which have a maturity of less than one year at the time of issue are called money market instruments – these instruments are highly liquid and have negligible risk. The major money market instruments are:

- Treasury bills
- Certificates of deposit
- Commercial paper
- Repos

Bonds or Debentures Bonds or debentures represent long-term debt instruments. The issuer of a bond promises to pay a stipulated stream of cash flow. Bonds may be classified into the following categories:

- Government securities
- PSU bonds

- Debentures of private sector companies
- Preference shares²

Equity Shares Equity shares represent ownership capital. As an equity shareholder, you have an ownership stake in the company. This essentially means that you have a residual interest in income and wealth. Perhaps the most romantic among various investment avenues, equity shares are classified into the following broad categories by stock market analysts:

- Blue chip shares
- Growth shares
- Income shares
- Cyclical shares
- Speculative shares

Mutual Funds Instead of directly buying equity shares and / or fixed income instruments, you can participate in various schemes floated by mutual funds which, in turn, invest in equity shares and fixed income securities. There are three broad types of mutual fund schemes:

- Equity schemes
- Debt schemes
- Balanced schemes

Life Insurance³ In a broad sense, life insurance may be viewed as an investment. Insurance premiums represent the sacrifice and the assured sum, the benefit. The important types of insurance policies in India are:

- Endowment assurance policy
- Money back policy
- Whole life policy
- Term assurance policy

Retirement Products The important retirement products are:

- Employees' Provident Fund (EPF) Scheme, 1952
- Employees' Pension Scheme (EPS), 1952
- National Pension Scheme, 2004
- Pension schemes of insurance companies and mutual funds

Real Estate For the bulk of the investors the most important asset in their portfolio is a residential house. In addition to a residential house, the more affluent investors are likely to be interested in the following types of real estate:

- Agricultural land
- Semi-urban land
- Commercial property

² Preference shares are hybrid securities which partake features of bonds and equity shares. For the sake of simplicity, we include them under bonds.

³ Life insurance is also referred to as life assurance.

- A resort home
- A second house

Precious Objects Precious objects are items that are generally small in size but highly valuable in monetary terms. The important precious objects are:

- Gold and silver
- Precious stones
- Art objects

Financial Derivatives A financial derivative is an instrument whose value is derived from the value of an underlying asset. It may be viewed as a side bet on the asset. The most important financial derivatives from the point of view of investors are:

- Options
- Futures

Alternative Investments The search for better performing assets prods investors to explore the category of alternative investments, which is a term used very broadly to cover a variety of investments other than stocks, bonds, and cash. It covers investments such as:

- Venture capital
- Private equity
- Hedge funds

Criteria for Evaluation

For evaluating an investment avenue, the following criteria are relevant.

- Rate of return
- Risk
- Marketability
- Tax shelter
- Convenience

Rate of Return The rate of return on an investment for a period (which is usually a period of one year) is defined as follows:

$$\text{Rate of return} = \frac{\text{Annual income} + (\text{Ending price} - \text{Beginning price})}{\text{Beginning Price}}$$

To illustrate, consider the following information about a certain equity share:

- | | |
|--|-----------|
| ■ Price at the beginning of the year | : ₹ 60.00 |
| ■ Dividend paid toward the end to the year | : ₹ 2.40 |
| ■ Price at the end of the year | : ₹ 66.00 |

The rate of return on this share is calculated as follows:

$$\frac{2.40 + (66.0 - 60.00)}{60.00} = 0.14 \text{ or } 14 \text{ percent}$$

It is helpful to split the rate of return into two components, viz., current yield and capital gains/losses yield as follows:

$$\underbrace{\frac{\text{Annual income}}{\text{Beginning price}}}_{\text{Current yield}} + \underbrace{\frac{\text{Ending} - \text{Beginning price}}{\text{Beginning price}}}_{\text{Capital gains/losses yield}}$$

The rate of return of 14 percent in the example above may be broken down as follows:

$$\frac{2.40}{60.00} + \frac{(66.00 - 60.00)}{60.00} = \underbrace{4 \text{ percent}}_{\text{Current yield}} + \underbrace{10 \text{ percent}}_{\text{Capital gains yield}}$$

Risk The rate of return from investments like equity shares, real estate, silver, and gold can vary rather widely. The risk of an investment refers to the variability of its rate of return: How much do individual outcomes deviate from the expected value? A simple measure of dispersion is the range of values, which is simply the difference between the highest and the lowest values. Other measures used commonly in finance are as follows:

- Variance : This is the mean of the squares of deviations of individual returns around their average value
- Standard deviation : This is the square root of variance
- Beta : This reflects how volatile is the return from an investment relative to market swings.

Marketability An investment is highly marketable or liquid if: (a) it can be transacted quickly; (b) the transaction cost is low; and (c) the price change between two successive transactions is negligible.

The liquidity of a market may be judged in terms of its depth, breadth, and resilience. *Depth* refers to the existence of buy as well as sell orders around the current market price. *Breadth* implies the presence of such orders in substantial volume. *Resilience* means that new orders emerge in response to price changes. Generally, equity shares of large, well-established companies enjoy high marketability and equity shares of small companies in their formative years have low marketability.

High marketability is a desirable characteristic and low marketability is an undesirable one. Investors value liquidity because it allows them to change their minds. They can correct errors they might have made quickly and cheaply. Further, they can easily modify their investments in line with their changing circumstances and objectives. However, liquidity can induce sloppiness in investment decisions.

How does one evaluate the 'marketability' of an investment like a provident fund deposit which is non-marketable by its very nature? In such a case, the relevant question to ask is: can withdrawals be made or loans be taken against the deposit? If a substantial portion of accumulated balance can be withdrawn without much penalty it may be described as marketable.

Tax Shelter Some investments provide tax benefits; others do not. Tax benefits are of the following three kinds.

Initial Tax Benefit An initial tax benefit refers to the tax relief enjoyed at the time of making the investment. For example, when you make a deposit in a Public Provident Fund Account, you get a tax rebate under Section 80 C of the Income Tax Act.

Continuing Tax Benefit A continuing tax benefit represents the tax shield associated with the periodic returns from the investment. For example, the interest on tax-free bonds is exempt, in the hands of the recipient.

Terminal Tax Benefit A terminal tax benefit refers to relief from taxation when an investment is realised or liquidated. For example, a withdrawal from a Public Provident Fund Account is not subject to tax.

Convenience Convenience broadly refers to the ease with which the investment can be made and looked after. Put differently, the questions that we ask to judge convenience are:

- (a) can the investment be made readily? and
- (b) can the investment be looked after and liquidated easily?

The degree of convenience associated with investments varies widely. At one end of the spectrum is the deposit in a savings bank account that can be made readily and that does not require any maintenance effort. At the other end of the spectrum is the purchase of a property that may involve a lot of procedural and legal hassles at the time of acquisition and a great deal of maintenance effort subsequently.

How Do the Various Alternatives Compare?

How do various investment avenues like equity shares, fixed income securities, deposits, real assets, and so on compare? A summary evaluation of these investment avenues in terms of key investment attributes is given in Exhibit 1.2. It must be emphasised that within each investment category individual assets may display wide variations.

1.3 FINANCIAL MARKETS

A financial market is a market for creation and exchange of financial assets. If you buy or sell financial assets, you are participating in financial markets in some way or the other.

