Mutual Funds 7

This Module includes:

Mutual Funds

SLOB Mapped against the Module

To equip oneself with the knowledge of application of various techniques in security evaluation, building a portfolio, measuring its performance and making revisions to optimise the returns. (CMLO 3a)

Module Learning Objectives:

After studying this module, the students will be able to -

- Understand the basic concepts associated with mutual funds.
- Appreciate relevant regulations relating to mutual funds in India.
- Learn the process of calculation of NAV of mutual funds units.
- Understand various ways of measuring eth performance of mutual funds
- Learn basic concepts associated with ETFs, REITs and InvITs.

Meaning, Advantages and Disvantages, Structure and Types

7.1

7.1.1 Meaning of Mutual Fund

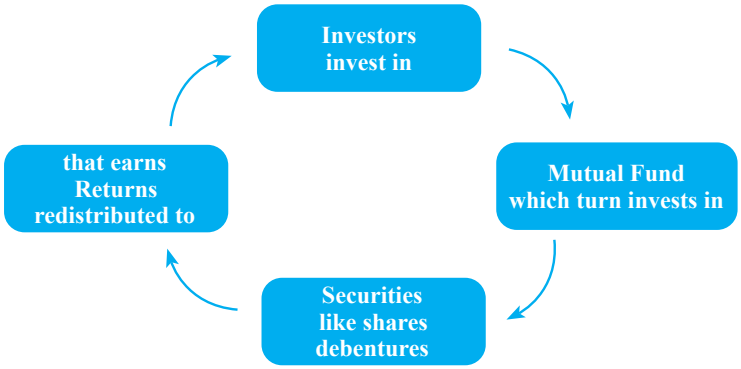

Figure 7.1: Mutual Fund a common pool for investment

A Mutual Fund is a trust that pools he savings of a number of investors who share a common financial goal. The money thus collected is then invested in capital market instruments such as shares, debentures and other securities. The incomeearned through these investments and the capital appreciations realized are shared by its unit holders in proportion to the number of units owned by them. Thus a Mutual Fund is the most suitable investment for the common man as well as HNIs since it offers an opportunity to invest in a diversified, professionally managed basket of securities at a relatively low cost.

7.1.2 Entities Involved

There are various entities involved in the overall structure.

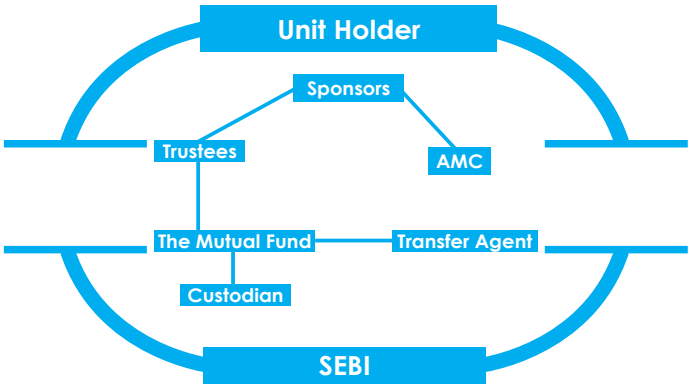

Figure 7.2: Various Entities involved in Mutual Fund

A MF enterprises five separate entities, namely sponsor, mutual fund trust, AMC, registars and transfer agents and custodian. The sponsor establishes the MF and gets it registered with SEBI.

1. Sponsor

The sponsor is a body corporate who establishes a mutual fund after completing the formalities as prescribed by SEBI. A mutual fund has to be established through the medium of a sponsor.

Conditions:

(a) Sponsor should have a sound track record and general reputation of fairness and integrity in all its business transactions.

(b) Sponsor should be carrying on business in financial services for a period of not less than five years.

(c) Sponsor should contributed at least 40% to the worth of the AMC.

(d) A deed shall be executed by the sponsor in favour of the trustees in the instrument of trust.

2. Trustees

'Trustees" means Board of Trustees or the Trustee Company who holds the property of the mutual fund in trust for the benefit of the unit holders.

Conditions:

(a) A mutual fund shall appoint trustees in accordance with the mutual fund regulations.

(b) An asset management company or any of its officers or employees shall not be eligible to act as a trustee of any mutual fund.

(c) Two-thirds of the trustees shall be independent persons and shall not be associated with the sponsors.

(d) No person appointed as a trustee of a mutual fund can be appointed as a trustee of any other mutual fund unless that a person is an independent trustee.

(e) The person so appointed as a trustee should have a thorough knowledge about financial markets and have not been found guilty by any laws.

3. Asset Management Company (AMC)

The AMC manages the fund of the various schemes and employs a large number of professionals for investment, research and agent servicing. The AMC also comes out with new schemes periodically. **It plays a key role in the running of the mutual fund and operates under the supervision and guidance of the trustees.** An AMC's income comes from the management fees, it charges for the schemes it manages and the **management fees**, is calculated as a percentage of net assets managed.

SEBI has issued the following guidelines for the formation and functioning of the AMCs:

(a) An AMC should be headed by an independent non-interested and non-executive chairman

(b) The managing director and other executive staff should be full time employees of AMC

(c) Fifty percent of the board of trustees of AMC should be outside directors who are not in any way connected with the AMC

(d) The AMC's will not be permitted to conduct other activities such as merchant banking or issue management.

4. Distributors

Distributors earn a commission for bringing the investors into the schemes of a mutual fund. This commission is an expense for the scheme. Depending upon the financial and physical resources at their disposal, the distributors could be:

(a) Tier 1 distributors who have their own or franchised network reaching out to investors all across the country; or

(b) Tier 2 distributors who are generally regional players with some reach within other region; or

(c) Tier 3 distributors who are small and marginal players with limited reach.