Functions of Financial Markets Financial markets play a pivotal role in allocating resources in an economy by performing three important functions:

1. Financial markets *facilitate price discovery*: The continual interaction among numerous buyers and sellers who throng financial markets helps in establishing the prices of financial assets. Well-organised financial markets seem to be remarkably efficient in price discovery. That is why financial economists say: "If you want to know what the value of a financial asset is, simply look at its price in the financial market".

Exhibit 1.2 Summary Evaluation of Various Investment Avenues

	Return		Risk	Marketability/ Liquidity	Tax shelter	Convenience
	Current yield	Capital appreciation				
Equity Shares	Low	High	High	Fairly high	High	High
Non-convertible Debentures	High	Negligible	Low	Average	Nil	High
Equity Schemes	Low	High	High	High	High	Very high
Debt Schemes	Moderate	Low	Low	High	Medium	Very high
Bank Deposits	Moderate	Nil	Negligible	High	Low	Very high
Public Provident Fund	Nil	Moderate	Nil	Average	Section 80 C benefit	Very high
Life Insurance Policies	Nil	Moderate	Nil	Average	Section 80 C benefit	Very high
Residential House	Moderate	Moderate	Negligible	Low	High	Fair
Gold and Silver	Nil	Moderate	Average	High	Nil	Average

2. Financial markets *provide liquidity* to financial assets: Investors can readily sell their financial assets through the mechanism of financial markets. In the absence of financial markets which provide such liquidity, the motivation of investors to hold financial assets will be considerably diminished. Thanks to negotiability and transferability of securities through the financial markets, it is possible for companies (and other entities) to raise long-term funds from investors with short-term and medium-term horizons. While one investor is substituted by another when a security is transacted, the company is assured of long-term availability of funds.
3. Financial markets considerably *reduce the cost of transacting*: The two major costs associated with transacting are search costs and information costs. *Search costs* comprise explicit costs such as the expenses incurred on advertising when one wants to buy or sell an asset and implicit costs such as the effort and time one has to put in to locate a customer. *Information costs* refer to costs incurred in evaluating the investment merits of financial assets.

Classification of Financial Markets There are different ways of classifying financial markets. One way is to classify financial markets by the type of financial claim. The **debt market** is the financial market for fixed claims (debt instruments) and the **equity market** is the financial market for residual claims (equity instruments).

A second way is to classify financial markets by the maturity of claims. The market for short-term financial claims is referred to as the **money market** and the market for long-term financial claims is called the **capital market**. Traditionally, the cut off between short-term and long-term financial claims has been one year - though this dividing line is arbitrary, it is widely accepted. Since short-term financial claims are almost invariably debt claims, the money market is the market for short-term debt instruments. The capital market is the market for long-term debt instruments and equity instruments.

A third way to classify financial markets is based on whether the claims represent new issues or outstanding issues. The market where issuers sell new claims is referred to as the **primary market** and the market where investors trade outstanding securities is called the **secondary market**.

A fourth way to classify financial markets is by the timing of delivery. A cash or **spot market** is one where the delivery occurs almost immediately and a forward or **futures market** is one where the delivery occurs at a pre-determined time in future.

A fifth way to classify financial markets is by the nature of its organisational structure. An **exchange-traded market** is characterised by a centralised organisation with standardised procedures. An **over-the-counter market** is a decentralised market with customised procedures. Exhibit 1.3 presents a summary of the classification of financial markets.

Globalisation of Financial Markets There is a trend toward integration of financial markets throughout the world into a global or international financial market. Thanks to globalisation of financial markets, issuers and investors in any country need not confine themselves to their domestic financial markets. For example, Indian companies can raise money by issuing equity and debt in international markets; likewise Indian investors can invest in outside markets. Of course, such participation is regulated and limited in some ways.

Exhibit 1.3 Classification of Financial Markets



Globalisation of financial markets is driven by three forces, in the main: (a) deregulation or liberalisation of financial markets in different parts of the world, (b) technological advances in computing, communication, and market structures, and (c) growing institutionalisation of financial markets. Indeed, these factors are interrelated.

Competitive Character of Financial Markets Financial markets are characterised by a high degree of competition. Thousands of intelligent, knowledgeable, and determined analysts constantly hunt for the best buys. Given such intense competition, it would be difficult to find “free lunches” or obvious bargains. The no-free-lunch proposition has two important implications.

- There is a trade-off between risk and return. If you want to earn higher expected return, you will have to bear higher investment risk.
- Financial markets assimilate all relevant information about securities fairly quickly and efficiently. As a result, securities are generally priced fairly.

1.4 MAJOR TRENDS IN THE INVESTMENT ENVIRONMENT

The contemporary investment environment has been shaped by four major trends viz., globalisation, information and computer networks, financial engineering, and securitisation.

Globalisation There is a trend toward the integration of financial markets throughout the world into a global or international financial market. Thanks to globalisation of financial markets, issuers and investors in any country need not confine themselves to their domestic financial markets. For example, Indian companies can raise money by issuing equity and debt in international markets; likewise Indian investors can invest in outside markets. Of course, such participation is regulated and limited in some ways. Globalisation of financial markets is driven by three forces, in the main:

- (a) deregulation or liberalisation of financial markets in different parts of the world,
- (b) technological advances in computing, communication, and market structures, and
- (c) growing institutionalisation of financial markets. Indeed, these factors are interrelated.

Information and Computer Networks Advances in computer networks have transformed the investment environment. They have stimulated important innovations such as online trading, automated trade crossing, and online information dissemination.

Financial Engineering Financial engineering typically uses mathematical models and computer-based trading technology to synthesise new financial products. Often, it involves *unbundling* securities (splitting the cash flows from a security to create new securities) or *bundling* securities (combining two or more securities into a composite security). Such creative engineering leads to the design of securities that have customised risk attributes.

Securitisation Securitisation involves packaging a designated pool of assets (mortgage loans, consumer loans, hire purchase receivables, and so on) and issuing securities which are collateralised by the underlying assets and their associated cash flow stream. Securitisation is originated by a firm that seeks to liquefy its pool of assets. Securities backed by mortgage loans are referred to as *mortgage backed securities*; securities backed by other assets are called *asset backed securities*.

1.5 PORTFOLIO MANAGEMENT PROCESS

Investment management (or portfolio management) is a complex activity which may be broken down into the following steps:

1. **Specification of Investment Objectives and Constraints** The typical objectives sought by investors are current income, capital appreciation, and safety of principal. The relative importance of these objectives should be specified. Further, the constraints arising from liquidity, time horizon, tax, and special circumstances must be identified.
2. **Quantification of Capital Market Expectations** To address the asset-mix question you need relatively long term estimates of returns and risks of various asset classes. Put differently, you have to quantify capital market expectations.
3. **Choice of the Asset Mix** The most important decision in portfolio management is the asset mix decision. Very broadly, this is concerned with the proportions of 'stocks' and 'bonds' in the portfolio. The appropriate 'stock-bond' mix depends mainly on the risk tolerance and investment horizon of the investor.
4. **Formulation of Portfolio Strategy** Once a certain asset mix is chosen, an appropriate portfolio strategy has to be hammered out. Two broad choices are available: an active portfolio strategy or a passive portfolio strategy. An active portfolio strategy strives to earn superior risk-adjusted returns by resorting to market timing, or sector rotation, or security selection, or some combination of these. A passive portfolio strategy, on the other hand, involves holding a broadly diversified portfolio and maintaining a pre-determined level of risk exposure.
5. **Selection of Securities** Generally, investors pursue an active stance with respect to security selection or mutual fund selection. For stock selection, investors commonly go by fundamental analysis and/or technical analysis. The factors that are considered in selecting bonds (or fixed income instruments) are yield to maturity, credit rating, term to maturity, tax shelter, and liquidity.
6. **Portfolio Execution** This is the phase of portfolio management which is concerned with implementing the portfolio plan by buying and/or selling specified securities in given amounts.
7. **Portfolio Revision** The value of a portfolio as well as its composition – the relative proportions of stock and bond components – may change as stocks and bonds fluctuate. In response to such changes, periodic rebalancing of the portfolio is required.
8. **Performance Evaluation** The performance of a portfolio should be evaluated periodically. The key dimensions of portfolio performance evaluation are risk and return and the key issue is whether the portfolio return is commensurate with its risk exposure. Such a review may provide useful feedback to improve the quality of the portfolio management process on a continuing basis.

1.6 THE IMPORTANCE OF STUDYING INVESTMENTS

The Personal Aspects Almost everyone has wealth of some kind. If nothing else, this wealth consists of human capital. Most individuals make investment and disinvestment

throughout their lives in some form or other. Everyone needs to understand the basics of investing. At a minimum one should know:

- The functioning of financial markets.
- The power of compounding.
- The characteristics of various investment options.
- The benefits of diversification.
- The significance of asset allocation.
- The implications of near-informational efficiency of well developed securities market.
- The trade-off between risk and return.
- The psychological pitfalls of investing and the ways of mitigate them.

All these issues and many more are discussed in this book with the objective of making you an informed and savvy investor.

Investments as a Profession Apart from the importance of studying investments for personal reasons, the field of investments offers rewarding professional opportunities. A study of investments is required for:

- Investment analysts (also called security analysts) whose services are required by brokerage firms, investment companies, insurance companies and commercial and investment banks.
- Portfolio managers who manage funds in investment companies, insurance companies, pension funds, endowment funds and so.
- Traders and sales people in securities firms.
- Investment bankers whose services are required by firms for raising finances and consummating mergers and acquisitions.
- Financial planners and investment advisors who help individual clients in managing their finances and investments.

2.3 MONEY MARKET INSTRUMENTS

Debt instruments, which have a maturity of less than one year at the time of issue, are called money market instruments. These instruments are highly liquid and have negligible risk. The major money market instruments are Treasury bills, certificates of deposit, commercial paper, repos, and CBLO. The money market is dominated by the government, financial institutions, banks, and corporates. Individual investors scarcely participate in the money market directly. A brief description of money market instruments is given below.

Treasury Bills Treasury bills are the most important money market instrument. They represent the obligations of the Government of India which have a primary tenor like 91 days, 182 days and 364 days. They are sold on an auction basis every week in certain minimum denominations by the Reserve Bank of India. They do not carry an explicit interest rate (or coupon rate). Instead, they are sold at a discount and redeemed at par. Hence the implicit yield of a Treasury bill is a function of the size of the discount and the period of maturity.

Though the yield on Treasury bills is somewhat low, they have appeal for the following reasons: (a) They can be transacted readily and there is a very active secondary market for them. (b) Treasury bills have nil credit risk and negligible price risk (thanks to their short tenor).

Commercial Paper A commercial paper (CP) is a short term unsecured money market instrument. CPs can be issued by corporates, primary dealers (PDs), and all-India financial institutions under the umbrella limit specified by the Reserve Bank of India. The denominations of CPs are ₹ 5 lakhs or multiples thereof. CPs can be issued for maturities between 7 days and one year from the date of issue. CPs are sold at a discount and redeemed at par. Hence the implicit rate of interest is a function of the size of discount and the period of maturity.

Certificate of Deposit A certificate of deposit (CD) is a negotiable money market instrument issued by a bank or an eligible financial institution for a specified time period - while banks can issue CDs of maturities from 7 days to one year, financial institutions can issue CDs of maturities of 1 year to 3 years. CDs are issued in dematerialised form or as a Usance Promissory Note. CDs are issued at a discount on face value or on a floating rate basis.

CDs are a popular form of short-term investment for mutual funds and companies for the following reasons: (i) Banks are normally willing to tailor the denominations and maturities to suit the needs of the investors. (ii) CDs are generally risk-free. (iii) CDs generally offer a higher rate of interest than Treasury bills or term deposits. (iv) CDs are transferable.

Call Money Market Call money notice market is a market for unsecured lending or borrowing of funds for a period ranging between 1 day and 14 days. Participants in this market include banks, Primary Dealers (PDs), development finance institutions, insurance companies, and select mutual funds. While banks and PDs can borrow as well as lend in the call market, other participants can only lend. The call market is predominantly an overnight market.

Repos A "repo" involves a simultaneous "sale and repurchase" agreement. A "repo" works as follows. Party A needs short-term funds and Party B wants to make a short-term investment. Party A sells securities to Party B at a certain price and simultaneously agrees to repurchase the same after a specified time at a slightly higher price.

The difference between the sale price and the repurchase price represents the interest cost to Party A and conversely the interest income for Party B. A "reverse repo" is the opposite of a "repo" – it involves an initial purchase of a security followed by a subsequent sale. It is a safe and convenient form of short-term investment. From the above it is clear that there are two legs to the same transaction in a repo/reverse repo. The duration between the two legs is the "repo period," which is predominantly a one day period.

Collateralised Borrowing and Lending Obligations (CBLO) The CBLO market is a money market operated by the Clearing Corporation of India Limited (CCIL) for entities that have no access or restricted access to the inter-bank call money market.

CCIL members can borrow or lend funds against the collateral of eligible securities which include central government securities and such other securities as specified by CCIL from time to time. Borrowers in CBLO market are required to deposit the eligible securities with the CCIL based on which CCIL determines the borrowing limits. CCIL matches the borrowing and lending orders received from the members and notifies them. Though the securities provided as collateral remain in the custody of the CCIL, the beneficial interest of the lender is recognised through proper documentation.

2.4 BONDS OR DEBENTURES

Bonds or debentures represent long-term debt instruments. The issuer of a bond promises to pay a stipulated stream of cash flows. This generally comprises of periodic interest payments over the life of the instrument and principal payment at the time of redemption(s).

This section discusses the following types of bonds or debentures: central government securities, state development loans, savings bonds, private sector debentures, PSU bonds and preference shares.

Typical Features of Debt Instruments The typical features of debt instruments are:

1. They have a fixed tenor, at the end of which they are redeemable.
2. There is a minimum lock-in period; sometimes prepayment is allowed by bearing a penalty.
3. They carry a specified 'coupon rate' (interest rate) which may be a fixed rate or a variable rate linked to an underlying 'benchmark'.
4. The interest rate is payable periodically (quarterly, half-yearly, or annually) or cumulatively along with the principal at the time of redemption.
5. Some debt instruments like corporate debentures and government bonds are listed on stock exchanges and traded freely.
6. The interest on debt instruments is taxable in the hands of the recipients, unless it is specifically exempted as in the case of PPF and tax-free bonds.
7. As an asset class, debt is less risk than equity.
8. Debt may be 'secured' or 'unsecured'. Long-term corporate bonds are generally secured by way of mortgage of the assets of the borrowing form.