5. Custodian/Depository in a MF

The MF shall appoint a custodian to carry out the custodial services for the schemes of the fund and sent intimation of the same to the Board within fifteen days of the appointment of custodian. In case of dematerialized securities, holdings will be held by depository through depository participant. The custodian handles the investment back office operations of a mutual fund. This ensures an ongoing independent record of the investments of the scheme. It looks after the receipt an delivery of securities, collection of income, distribution of dividends and segregation of assets between schemes. The sponsor of a mutual fund can't act as a custodian. This condition is meant to ensure that the assets of the mutual fund are not in the hands of its sponsor.

6. Registrars and Transfer Agents

An investor's holding in mutual fund scheme is typically tracked by the Registrar and Transfer Agent (R&T). Their functions include: (a) issuing units, (b) redeeming units, (c) sending fact sheets, (d) annual reports, etc. Some funds handle such functions in-house, while others outsource it to SEBI-approved registrars and transfer agents like CAMs etc.

7.1.3 History of Mutual Find in India

The mutual fund industry in India started in the year 1963 with the formation of Unit Trust of India, at the initiative of Government of India and Reserve Bank of India with the primary objective was to mobilize the small savings.

The history of mutual fund industry can be divided into five phases.

Phase I Establishment and Growth of Unit Trust of India 1964-1987

Unit Trust of India was established in the year 1963 by an Act of Parliament. It was set up by RBI and it continued to operate under the regulating control of the RBI until the two were delinked in the year 1978 and the entire control was transferred in the hands of Industrial Development Bank of India.

UTI's first innovative and most successful launch was Unit Scheme 1964 or popularly known as US-64.

Phase II Entry of Public Sector Funds (1987-1993)

In 1986, the Government of India amended banking regulation act and allowed public sector commercial banks to set up mutual funds. This led to SBI, PNB, Canara Bank, Bank of India, Bank of Baroda, etc. commercial banks to set up their own mutual funds.

In 1987, GoI further granted permission to insurance corporations in the public sector to float mutual funds and accordingly LIC and GIC set up their own mutual funds. The period of 1987-1993 can be termed as the period of public sector mutual funds, from a single player in 1985 to 8 players in 1993. However, UTI remained the leader with about 60% market share and asset under management of the industry has increased seven times to ₹47,100 crores.

Phase III Emergence of Private Sector Banks (1993-1996)

The permission was given to the private sector funds including foreign funds management companies (most of them entering through joint venture with Indian promoter) to enter the mutual fund industry in 1993. In 1993, the

first mutual fund regulation came into being under which all mutual funds, except UTI was to be registered. The Kothari Pioneer (now merged with Franklin Templeton) was the first private sector mutual fund registered in July 1993).

Phase IV Growth and SEBI Regulation (1996-2004)

The mutual fund industry witnessed robust growth and strict regulations from SEBI after 1996. The mobilization of funds and the number of players operating in the industry reached new heights as investors started showing more interest in mutual funds.

Investor's interests were safeguarded when SEBI (Mutual Funds) Regulation 1996 was introduced and the Government of India offered tax benefits to investors through their budget proposal in the year 1999 which exempted all divided incomes in the hands of the investors. Various investor awareness programmes were also initiated by SEBI and Association of Mutual Funds in India (AMFI).

Phase V Growth and Consolidation (2004 Onwards)

During this phase, the industry witnessed several mergers and acquisitions, e.g. Alliance Mutual Fund have been taken over by Birla Sun Life. Simultaneously, more international mutual fund players entered India like Fidelity, Franklin Templeton Mutual Fund, etc.

7.1.4 Types of Schemes

The schemes floated by mutual funds can be grouped into three broad categories based on their operations, investment objectives and others.

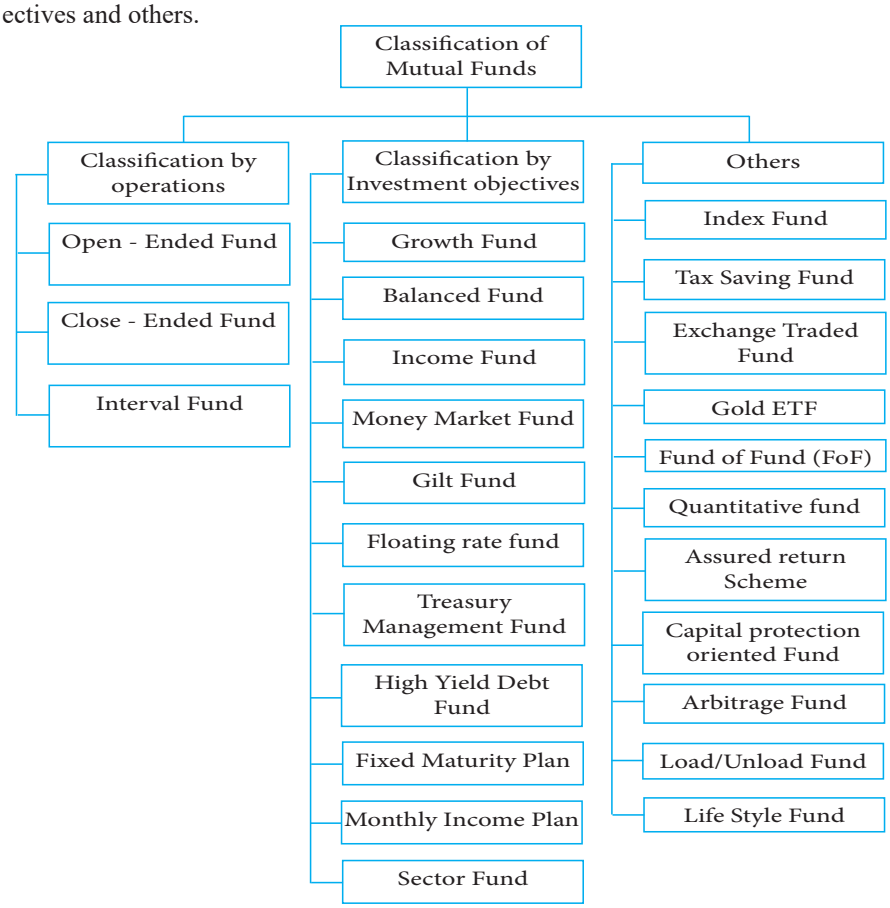

Figure 7.3: Classification of Mutual Funds

7.1.4.1 Classification by Operations

Open-Ended Fund

When the units are sold and redeemed, everyday or continuously on an all-going basis at the price determined by the fund's NAV, they are call OEFs. These funds have to announce their sale and repurchase prices from time to time and these prices and NAVs normally remain close to each other. There is not ceiling of the amount of investment by the investors and similarly as and when the investors chose to sell, the MF is legally bound to repurchase those units. As a result, the corpus changes daily heavily. The units of such funds are perpetuities, that is without any redemption date, no lock in period and they need not to be listed on the stock markets since in their case, the investor carryout transactions directly with MFs. OEFs have to invest a good part of their capital/ fund in liquid assets in order to be ever ready to repurchase their units. Usually, the investors of OEFs are assured of dividends, capital appreciation, safety and liquidity, etc, make the OEFs quite popular amongst wide range of investors.

Closed-End Funds

A closed-end fund has a stipulated maturity period which generally range from 3 to 15 years. The fund is open for subscription only during a specified period. Investors can invest in the scheme at the time of new fund offer (NFO) and thereafter they can buy or sell the units of the scheme on the stock exchanges where they are listed. Their corpus remains fixed till their redemption, the date of which is fixed and declared at the time of issue itself. They have a lock in period of 3-5 years and they may offer guaranteed dividend. Once there units are listed, they may trade at a discount (market price < NAV) or at a premium or at NAV, but it has been found that they mostly trade at a discount. This may provide investors the chance to arbitrage the spreads especially when the redemption date is close by. In practice, many CEFs in India offer a return profile which is similar to that of debentures or bonds or deposits. In order to provide an exit route to the investors, some closed-ended funds give an option of selling back the units to the mutual fund through periodic repurchase at NAV related prices. SEBI regulations stipulate that at least one of the two exit routes must be provided to the investors.

Difference between Open End and Closed End Funds:

Aspect	Open End Funds	Closed End Funds
Initial Subscription	Open-End Fund is one which is available for subscription all through the year.	Fund is open for subscription only during a specified period.
Maturity	Do not have a fixed maturity.	Stipulated maturity period (3 to 15 Years)
Subsequent Transactions	Investors can buy and sell units at Net Asset Value related prices.	Investors can invest at the time of the initial public issue and thereafter they can buy or sell the units of the scheme on the stock exchanges where they are listed.
Repurchase	Any time.	Based on terms of the fund. Periodic repurchase at NAV related price.

7.1.4.2 Classification by Investment Objectives

Growth Fund: It is primarily aimed at achieving capital appreciation over medium to long-term. In these schemes, a higher amount of fund is invested inequity and equity-linked instruments and the remaining are in debt and money market securities. Investors willing to consume a medium to higher level of risk in anticipation of a sound capital appreciation in the future usually prefer to invest in these funds. They are also known as 'nest egg' or 'long haul' investments.

Income Fund: It provides regular and constant income to the investors. Such schemes generally invest in fixed

income securities such as bonds, corporate debentures and of government securities. Such funds are less risky as compared to equity schemes as they are not affected by the fluctuations in equity markets.

Balanced Fund: It provides both capital appreciation and periodic returns over a long period of time. The portfolio of these kinds of funds constitutes of both equity and debt as indicated in their offer documents. Usually, a balanced fund invests 60 per cent of net assets in equity and 40 per cent in debt instruments, money market instruments and cash.

Money Market Mutual Funds: The aim of money market funds is to provide easy liquidity, preservation of capital and moderate income. These schemes generally invest in safer short-term instruments such as treasury bills, certificates of deposit, commercial paper and inter-bank call money. Returns on these schemes may fluctuate depending upon the interest rate prevailing in the market.

Gilt Funds: These funds exclusively put their funds in Government securities, both Central and State Governments and Treasury Bills. Highest safety is achievable with a comparative low return and these funds can be both short-term and long-term and depending on their investment horizon.

Floating Rate Funds: These funds focus on the securities that pay a floating rate interest such as bank loans, bonds and other debt securities. Floating rate funds are of two types such as long-term and short-term. Short-term fund plan contains securities of shorter maturity period, with higher liquidity, whereas the portfolio of long-term plan is skewed towards longer term maturation.

High Yield Debt Funds: These funds generate a higher interest income as they park their funds in instruments having lower credit ratings. These funds are also known junk bond funds and are popular abroad but not prevalent in India. Credit Suisse High Yield, Fidelity Capital and Income Fund are examples of high yield debt funds.

Monthly Income Plan (MIP): MIP is a marginal equity product, which works for conservative investors who are comfortable in investing a small component of their money in equity. The risk profile of these funds is low to medium. DSP Black Rock Monthly Income Plan, HDFC Monthly Income Plan, Reliance Monthly Income Plan are few examples of MIP.