Central Government Securities Debt securities issued by the central government are popularly called G-secs. They may be in the form of Treasury Bills (discussed earlier) or Dated Government Securities (discussed here). Issued by the RBI on behalf of the Government of India, dated G-secs generally have a fixed maturity (2 to 30 years) and a fixed coupon (interest) rate and pay interest semi-annually. For example, 7.32 percent Government Security 2030 matures in 2030 and carries a coupon of 7.32 percent payable semi-annually. G-secs are issued in the following four forms:

- A promissory note payable to the order of a certain person.
- A bearer bond payable to a bearer.
- A stock which is registered in the books of RBI for which a stock certificate is issued or which are held to the credit of the holder in the Subsidiary General Ledger (SGL) Account maintained in the books of RBI and transferable by registration in the books of RBI. An agent, on behalf of his constituent (i.e., investor), can open a second SGL account with RBI called the Constituents' Subsidiary General Ledger account (CSGL Account).
- A bond which is held in a Bond Ledger Account (BLA) with RBI or an agency bank in which the government securities are held in a demat form. The investor in a BLA receives a Certificate of Holding from RBI/agency banks.

The Public Debt Office (PDO) of the RBI, Mumbai acts as the registry and central depository for the government securities which may be held either in the physical form or demat form except for all RBI regulated entities who have to necessarily hold and transact these securities in demat form only. A physical stock certificate is registered with PDO and can be transferred only by executing a transfer form which need to be registered with the PDO. Securities in demat form are maintained in SGL and CGSL accounts. An investor can use the depositories NSDL or CDSL also for holding their demat government securities.

G-secs qualify as SLR (statutory liquidity ratio) investments, unless otherwise stated. They are held mainly by banks, financial institutions, insurance companies, provident funds, and mutual funds. However, traditionally they have not appealed to individual investors because of long maturities and illiquid retail markets.

State Development Loans State Development Loans (SDLs) are debt securities issued by the state government. RBI manages the issue of these securities. Each state is allowed to issue these securities upto a certain limit each year. The coupon rates on SDLs are marginally higher than those on G-secs for the same maturity.

RBI Bonds A popular debt instrument, RBI Bonds (also referred to as RBI Floating Rate Bonds) have the following features:

1. It is a risk-free instrument as it is backed by RBI.
2. The maturity period is 7 years from the date of investment. However, premature withdrawal is allowed for senior citizens.
3. The bonds are issued in demat form.
4. The bonds are not transferable from one person to another, so they cannot be traded in the secondary market. Also, they cannot be used as collateral for a loan from a bank or financial institution.
5. The bonds are exempt from wealth tax.
6. Bondholders get a certificate of holding as proof of investment.
7. The rate of interest is linked to National Saving Certificate (NSC). It is 35 basis points over the respective NSC rate and it is revised every six months on January 1 and July 1.
8. The bonds are issued in denominations of Rs. 1000 and multiples thereof. There is no cap on investment.

Public Sector Undertaking Bonds Public Sector Undertakings (PSUs) issue debentures that are referred to as PSU bonds. There are two broad varieties of PSU bonds: taxable bonds and tax free bonds. While PSUs are free to set the interest rates on taxable bonds, they cannot offer more than a certain interest rate on tax-free bonds which is fixed by the Ministry of Finance. More important, a PSU can issue tax-free bonds only with the prior approval of the Ministry of Finance.

In general, PSU bonds have the following investor-friendly features: (a) there is no deduction of tax at source on the interest paid on these bonds, (b) they are transferable by mere endorsement and delivery, (c) there is no stamp duty applicable on transfer, and (d) they are traded on the stock exchanges. In addition, some institutions are ready to buy and sell these bonds with a small price difference.

Inflation Indexed Bonds Introduced in 2013–14, Government of India's Inflation Indexed Bonds have the following features:

- Individuals, HUFs, charitable institutions, and universities can invest in these bonds.
- A minimum amount of ₹ 5,000 and a maximum amount of ₹ 500,000 can be invested per annum.
- The tenure of the bonds is 10 years subject to certain terms. Early redemption is possible after 1 year for senior citizens and after 3 years for others.

- The rate of interest is: Base rate of 1.5 percent (annual) + Inflation rate based on final combined Consumer Price Index (compounded half-yearly).
- The bonds can be pledged as collateral for taking a loan.
- The application form is available with nationalised banks and leading private sector banks or can be downloaded from the RBI website (www.rbi.org.in).

Private Sector Debentures Akin to promissory notes, debentures are instruments used for raising long term debt. The obligation of a company towards its debenture holders is similar to that of a borrower who promises to pay interest and principal at specified times. The important features of debentures are as follows:

- When a debenture issue is sold to the investing public, a trustee is appointed through a deed. The trustee is usually a bank or a financial institution. Entrusted with the responsibility of protecting the interest of debenture holders, the trustee is responsible for ensuring that the borrowing firm fulfils its contractual obligations.
- Typically, debentures are secured by a charge on the immovable properties, both present and future, of the company by way of an equitable mortgage.
- All debentures issued with a maturity period of more than 18 months must be necessarily credit-rated. Further, for such debenture issues, a Debenture Redemption Reserve (DRR) has to be created. The company should create a DRR equivalent to at least 50 percent of the amount of issue before redemption commences.
- The company issuing the debentures can choose the redemption (maturity period) as well as the coupon rate. Further, the rate may be fixed or floating. In the latter case it is periodically determined in relation to some benchmark rate.
- Debentures sometimes carry a 'call' feature which provides the issuing company with an option to redeem the debentures at a certain price before the maturity date. Sometimes, the debentures may have a 'put' feature which gives the holder the right to seek redemption at specified times at predetermined prices.
- Debentures may have a convertible clause which gives the debenture holder the option to convert the debentures into equity shares on certain terms and conditions that are pre-specified.

Preference Shares Preference shares represent a hybrid security that partakes some characteristics of equity shares and some attributes of debentures. The salient features of preference shares are as follows:

- Preference shares carry a fixed rate of dividend.
- Preference dividend is payable only out of distributable profits. Hence, when there is inadequacy of distributable profits, the question of paying preference dividend does not arise.
- Dividend on preference shares is generally cumulative. Dividend skipped in one year has to be paid subsequently before equity dividend can be paid.
- Preference shares are redeemable – the redemption period is usually 7 to 12 years.
- Preference dividend is taxable.

2.5 EQUITY SHARES

Equity capital represents ownership capital. Equity shareholders collectively own the company. They bear the risk and enjoy the rewards of ownership. Of all the forms of securities, equity shares appear to be the most romantic. While fixed income investment avenues may be more important to most of the investors, equity shares seem to capture their interest the most. The potential rewards and penalties associated with equity shares make them an interesting, even exciting, proposition. No wonder, equity investment is a favourite topic of conversation in parties and get-togethers.

Terminology The amount of capital that a company can issue as per its memorandum represents the *authorised capital*. The amount offered by the company to the investors is called the *issued capital*. That part of the issued capital that has been subscribed to by the investors is called the *paid-up capital*. Typically, the issued, subscribed, and paid-up capital are the same.

The *par value* is stated in the memorandum and written on the share scrip. The par value of equity shares is generally ₹ 10, ₹ 5, ₹ 2, or ₹ 1. Infrequently, one comes across par values like ₹ 50, and ₹ 1,000. There is a proposal to make the par value uniformly at ₹ 1. The issue price is the price at which the equity share is issued. When the *issue price* exceeds the par value, the difference is referred to as the share premium. Note that the issue price cannot be, as per law, lower than the par value. The *book value* of an equity share is equal to:

$$\frac{\text{Paid-up equity capital} + \text{Reserves and surplus}}{\text{Number of outstanding equity shares}}$$

Quite naturally, the book value of an equity share tends to increase as the ratio of reserves and surplus to the paid-up equity capital increases. The *market value* of an equity share is the price at which it is traded in the market.

Rights of Equity Shareholders As owners of the company, equity shareholders enjoy the following rights:

- Equity shareholders have a residual claim to the income of the firm. However, the board of directors has the prerogative to decide how it should be split between dividends and retained earnings. Dividends provide current income to equity shareholders and retained earnings tend to increase the intrinsic value of equity shares.
- Equity shareholders elect the board of directors and have the right to vote on every resolution placed before the company. In practice, however, equity shareholders – scattered, ill-organised, passive, and indifferent as they often are – fail to exercise their collective power effectively.
- Equity shareholders enjoy the pre-emptive right which enables them to maintain their proportional ownership by purchasing the additional equity shares issued by the firm.
- As in the case of income, equity shareholders have a residual claim over the assets of the company in the event of liquidation.

Stock Market Classification of Equity Shares In stock market parlance, it is customary to classify equity shares as follows:

<i>Blue-chip Shares</i>	Shares of large, well-established, and financially strong companies with an impressive record of earnings and dividends.
<i>Growth Shares</i>	Shares of companies that have a fairly entrenched position in a growing market and which enjoy an above average rate of growth as well as profitability.
<i>Income Shares</i>	Shares of companies that have fairly stable operations, relatively limited growth opportunities, and high dividend payout ratios.
<i>Cyclical Shares</i>	Shares of companies that have a pronounced cyclicity in their operations.
<i>Defensive Shares</i>	Shares of companies that are relatively unaffected by the ups and downs in general business conditions.
<i>Speculative Shares</i>	Shares that tend to fluctuate widely because there is a lot of speculative trading in them.

Note that the above classification is only indicative. It should not be regarded as rigid and straitjacketed. Often you can't pigeonhole a share exclusively in a single category. In fact, many shares may fall into two (or even more) categories.

Peter Lynch's Classification¹ There are different ways of classifying shares. Here is Peter Lynch's classification of companies (and, by derivation, shares).

<i>Slow Growers</i>	Large and ageing companies that are expected to grow slightly faster than the gross national product.
<i>Stalwarts</i>	Giant companies that are faster than slow growers but are not agile climbers.
<i>Fast Growers</i>	Small, aggressive new enterprises that grow at 10 to 25 percent a year.
<i>Cyclicals</i>	Companies whose sales and profit rise and fall in a regular, though not completely predictable, fashion.
<i>Turnarounds</i>	Companies which are steeped in accumulated losses but which show signs of recovery. Turnaround companies have the potential to make up lost ground quickly.
<i>Asset Plays</i>	Companies that have valuable assets which have been somewhat overlooked by the stock market.

Nature of Equity Shares Benjamin Graham has described the nature of equity shares, referred to as common stocks in the US, very aptly:

"Common stocks have one important investment characteristic and one important speculative characteristic. Their investment value and average market price tend to increase irregularly but persistently over the decades, as their net worth builds up through the re-investment of undistributed earnings. However, most of the time common stocks are subject to irrational and excessive price fluctuations in both directions as a consequence of the ingrained tendency of most people to speculate. This tendency gives way to hope, fear, and greed."

<i>Pros</i>	<i>Cons</i>
■ Diversification ■ Professional management ■ Liquidity ■ Tax advantages ■ Comprehensive regulation ■ Transparency	■ Expenses ■ Lack of thrill

2.7 INSURANCE PRODUCTS²

The basic customer needs met by life insurance policies are protection and savings. Policies that provide protection benefits are designed to protect the policyholder (or his dependents) from the financial consequence of unwelcome events such as death or long-term sickness/disability. Policies that are designed as savings contracts allow the policyholder to build up funds to meet specific investment objectives such as income in retirement or repayment of a loan. In practice, many policies provide a mixture of savings and protection benefits.

Classification of Life Insurance Contracts

Life insurance contracts can be broadly grouped under four categories:

1. Term Insurance Contracts
2. Traditional Savings Linked Contracts
3. Unit Linked Contracts
4. Traditional Universal Life Contracts

Term Insurance Contracts This is a pure protection contract which provides a specified sum insured on the death of the policyholder within a prescribed term, say 5 or 10 or 20 years or whatever.

This contract can be purchased by paying a single premium at the time of inception of the contract or by paying regular level premiums over the term of the contract [also referred to as policy term].

Usually no survival benefit is paid under this contract if the insured person survives to the end of the policy term. However, some term insurance contracts provide a survival benefit in the form of return of the premiums paid during the policy term.

A popular variant of the term insurance contract is the decreasing term insurance contract under which the sum assured decreases over the term of the contract. Typically this type of contract is purchased along with a housing loan so that the proceeds from the contract can be utilised to repay the outstanding amount of the loan if the borrower dies during the repayment period of the housing loan.

Traditional Savings Linked Contracts These contracts are designed to provide both protection and savings benefits. Depending upon the term of the contract, these contracts can be classified into two categories:

1. Whole Life Insurance Contract
2. Endowment Insurance Contract

Whole Life Insurance Contract This type of contract is designed to provide insurance protection over the entire lifetime of the insured. Typically, the sum insured [also called as face value] is paid in the event of the death of the insured person regardless when the death occurs. Therefore, the difference between a whole life contract and a term insurance contract is that the latter type of contract has a specified policy term.

A whole life contract is usually structured as a single premium contract or as a "limited pay" contract where level premiums are required to be paid for a specified premium paying term, say, ten, fifteen or twenty years.

This contract can be terminated [surrendered] by the policyholder in return for a lumpsum amount called as cash value or as surrender value subject to certain conditions.

The policyholder can also avail of a "policy loan" under this contract. The policy loan will be a specified percentage [for example, 75 percent] of the surrender value acquired by the policy at the time of availing the loan. This loan carries a rate of interest which is typically set equal to the bank deposit rate plus 2 percent. The loan with interest can be repaid anytime during the term of the contract. Otherwise the outstanding amount of the loan plus interest will be deducted from the sum insured at the time when the sum insured becomes payable.

This type of contract is particularly useful as a means of protecting the wealth transfer that a parent wants to make to his or her children when he or she dies. Without this type of contract, the wealth transferred is likely to be meagre if the parent died young.

Endowment Insurance Contract This type of contract pays out a sum insured either in the event of death during the term of the contract or on survival at the end of the contract term. For example, a 15-year endowment insurance contract with a sum insured of ₹ 2 million will provide a death benefit of ₹ 2 million if the insured person dies during the period of 15 years or a survival benefit of ₹ 2 million at the end of 15 years.

This contract can be purchased by paying a single premium or by paying premiums over a limited period [for example the premium paying term may be 3 years for a 15-year policy term] or by paying premiums over the entire policy term.

This contract also provides surrender values and the policyholder can avail a policy loan subject to terms and conditions similar to what was discussed in the context of a whole life insurance contract.

Money Back Insurance Contract This type of contract is a variant of the endowment insurance contract where the survival benefit is paid in instalments at specified points of time over the term of the contract. For example, a 20-year money back contract with a sum insured of ₹ 2 million might pay a survival benefit of ₹ 500,000 at the end of the fifth year, tenth year, fifteenth year, and twentieth year. If the insured person were to die at the end of the fourteenth year, the contract will pay the entire sum of ₹ 2 million even though the insured person has already received ₹ 1 million by way of survival benefits.