Sector Funds

These funds allocate capital in a specified sector of the economy or may be in a specified particular industry. As these funds do not allow diversification, the risk is more in comparison to other well-diversified portfolios. Baroda Pioneer Banking and Financial Services Fund, Reliance Media and Entertainment Fund, SBI Magnum Sector Funds (Umbrella-Pharma), UTI Auto Sector Fund are some of the examples of sector funds in India.

7.1.4.3 Other Funds

Index Fund: These funds are designed to replicate the performance of a well-established stock market index or a particular segment of the stock market. In India, an Index fund mirrors the major market index, like nifty or sensex as closely as possible by investing in all the stocks that comprise in proportions equal to the weightage of those stocks in the index.

Tax-Saving Funds (Equity Linked Savings Schemes): In India, these funds offer rebates under Section 80C of Income Tax Act. They are also known as equity linked savings schemes. These funds usually have a lock-in period of 3 years.

Exchange Traded Funds (ETFs): A new investing trend of increasing importance is the exchange-traded funds (ETFs). These few financial assets have some characteristics of index mutual funds, closed-end funds and even individual stocks.

An ETF is a basket of stocks that tracks a particular sector, investment style, geographical area, or the market as a whole.

Gold ETFs (GETFs): These are exchange traded finds that are meant to close track the price of physical gold. Each unit of the ETF allows the investor to own 1 g. of gold without physically owning it. Thus investing in a gold ETF provided the benefit of liquidity and marketability which area a limitation of possessing physical gold. As there is no physical gold transaction, owners of these funds do not bear any carrying cost.

Fund of Funds (FOFs): Fund of Funds is a mutual fund which invests in other mutual funds. Just a mutual fund invests in a number of different securities, a fund of funds holds shares of many different mutual funds. These funds were designed to achieve even greater diversification than traditional mutual funds.

Assured Return Schemes: These schemes assure a specific return to the investors irrespective of performance of the scheme. The return and other benefits are clearly stated in the offer document.

Arbitrage Funds: These funds focus to derive benefits from the price differences between cash and future derivative markets. For example, a fund may purchase equity shares in the cash market and simultaneously sell the same in the futures market. Return is the difference between the price of the two markets. The higher return of the fund depends on the volatility of the equity market. Arbitrage funds have a low risk return trade-off and generate moderate returns.

Load Fund: As the term implies, this fund charges a percentage of NAV for entry into or exit from these funds. That is, investors pay a charge each time they buy or sell units in the fund. This charge is used by the mutual funds for marketing and distribution expenses.

Life Style Fund: This is a special type of fund where the asset mix is determined by the level of risk and return that is appropriate for an individual investor. Several factors such as investor's age, risk appetite, investment purpose and the time duration of investment, determine the asset mix. Aditya Birla Sun Life India, Gennext Fund, Kotal Lifestyle Fund and UTI Life Style Fund are some examples of life style funds in India.

7.1.5 Options of Mutual Funds

Indian mutual funds offer three broad options to Indian investors. They are:

(a) **Growth option:** The growth option reinvests the profits back into scheme and it is the ideal option for investors who are looking to create a corpus for long-term goal.

(b) **Dividend option:** Under the dividend pay-out option, the scheme distributes realized profits to investors as dividends. This option is useful to investors looking for periodic income from their mutual fund investments.

(c) **Dividend reinvestment option:** Dividend reinvestment option does not distribute the dividends to investors, the dividend is declared but not physically paid out. Instead, it is reinvested back into the scheme and the additional units are issued. These additional units are treated like a fresh purchase.

7.1.6 Systematic Withdrawal Plan and Systematic Investment Plan

A Systematic Withdrawal Plan (SWP) allows investors to receive a regular income while still managing their investments growth potential. Investors can use a SWP to supplement the income they are receiving from any other source. A SWP includes convenient pay-out options and has several tax advantages. An investor can choose to withdraw from the capital appreciation in the NAV without affecting the principal amount or can withdraw a fixed amount every month or quarter and any amount thereafter.

Systematic Investment Plan (SIP): SIP is a feature specially designed for those who are interested in building

wealth over a long-term and plan out a better future for themselves and their family. The SIP allows investors to save a fixed amount of money every month or quarter for the purchase of additional units. Anyone can enroll for this facility by starting an account with minimum investment amount and giving post-dated cheques or ECS of periodic investment every month for a specified period based on one's convenience. This disciplined approach to investing gives advantage like benefit of compounding, rupee cost averaging, convenience and help to build wealth over the long-term and avoiding the risk of timing the market.

7.1.7 Advantages of Mutual Funds

(i) **Professional Management:** Mutual funds are managed by a body of professional managers who are highly experienced and posit requisite skills to manage funds efficiently along with a good research team. The performance of mutual fund schemes depends on the quality of fund manager employed.

(ii) **Diversification:** Mutual funds allocate their funds across industries and sectors. In this way, investors hold a diversified portfolio even with a small amount of investment that would otherwise required a big amount of capital.

(iii) **Convenient Administration:** It reduces administrative jargons, saves time and makes investing easy. It also helps to avoid many problems such as bad deliveries, delayed payments and unnecessary follow up with brokers and companies.

(iv) **Return Potential:** It has been observed that over a medium term to long-term, mutual funds have the potential to provide high return as they invest in a diversified basket of selected securities.

(v) **Low Costs:** Investors bear a low cost by investing in m utual funds as brokerage, custodial and other fees are relatively less as compared to directly investing in the capital markets.

(vi) **Liquidity:** In open-ended schemes, investors can get their money back promptly at net asset value related prices from the mutual fund. With close-end schemes, investors can sell their units on a stock exchange at the prevailing market price or avail of the facility of direct repurchase at NAV related prices which some closed-ended and interval schemes offer periodically.

(vii) **Transparency:** The mutual fund companies regularly disclose to investors their related value of investment/s, in which companies the investments have been made by the scheme, the proportion invested in each class of assets and the fund manager's investment strategy and outlook.

(viii) **Flexibility:** Through features such as systematic investment plans (SIPs), systematic withdrawal plans (SWPs) and dividend reinvestment plans, one can systematically invest or withdraw funds according to his requirements and expediency.

(ix) **Choice of Schemes:** Many mutual funds cater the need of investors and allow them to switch from one fund to another according to investor's choice. For example, if investor's objective changes from capital appreciation (gain) to income, they can switch from growth to income funds and vice-versa.

(x) **Investment Strategy:** Investors individually may lack sufficient funds to invest in blue chip stocks. Whereas, a mutual fund because of its large corpus allows even a small investor to take the benefit of its affordability for investment strategy.

(xi) **Well Regulated:** All mutual funds are registered with SEBI and they function within the provisions of strict regulations designed to protect the interests of investors. The operations of mutual funds are regularly monitored by SEBI.

7.1.8 Limitations of Mutual Funds

(i) Through diversification a mutual fund reduces risk, but it does not ensure against any losses of funds that may occur during turmoil.

(ii) Performance of many funds are below the benchmark due to poor performance of fund managers and policies of the fund houses.

(iii) Investors have no option while choosing the securities they want to invest in.

(iv) Many mutual funds provide positive returns but well below the benchmark level.

(v) Investors rely on the past performance of mutual funds to select a good fund and it may not be a guarantee for a good return in future.

(vi) Despite the liquidity of mutual funds, most mutual funds (particularly open-ended funds) cannot be bought or sold in the middle of the trading day. One can only buy and sell them at the end of the day once current value of holding is calculated.

(vii) Diversification reduces the risk no doubt, however, on the other hand, the diversification has a disadvantage of dilution. This implies that investment in a single security may double or triple its value over a certain period whereas in an MF investment the security counts only a small part.

(viii) If fund manager's pay is linked to performance of the fund, he may be tempted to perform only on short-term neglecting the long run performance of the fund.

(ix) Sometimes excessive management fees is charged by the fund, which reduces the return available to an investor. The annual fund operative fees in India is 1 to 3%. This fees is charged to investors regardless the performance of the fund. If the investment is not sufficiently diversified, it will be a huge loss to the investors.

(x) Mutual funds usually maintain large cash reserves against a large number of simultaneous withdrawals. Although this provides investor with liquidity, it means that some of the fund money is invested in cash instead of assets which tend to lower the investor's potential return.

Solved Questions

1. What are the comparative advantages of investing in the following:

   (a) Open-end mutual funds

   (b) Individual stocks and bonds that you choose for yourself

   Answer:

   (a) **Open-end mutual funds:** Diversification from large-scale investing, lower transactions costs associated with large-scale trading, professional management that may be able to take advantage of buy or sell opportunities as they arise, record keeping.

   (b) **Individual stocks and bonds:** No management fee, ability to coordinate realization of capital gains or losses with investors' personal tax situations, capability of designing portfolio to investor's specific risk and return profile.

2. Open-end equity mutual funds find it necessary to keep a significant percentage of total investments, typically around 5% of the portfolio, in very liquid money market assets. Closed-end funds do not have to maintain such a position in 'cash equivalent' securities. What difference between open-end and closed-end funds might account for their differing policies?

Answer:

Open-end funds are obligated to redeem investor's shares at net asset value and thus must keep cash or cash-equivalent securities on hand in order to meet potential redemptions. Close-end funds do not need the cash reserves because there are no redemptions for closed-end funds. Investors in closed-end funds sell their shares when they wish to cash out.

3. Balanced funds, life-cycle funds and asset allocation funds all invest in both the stock and bond markets. What are the differences among these types of funds?

Answer:

Balanced funds keep relatively stable proportions of funds invested in each asset class. They are meant as convenient instruments to provide participation in a range of asset classes. Life cycle funds are balanced funds whose asset mix generally depends on the age of the investor. Aggressive life cycle funds, with larger investment in equities are marketed to younger investors, while conservative life-cycle funds, with larger investment in fixed income securities, are designed for older investors. Asset allocation funds, in contrast, may vary the proportions invested in each asset class by large amounts as predictions of relative performance across classes vary. Asset allocation funds therefore, engage in more aggressive market timing.

4. Why can closed-end funds sell at prices that differ from net asset value while open-end funds do not?

Answer:

Unlike an open-end fund, in which underlying shares are redeemed when the fund is redeemed, a closed-end fund trades as a security in the market. Thus, their prices may differ from the NAV.

Regulations

7.2

7.2.1 Establishment of a Mutual Fund

1) **SEBI Regulations:** Mutual Funds should be registered with SEBI, for collecting funds from the public. Mutual Funds are governed by SEBI Regulations, are subject to monitoring and inspection by SEBI.

2) **Sponsor:**

   (a) Meaning: Sponsor is a Body Corporate who establishes a Mutual Fund after completing the formalities prescribed in the SEBI's Mutual Fund Regulations. A Mutual Fund has to be established through the medium of a sponsor.

   (b) Conditions:

   - Sponsor should have a sound track record and general reputation of fairness and integrity in all its business transactions.
   - Sponsor should contribute at least 40% to the Net Worth of the Asset Management Company.
   - A Deed shall be executed by the Sponsor, in favour of the trustees named in the instrument of trust.

3) **Trust:**

   (a) Constitution: Mutual Fund should be established as either a Trustee Company or a Trust, under the Indian Trust Act and the instrument of trust shall be in the form of a deed.

   (b) Registration: The Trust Deed shall be duly registered under the provisions of the Indian Registration Act, 1908.