2.8 RETIREMENT PRODUCTS

The important retirement products in India are:

1. Employee's Provident Fund (EPF) Scheme
2. Employee's Pension Scheme (EPS)
3. National Pension Scheme
4. Pension Plans of Insurance Companies

Employee Provident Fund (EPF) Scheme

A major vehicle of savings for salaried employees, the Employees' Provident Fund Scheme has the following features:

- Each employee has a separate provident fund account into which both the employer and employee are required to contribute 12 percent of the employee's basic wage and dearness allowance, and retaining allowance every month.
- The employee can choose to contribute additional amounts, upto 100 percent of basic salary and DA in Voluntary Provident Fund (VPF).

- While the contribution made by the employer is fully tax exempt (from the point of view of the employee), the contributions made by the employee can be deducted before computing the taxable income under Section 80 C.
- The interest rate on the provident fund balance is declared annually. Interest is totally exempt from taxes. The interest, however, is accumulated in the provident fund account and not paid annually to the employee.
- The balance in the provident fund account is fully exempt from wealth tax. Further, it is not subject to attachment under any order or decree of a court.
- Both EPF and VPF enjoy EEE (exempt-exempt-exempt) status.
- Within certain limit, the employee is eligible to take a loan against the provident fund balance pertaining to his contributions only.

Typically, the provident fund contributions of the employer and employees are remitted to a government organisation called the Employees Provident Fund Organisation (EPFO) which is responsible for pooling and investing these contributions. Based on the investment earnings on the pooled fund, the EPFO declares annual rate of interest which is credited to the employee's provident fund account.

Employees' Pension Scheme (EPS)

Guaranteed by the government, this scheme is administered by the Employees Provident Fund Organisation (EPFO). Under this scheme 8.33 percent from the employer's contribution of 12 percent to the Employee Provident Fund is diverted to the Employee Pension Scheme. The central government also contributes one and one-sixth percent of wages. Under this scheme, pension is provided to the member (or family) upon retirement.

National Pension Scheme

Traditionally, the Employees' Pension Scheme (EPS) was the dominant pension scheme in India. Guaranteed by the government, this scheme is administered by the Employees Provident Fund Organisation (EPFO). Under this scheme 8.33 percent from the employer's contribution of 12 percent to the Employee Provident Fund is diverted to the Employee Pension Scheme. The central government also contributes one and one-sixth percent of wages. Under this scheme, pension is provided to the member (or family) upon retirement.

Effective January 1, 2004, the central government introduced the National Pension Scheme (NPS) to cover all central government employees who joined service on or after January 1, 2004. The salient features of the NPS are as follows:

- It will work on a defined contribution basis. In a defined contribution scheme, the payout on the completion of the scheme or retirement depends on the returns generated from the contributions made by subscribers.
- It will have two tiers – Tier I and Tier II.
- Tier I is mandatory for all government servants joining government service on or after 1.1.2004. In Tier I, a government servant will have to make a contribution of 10 percent of his Basic Pay and DA which will be deducted from his salary every month. The government will make an equal matching contribution. Tier I contribution will be kept in a non-withdrawable Pension Tier I account.

A deferred annuity enables the policyholder to build up a pension that becomes payable on his or her retirement from gainful employment. At the vesting date of the annuity, the alternative of a lump sum may be offered in lieu of part or all of the pension, thereby meeting any need for a cash sum at that point, for example to pay off a housing loan. As in the case of immediate annuity plan a variety of options are available for the type and mode of payment.

2.9 REAL ESTATE

For the bulk of the investors, the most important asset in their portfolio is a residential house. In addition to a residential house, the more affluent investors are likely to be interested in the following types of real estate.

- Semi-urban land
- A second house
- Commercial property
- Agricultural land
- Time share in a holiday resort

Historically, real estate in India has been a very rewarding asset class. The pros and cons of investing in real estate are as follows:

Pros	Cons
■ Rental yield (or saving) ■ Reasonable capital appreciation ■ Psychic pleasure ■ Low risk ■ Tax benefits	■ Large ticket size ■ Legal disputes ■ Illiquid markets ■ High spread and commissions ■ Maintenance effort

2.10 PRECIOUS OBJECTS

Precious objects in general are valuable objects that are physically not voluminous. The major types of precious objects are:

- A. Precious Metals
 - Gold
 - Silver
- B. Precious Stones
 - Diamonds
 - Others
- C. Art Objects and Collectibles
 - Paintings
 - Sculpture
 - Antiques
 - Others

The pros and cons of investing in precious assets are as follows:

Pros	Cons
■ Inflation hedge	■ Illiquid markets
■ Efficient diversification	■ High spread and commissions
■ Psychic pleasure	■ Maintenance effort
■ Safe haven	

2.11 FINANCIAL DERIVATIVES

A derivative is an instrument whose value depends on the value of some underlying asset. Hence, it may be viewed as a side bet on that asset. From the point of view of investors and portfolio managers, futures and options are the two most important financial derivatives. They are used for hedging and speculation.

Futures A futures contract is an agreement between two parties to exchange an asset for cash at a predetermined future date for a price that is specified today. The party which agrees to purchase the asset is said to have a *long position* and the party which agrees to sell the asset is said to have a *short position*.

The party holding the long position benefits if the price increases, whereas the party holding the short position loses if the price increases and vice versa. To illustrate this point, consider a futures contract between two parties, viz., A and B. A agrees to buy 1000 shares of Acme Chemicals at ₹ 100 from B to be delivered 90 days hence. A has a long position and B has a short position. On the 90th day, if the price of Acme Chemicals happens to be ₹ 105, A gains ₹ 5,000 [$1,000 \times (105 - 100)$] whereas B loses ₹ 5,000. On the other hand, if the price of Acme Chemicals on the 90th day happens to be ₹ 95, A loses ₹ 5,000 [$1,000 \times (95 - 100)$], whereas B gains ₹ 5,000.

Options An option gives its holder the right to buy or sell an underlying asset (our focus here will be on equity shares) on or before a given date at a predetermined price. Note that options represent a special kind of financial contract under which the option holder enjoys the right (for which he pays a price), but has no obligation, to do something.

There are two basic types of options: call options and put options. A call option gives the option holder the right to buy a fixed number of shares of a certain stock, at a given exercise price on or before the expiration date. To enjoy this option, the option buyer (holder) pays a premium to the option writer (seller) which is non-refundable. The writer (seller) of the call option is obliged to sell the shares at the specified price, if the buyer chooses to exercise the option.

A put option gives the option holder the right to sell a fixed number of shares of a certain stock at a given exercise price on or before the expiration date. To enjoy this right, the option buyer (holder) pays a non-refundable premium to the option seller (writer). The writer of the put option is obliged to buy the shares at the specified price, if the option holder chooses to exercise the option.