   (c) Contents: Deed should contain the clauses specified in the Third Schedule of SEBI Regulations.

Eligibility criteria for grant of a certificate of registration as per Regulation 7 of SEBI (Mutual Funds) Regulations, 1996. For the purpose of grant of a certificate of registration, the applicant has to fulfil the following, namely:-

a) The sponsor should have a sound track record and general reputation of fairness and integrity in all his business transactions.

   Explanation: For the purposes of this clause "sound track record" shall mean the sponsor should -

   1. Be carrying on business in financial services for a period of not less than five years; and
   2. The net worth is positive in all the immediately preceding five years; and
   3. The net worth in the immediately preceding year is more than the capital contribution of the sponsor in the asset management company; and

4. The sponsor has profits after providing for depreciation, interest and tax in three out of the immediately preceding five years, including the fifth year.

b) The applicant is a fit and proper person.

c) In the case of an existing mutual fund, such fund is in the form of a trust and the trust deed has been approved by the Board;

d) The sponsor has contributed or contributes atleast 40% to the net worth of the asset management company;

Provided that any person who holds 40% or more of the net worth of an asset management company shall be deemed to be a sponsor and will be required to fulfil the eligibility criteria specified in these regulations.

e) The sponsor or any of its directors or the principle officer to be employed by the mutual fund should not have been guilty of fraud or has not been convicted of an offence involving moral turpitude or has not been found guilty of any economic offence.

f) Appointment of trustees to act as trustees for the mutual fund in accordance with the provisions of the regulations;

g) Appointment of asset Management Company to manage the mutual fund and operate the scheme of such funds in accordance with the provisions of these regulations;

h) Appointment of custodian in order to keep custody of the securities or gold and gold related instrument or other assets of the mutual fund held in terms of these regulations, and provide such other custodial services as may be authorised by the trustees.

Investors looking to invest in mutual funds must be aware of rules and regulations that govern the Indian mutual fund sector – SEBI guidelines for mutual funds.

In India, the SEBI MF Regulations of 1996 govern the working of mutual funds. These guidelines treat mutual funds like Public Trusts that fall under the Indian Trust Act of 1982. For handling mutual funds and ensuring accountability on the trustees, the guidelines specify a three-tier set up comprising of the fund managers, the investors, and the representatives.

SEBI may conduct an on-site due-diligence of the existing businesses of the sponsor to study the following:

1. Existing infrastructure for client servicing, complaints handling;
2. Track record of complaint / grievance handling; and
3. Compliance philosophy and practice.

7.2.2 Restrictions and Conditions for investments by Mutual Funds

(I) Inter-Scheme Transfer: Transfers of Investments from one scheme to another scheme in the same Mutual Fund will be allowed only if —

(a) Market Price: Transfers are done at prevailing market price for quoted instruments on spot basis.

(b) Investment Objective: Securities transferred should be in conformity with the investment objective of the scheme to which such transfer has been made.

(II) Fees for Investment: A Scheme can invest in another scheme — (a) under the same AMC, (b) other Mutual Fund, without charging any fees.

(III) Issue Expenses: Initial Issue Expenses of any scheme should not exceed 6% of funds raised there under.

(IV) Delivery Based Transactions:

(a) Delivery: Mutual Fund should buy and sell securities only on the basis of deliveries. It should take, delivery of the securities for purchases, and deliver the securities in case of sale.

(b) Prohibition: Purchase and sale should not result in a position where the Mutual Fund has to make short sale or carry forward transaction.

(c) Derivative Transaction: Mutual Funds can enter into Derivatives Transactions in a Recognized Stock Exchange for the purpose of hedging and portfolio balancing, in accordance with the guidelines issued by SEBI.

(V) Title: Every MF should get the securities purchased or transferred in the name of Mutual Fund on account of the concerned scheme, wherever investments are intended to be of long-term nature.

(VI) Bank Deposits: Pending deployment of funds of a scheme as per the investment objective, Mutual Funds can invest the same in Short-term Deposits of Scheduled Commercial Banks.

(VII) Restriction on Investments: Investments made by Mutual Funds should confirm to the following limits:

Instrument / Investment in	Quantum of Investment and
(a) Debt instruments of a single issuer and Mortgaged backed Securitised Debt	⅄ 15% of NAV of the Scheme ⅄ 20% with approval of Board of Trustees and AMC ⅄ Govt. Securities and Money Market ⅄ Instruments.
(b) Unrated Debt Instruments (Approval of Board of Trustees and AMC required)	⅄ Individually (for each issuer) - 10% of NAV of Scheme ⅄ Aggregate Investment - 25% of the NAV of Scheme
(c) Share Capital of a Company	⅄ 10% of the Company's Paid Up Capital.
(d) Scheme under the same AMC or other Mutual Fund under the same management or schemes of other AMC	⅄ 5% of the NAV of the Mutual Fund.
(e) Equity Shares or Equity Related instruments of a Company	⅄ 10% of the NAV of the Scheme ⅄ Not applicable to investments in index fund or sector or industry specific scheme
(f) Unlisted Equity Shares/Equity Related instrument — Open Ended Scheme — Close Ended Scheme	⅄ 5% of the NAV of the scheme ⅄ 10% of the NAV of the scheme

(VIII) Prohibited Investments: A Mutual Fund should not invest in -

(a) any unlisted security of an Associate or Group Company of the Sponsor,

(b) any security issued by way of private placement by an Associate or Group Company of the Sponsor,

(c) listed securities of Group Companies of the Sponsor which is in excess of 25% of the Net Assets,

(d) any Fund of a Fund Scheme.

7.2.3 Investors' Rights & Obligations under the Mutual Fund Regulations

(A) Rights:

(i) Unit holder has proportionate right in the beneficial ownership of the scheme assets, as well as any dividend or income declared under the scheme.

(ii) Unit holder is entitled to receive dividend warrant within 42 days.

(iii) AMC can be terminated by 75% of the unit holders.

(iv) Unit Holder has the right to inspect major documents i.e., material contracts, Memorandum of Association and Articles of Association of the AMC, Offer Document, etc.

(v) 75% of the unit holders have the right to approve any changes in the close-ended scheme.

(vi) Every unit holder have right to receive copy of the annual statement.

(B) Limitations to Investors' Rights:

(i) No right against Trust: Unit holders cannot sue the Trust, but they can initiate proceedings against the Trustees, if they feel that they are being cheated.

(ii) No right to sue for lower returns: Except in certain circumstances, AMC cannot assure a specified level of return to the investors. AMC cannot be sued to make good any shortfall in such schemes.

(C) Investors' Obligations:

(i) Study of risk factors: An investor should carefully study the risk factors and other information provided in the Offer Document. Failure to study will not entitle him for any rights thereafter.

(ii) Monitoring schemes: It is the responsibility of the investor to monitor his schemes, by studying the Reports and other Financial Statements of the Funds.

7.2.4 Trustees with regard to setting up of a Mutual Fund and their eligibility for appointment

(A) Meaning: Trustees means Board of Trustees or the Trustee Company who hold the property of the Mutual Fund in trust, for the benefit of the unit holders.

(B) Regulations: Mutual Fund shall appoint trustees in accordance with Mutual Fund regulations.

(C) Eligibility Conditions: A person can be appointed as a Trustee, only if he—

(a) is a person of ability, integrity and standing,

(b) Has not been found guilty of moral turpitude, and

(c) Has not been convicted of any economic offence or violation of any securities laws, and

(d) Has furnished the required particulars and information.

(D) Not Eligible for appointment as Trustee:

(a) Asset Management Company

(b) Officers or Employees of AMC

(E) Restriction on Further Appointment: A person who is appointed as a Trustee of a Mutual fund, cannot be appointed as a Trustee of any other Mutual Fund unless —

(a) He is an independent trustee.

(b) Prior approval of the Mutual Fund of which he is a trustee has been obtained for such an appointment.

(F) Independent Trustees: At least 2/3rd of the trustees should be independent persons and shall not be associated with the sponsors or be associated with them in any manner whatsoever.

(G) Company as Trustee: In case a Company is appointed as a Trustee, then its Directors can act as trustees of any other trust, provided that the object of the trust is not in conflict with the object of the Mutual Fund.

7.2.5 Criteria for appointment of AMC and other conditions to be satisfied by an AMC

(A) Eligibility Criterion:

(i) Financial Performance:

- Sound Track Record (Net Worth and Profitability), good reputation and fairness in transaction.
- Minimum Net Worth = ₹10 Crores.

(ii) Directors / Key Personnel

- **Qualification and Experience:** Directors of AMC to have adequate professional experience in finance and financial services related field.
- **Clean Records:** Should not have been found guilty of moral turpitude or convicted of any economic offence or violation of any securities laws / economic laws.
- **Previous Employment:** They should not have worked for any AMC / Mutual Fund / Intermediary during the period when such AMC / MF / Intermediary were suspended by SEBI.

(iii) Independent Directors: Board of Directors of AMC to have atleast 50% Independent Directors, i.e. not associated with, the sponsor or any of its subsidiaries or the Trustees.

(iv) Chairman: Chairman of the AMC should not be Trustee of any Mutual Fund.

(B) Other Terms and Conditions: Approval granted shall be subject to the following conditions —

(i) Restriction on Directorship: Director of the AMC shall not be Director in another AMC. Independent Directors are excluded from this restriction.

(ii) Furnishing of Particulars: In case of any material change in the information/ particulars previously furnished, AMC should immediately inform the SEBI.

(iii) Appointment of Directors: Appointment of Director of an AMC will require the prior approval of the Trustees.

(iv) Compliance with Regulations: AMC should comply with SEBI Regulations.

(v) Change in Controlling Interest: Change in controlling interest of the AMC will require the prior approval of Trustees, SEBI and the Unit Holders.

(vi) Furnishing of Documents / Information to Trustees: AMC should furnish information and documents to the Trustees as and when required by the Trustees.

(C) Restriction on Activities of AMC:

(i) Not to be Trustee: AMC should not act as a Trustee of any Mutual Fund.

(ii) Business Activities: Without the approval of SEBI, an AMC cannot undertake any other business activities except :-

- Portfolio Management Services,
- Management and advisory services to Offshore Funds, Pension Funds, Provident Funds, Venture Capital Funds, etc.

(iii) Not to Invest in Schemes: AMC should not invest in any of its schemes, unless full disclosure of such intention has been made in the offer document.

Duties and obligations of an AMC with reference to management of Mutual Fund Scheme:

1) **Regulations:** AMC should ensure that the Scheme Funds are invested only in accordance with SEBI Regulations and the Trust Deed.

2) **Investment Decisions:** It should take all its investment decisions with care and diligence, in the same manner as any other person in the same business would have taken.

(a) Liability for Acts of Persons: AMC is responsible for the acts of commission or omissions by its Employees, or

(b) Persons whose services have been procured by the AMC.

3) **Non-Exclusion from Liability:** AMC or its Directors or other Officers shall not be absolved of liability to the Mutual Fund for their acts of commission or omission, while holding such position or office.

4) **Activity Report to Trustees:** AMC should submit a report on its activities and the compliance with the SEBI regulations. Such a report should be furnished every quarter.