2.12 ALTERNATIVE INVESTMENTS

The search for better performing assets prods investors to explore the category of alternative investments, which is a term used very broadly to cover a variety of investments other than stocks, bonds, and cash. It covers investments such as the following

- Private equity
- Venture capital
- Real assets
- Commodities
- Hedge funds

Characteristics Alternative investments are sometimes used to reduce overall investment risk through diversification. Some of the characteristics of alternative investments are:

- Low correlation with traditional financial investments such as stocks and bonds
- Difficulty in determining the current market value of the asset
- Relative illiquidity
- High transaction costs
- Limited historical risk and return data
- Considerable investment analysis required before purchasing

2.13 CRYPTOCURRENCIES

Cryptocurrencies are digital currencies operating independently of central banks in many developed countries. Prominent examples include Bitcoin, Ethereum, and Tether. Over the past 15 years, Bitcoin's price has experienced rollercoaster rides, from \$1 to over \$100,000, with daily range as high as \$2500. Noble Laureate Robert Schiller, who had characterised bitcoin as a bubble had reportedly said subsequently in an interview in 2018, that he "doesn't know what to make of bitcoin ultimately." Spot Bitcoin ETFs are approved for direct public trading in the US exchanges and futures contracts trade on CME.

The bitcoin network was started in 2009 by one Satoshi Nakamoto, whose identity is not known. It is a peer-to-peer electronic system with a distributed ledger called the blockchain, which contains a record of all Bitcoin transactions since its inception. Every Bitcoin transaction first enters a temporary "memory pool," and this pool periodically (approximately every 10 minutes) gets converted into a block by an enterprising "miner" who successfully cracks a complex mathematical puzzle. This process of finding the solution makes it extremely difficult for anyone to alter past transactions or create fraudulent blocks. The new block becomes the latest link in the chain, and every node (computer terminal) in the network gains access to this blockchain. The nodes validate and broadcast the transactions within the network. As a reward for his efforts, the miner is awarded a certain number of Bitcoins, and this is how new coins are created. To ensure that the time taken for validation of transactions remains uniformly around ten minutes or so despite more and more miners joining the fray, the difficulty level for the puzzle is suitably adjusted once after every 2016 blocks (approximately in every two weeks).

To create scarcity value, Bitcoin has a finite supply capped at 21 million coins and this limit is embedded in the bitcoin protocol. Any alteration of the protocol would require a consensus among the majority of nodes on the network which is highly unlikely given its decentralised nature. Because of this, as the demand for the coin increases, its price tends to rise. Also, the limit makes bitcoins inflation-proof, at least theoretically. The blocks in the chain are also almost tamper-proof, as it would be virtually impossible to hack all the nodes around the globe.

Cryptocurrency should be regarded as a speculative instrument. It is very risky and can lead to significant losses. If you have a speculative urge and you can tolerate high volatility, you may start with a small initial investment (say with Rs.1000 to 5000) through one of the many duly registered cryptocurrency exchanges like CoinDCX, CoinSwitch Kuber, WazirX etc. Crypto exchanges have to be registered with the Financial Intelligence Unit (FIU) and comply with anti-money laundering regulations. If you want to transact directly with another party, go to a FIU registered P2P platform like LocalBitcoins, Bisq, Binance P2P etc., to locate possible buyers and sellers. First you have to download and set up a secure Bitcoin wallet. Most software wallets connect to nodes to retrieve the necessary information for the trading. As these software wallets store your private keys locally, make abundantly sure that they have very strong passwords and also have backups. If you want to be very safe, buy a hardware wallet that can be connected to your system after installing a companion software. Ensure that you are downloading everything only from official sites, your trading partner is trustworthy, and the transactions are not illegal. The terms of the trade and mode of payment etc. have to be mutually agreed upon before initiating a trade. As the entire crypto business is riddled with scams, always be updated on news, be alert and careful in all transactions.

Enter the crypto fray only if you are a big risk taker by nature. In case you do so, always ensure that your private key is safely hidden. If the private key is lost, you lose access to all your holdings without any recourse whatsoever, as no RBI or government will help you out. Any gains from your trade will be taxed at a flat 30%, and there will be no set-off for any losses.

2.14 WARREN BUFFETT'S CLASSIFICATION

Warren Buffett classifies the numerous investment possibilities into three major categories: currency-based investments, unproductive investments, and investment in productive assets.

Currency – based Investments Investments that are denominated in a given currency include bank deposits, money market instruments, bonds, and mortgages. While these investments are generally thought to be safe, they can be quite risky. Their beta may be zero, but the risk of a loss of purchasing power on account of inflation is quite real. The picture is far worse for tax-paying investors. As Buffett put it: "Governments determine the ultimate value of money, and systematic forces will sometimes cause them to gravitate to policies that produce inflation. From time to time such policies spin out of control."

Unproductive Investments These are assets that will never produce anything. These assets are purchased by buyers in the hope that someone else will pay more for them in future.

As Buffett put it, "This type of investment requires an expanding pool of buyers, who, in turn, are enticed because they believe the buying pool will expand still further. Owners are not inspired by what the asset itself can produce- it will remain lifeless forever- but rather by the belief that others will desire it even more avidly in future." Surprisingly, for a while Tulips became a favorite of buyers in the 17th century.

The most important asset in this category is gold, a huge favorite of investors. Gold, however, has two significant shortcomings. First, it does not have much utility. While gold has industrial and ornamental utility, the demand for gold for these purposes is limited and less than its new production. Second, gold is not a productive or procreative asset. An ounce of gold held for eternity will still be an ounce of gold.

Productive Assets Investments in business, farms, or real estate are productive in nature. Ideally, these assets retain their purchasing- power value, while requiring very little new capital investment. Farms, real estate, and many business fulfill these criteria.

2.15 SOME SALIENT FEATURES OF HOUSEHOLD FINANCE IN INDIA

1. A large fraction of the wealth of Indian households is held in the form of physical assets (in particular, gold and real estate). This is very different from what is found internationally and especially unusual for younger households, and for households in the bottom 40 percent of the wealth distribution.
2. Despite the high holdings of real estate, mortgage penetration is low early in life and rises as households age. This is also different from households in other countries, where debt has a characteristically hump-shaped pattern over the life cycle.
3. The levels of unsecured debt, perhaps taken from non-institutional sources such as money lenders is high.
4. Insurance penetration levels (life and non-life) are low despite numerous sources of risk such as erratic rainfalls (causing income shocks to agrarian segments of the population), health shocks, and natural calamities (such as floods and cyclones).
5. There is a strong negative correlation between participation in insurance and the incidence of debt from non-institutional sources. This suggests that households deal with risks through high-cost borrowing ex-post as against ex-ante insurance against such risks.
6. Indian households can benefit significantly by re-allocating assets away from gold towards financial assets. Similarly Indian households can benefit by shifting from non-institutional debt to institutional debt.

Types of Stock Market Indices

Investors often ask the question: How is the market doing? This interest in the broad market movement stems from the general observation that prices of most of the stocks tend to move together, a fact that has a fairly strong empirical underpinning. The general movement of the market is typically measured by indices representing the entire market or important segments thereof. Most of the stock market indices used in practice are of three types:

Price-weighted Index A price-weighted index is an index reflecting the sum of the prices of the sample stocks on a certain date in relation to a base date. The price-weighted index assumes that the investor buys one share of each stock included in the index.

Equal-weighted Index An equal-weighted index is an index reflecting the simple arithmetic average of the price relatives of the sample stocks on a certain date in relation to a base date. An equal-weighted index assumes that the investor invests an equal amount of money in each stock included in the index.

Value-weighted Index A value-weighted index is an index reflecting the aggregate market capitalisation of the sample stocks on a certain date in relation to a base date. A value-weighted index assumes that the investor allocates money across various stocks included in the index in such a way that the weights assigned to various stocks are proportional to their market capitalisation.

To illustrate the nature of these three types of indices, consider the data for a sample of five stocks for two dates, the base date and day t , given in Exhibit 4.1.

Exhibit 4.1 Data for Constructing Stock Market Indices

Share	Price on Base Date (₹)	Price on Day t	Price Relative	No. of Out-standing Shares (in mln)	Market Capitalisation on the Base date (₹ in mln) (1×4)	Market Capitalisation on Day t (₹ in mln) (2×4)
	1	2	3	4	5	6
A	50	70	140	10	500	700
B	40	50	125	20	800	1000
C	100	90	90	5	500	450
D	20	80	400	15	300	1200
E	15	24	160	50	750	1200
Sum	225	314	915		2850	4550

Assuming that the base date index value is 100, the index values for day t for the different types of indices are as follows:

$$\text{Price-weighted index: } \frac{314}{225} \times 100 = 140$$

$$\text{Equal-weighted index: } \frac{915}{500} \times 100 = 183$$

$$\text{Value-weighted index: } \frac{4550}{2850} \times 100 = 160$$

To illustrate the nature of different types of indices, we expressed the current value in relation to the value on the base date. In practice the index value for a particular day is calculated with reference to the index value for the previous day. For example, the value-weighted index for day t is calculated as follows:

$$\text{Index value}_t = \text{Index value}_{t-1} \times \frac{\text{Market capitalisation}_t}{\text{Market capitalisation}_{t-1}}$$

Free Float Market Value-Weighted Index The market value-weighted index takes into account all the shares issued by a company. However, all the shares issued by a company are normally not available for trading. For example, the shares held by promoters and those acquired under the FDI route are not freely traded. Experts believe only the shares that are freely available for trading (called free float shares) should be used to compute an index. An index constructed in this manner is called a free float market value-weighted index. The Nifty Index, S&P BSE Sensex Index, and the Nasdaq Composite Index are examples of such an index.

With the growing dominance of institutional investors interested in holding a broadly diversified portfolio, the relevant criteria for judging an index are: Can the index be used as a benchmark for portfolio construction (investability)? Can the index be used as a benchmark for comparing performance in terms of return and risk (volatility)? In terms of these criteria, a free float cap weighted index is better than a market cap weighted index.

Good Properties of Value-weighted Indexes Value-weighted indexes have some good properties:

- These indexes reflect the average rupee – weighted performance of all investors. This means that for anyone who does better than the index, someone else must do worse.
- In an efficient market, capitalization – weighted portfolio provides investors the “best” trade-off between risk and return. This property is referred to as mean-variance efficiency.

Chain-Linked Methodology

The index employs a chain-linked methodology. This means that today's values are based on the previous value times the change since the previous calculation. This ensures that it is easy to add and remove stocks from the index while preserving its integrity.

To illustrate this, consider a simple situation where in periods 1 and 2, stocks A and B are included in the index, but in period 3, stock B is dropped and in its place stock C is included. Period 1 is the base period and its index value is set at 100. The number of

shares, price per share, market capitalisation, and index values for the three periods are calculated as follows:

Period 1				Period 2			Period 3		
Stock	Number of shares	Price per share	Market cap	Number of shares	Price per share	Market cap	Number of shares	Price per share	Market cap
A	100	50	5000	100	60	6000	100	60	6000
B	200	10	2000	200	10	2000	200	6	1200
C	400	3	1200	400	4	1600	400	6	2400
Market capitalisation of A and B (stocks included in the index)			7000	Market capitalisation of A and B (stocks included in the index)		8000	Market capitalisation of A and C (stocks included in the index)		8400
Index value			100	Index value (8000/1000)		114.3	Index value		126.3
				Market capitalisation of A and C		7600			

*The index value for period 3 is calculated as follows:

$$\text{Index value for period 2} \times \frac{\text{Market capitalisation of stocks A and C in period 3}}{\text{Market capitalisation of stocks A and C in period 2}} = 114.3 \times (8400/7600) = 126.3$$

Total Returns Index A price index captures only the price movements of constituent stocks. To get a better picture of returns, dividends received from the constituent stocks should also be factored into the index value. Such an index is called a total returns index. Total returns indices are available on the Nifty Price Index and other Nifty Indices.

Stock Market Indices in India

A number of stock market indices are constructed in India: Nifty Index, S&P BSE Sensex Index, RBI Share Price Index, BSE-500, BSE Dollex, Nifty Junior, and so on. Out of these, the most popular indices are Nifty Index and S&P BSE Sensex and so they will be discussed in some length.

Nifty Arguably the most rigorously constructed stock market index in India, the Nifty reflects the price movement of 50 stocks selected on the basis of market cap and liquidity (impact cost). The base date selected for Nifty is November 3, 1995. The base value of Nifty has been set at 1,000. Nifty is a value-weighted index, in which the weights of constituents reflect the relative market caps of the companies that constitute the index. Earlier Nifty was constructed on the basis of full market cap. Now it constructed on the basis of free

float market cap. Free float represents the non-promoter, non-strategic shareholding. For example the free float of ONGC is not even 15 percent because the rest is owned by the Government of India and public sector companies. This change from full market cap to free float market cap was effected to conform to the best global practice. Nifty is reviewed every six months and NSE gives appropriate notice before replacing the stocks in the index.

Sensex Perhaps the most widely followed stock market index in India, the S&P BSE Sensex Index, popularly called the *Sensex*, reflects the movement of 30 sensitive shares from specified and non-specified groups. BSE considers factors such as listing history, trading frequency, market capitalisation, and industry importance for including a stock in the Sensex. The composition of the stocks in the Sensex is reviewed and modified by BSE to ensure that Sensex remains representative of stock market conditions. Sensex is a value-weighted index. The base date for Sensex is April 1, 1979, although the Sensex came into existence on January 1, 1986 when its value was computed at 598.53 (the base date value being 100). Till August 31, 2003, Sensex was computed on the basis of full market cap. From September 1, 2003 Sensex is being constructed on the basis of free float market cap.

Other Indices in India Apart from Nifty and Sensex, which are the most popular indices in India, there are many other indices reported by NSE and BSE. Since Nifty and Sensex are constructed with 50 and 30 shares respectively, some researchers feel that these indices do not represent the market in totality. Hence, they prefer to look at broader indices based on a larger number of shares. The popular broad-based indices of NSE are Nifty 100, Nifty 200 and Nifty 500. Similarly, NSE also reports indices based on the market capitalization, such as Nifty Midcap 100, Nifty Smallcap 100 etc. Sectoral indices are another category of indices that are considered by analysts interested in specific sectors. Some of the sectoral indices of NSE are Nifty Bank, Nifty FMCG, Nifty Pharma etc. NSE also has a set of thematic indices such as Nifty Commodities, Nifty PSE etc. Another interesting category of indices by NSE are the indices covering the companies belonging to a particular corporate group such as Tatas.

STOCK MARKET INDICES AROUND THE WORLD

The most popular stock market indices around the world are the Dow Jones Industrial Average, the Standard & Poor's Composite 500 Index, Nikkei 225, and FTSE (pronounced "footsie").

- The Dow Jones Industrial Average (DJIA) is based on 30 large, "blue-chip" corporations in the US. It is a price-weighted index.
- The Standard & Poor's Composite 500 (S & P 500) stock index is a broad based index of 500 US stocks. It is a value-weighted index.
- The Nikkei 225 is based on the largest 225 stocks of Tokyo Stock Exchange. It is a price-weighted average.
- FTSE published by the Financial Times of London is based on 100 large London Stock Exchange stocks. It is a value-weighted index.