5) **Related Party Transaction:**

(a) AMC should not utilize the services of the — (i) Sponsor, or (ii) any of its Associates, or (iii) Employees or their relatives, for any securities transaction and distribution and sale of securities without proper disclosure.

(b) Report to SEBI/Trustees: Transactions entered into with any of the associates should be reported to SEBI and the Board of Trustees.

(c) Transactions by Key-Management Personnel: AMC should furnish the details of transactions in securities by the key personnel of the AMC in their own name or on behalf of the AMC and shall also report to SEBI, as and when required by SEBI.

6) **Large Investor Particulars:**

(a) Situation: Company has invested more than 5% of the NAV of a Scheme.

(b) Reportable Information: Investment made by the Mutual Fund in that Company/ Subsidiaries.

(c) **Reporting and Disclosure:** The above information should be brought to the notice of the Trustees by the AMC, and disclosed in the half yearly and annual accounts of the respective schemes.

7) **Personnel Related Information:** Detailed bio-data of all its Directors along with their interest in other Companies, within 15 days of their appointment, should be submitted to the Trustees.

8) **Restriction on Appointment of Personnel:** AMC should not appoint any person as key personnel who has been found guilty of any economic offence or involved in violation of securities laws.

9) **Appointment of Registrar/Agents:** AMC shall appoint Registrars and Share Transfer Agents who are registered with SEBI.

7.2.6 Regulatory requirements with regard to Money Market Funds and the issues that act as hurdles for the success of Money Market Mutual Funds

1) **Regulatory Framework:** Instructions based on recommendations of the Task force constituted under the chairmanship of Shri D. Basu on MMMFs were as follows -

(a) No minimum amount of investments prescribed.

(b) Minimum lock-in-period is 46 days.

(c) Minimum of 25 percent of funds (20 percent earlier) shall be invested in treasury bills and dated Government securities having an unexpired maturity upto one year.

(d) Maximum of 30 percent of funds (20 percent earlier) shall be diverted to call money market.

(e) Investment in Commercial Papers restricted to 15 percent.

(f) Maximum of 20 percent of funds may be invested in commercial transactions and accepted/ coaccepted by banks.

(g) Investments in Capital Market Instruments have been barred so as to avoid undue risks.

(h) Borrowing and Lending between schemes of the Money Market Mutual Funds and between sponsoring bank and the Money Market Mutual Funds are also prohibited. Switching of assets between Schemes will have to be at market rates and based on conscious investment decisions.

2) **Regulatory impediments for the success of Money Market Funds:**

(a) The Lock-in period hampers the liquidity of the fund. Money Market Fund should ideally operate like a savings account.

(b) Investors expect to get more than what they would get on bank fixed deposits. Considering the administrative expenses involved, the yield on Money Market Funds should be relatively higher.

(c) Retail investors have to be educated about Money Market Funds. A huge network is needed to target such investors.

(d) A large corpus is needed to deal in the money market on a consistent basis.

(e) No regulatory body has been determined.

Computation of NAV

7.3

7.3.1 Computation of NAV

Mutual Funds are a vehicle that collects money from investors to buy securities. These investors have a common objective, and this pool of money is advised by the fund manager who decides how to invest the money. A Mutual Fund is an organisation (in India this organisation must be in the form of a trust) that pools the savings of a number of investors called as unit holders who share a common goal. The money thus collected is invested by the professional fund managers in different types of securities depending upon the objectives of the scheme. The return/ loss on investment is shared by the unit holders in proportion to the number of units owned by them.

Net Asset Value

The performance of a particular scheme of a mutual fund is denoted by Net Asset Value (NAV). In simple words, NAV is the market value of the securities held by the scheme. Mutual funds invest the money collected from investors in securities markets. 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. The net assets value of any MF scheme is the current value of its all assets net of its liabilities. Division of this amount by number of outstanding units of the scheme, we get NAV per unit. NAV per unit represents the amount which the holder of one unit will get if the scheme is dissolved or liquidated (for this calculation, forced or distress sale is not assumed, moreover the liquidation or dissolution costs are not considered). NAV per unit is generally called as NAV (ignoring the phrase "per unit").

Net Asset Value in Relation to a Mutual Fund

Net asset value (NAV) of a mutual fund (MF) scheme is the market value per unit of all the assets of the scheme. It is the value of each of the scheme. It includes dividends, interest accruals and reduction of liabilities and expenses.

(A) **Ascertainment:**

(i) The investor's subscription is treated as the capital in the balance sheet of the fund and the investments on their behalf are treated as assets.

(ii) NAV per unit = Net asset value of the fund ÷ Number of units outstanding.

(iii) It reflects the realizable value that the investor will get for unit that he is holding if the scheme is liquidated on that date.

(iv) Net assets = (Market value of investments + Receivables + Accrued income + Other assets) – (Accrued expenses + Payables + Other liabilities).

(B) **Utility**

(i) The performance of a particular scheme of a mutual fund is denoted by NAV.

(ii) NAV plays an important part in investor's decisions to enter or to exit the schemes.

(iii) Analysts use the NAV to determine the yield on the schemes.

Illustration 1

Calculate the NAV of Excellent Fund from the following data:

Size of the fund, ₹300 crore; face value, ₹10 per unit, market value of investment, ₹360 crore; receivables, ₹6 crore; accrued income, ₹4 crore, Liabilities, ₹2 crore; and accrued expenses, ₹1 crore

Solution:

$$\text{NAV} = \frac{\text{Market value of investment} + \text{Receivables} + \text{Accrued income} - \text{Liabilities} - \text{Accrued expenses}}{\text{Number of units outstanding}}$$

$$= \frac{360 + 6 + 4 - 2 - 1}{\frac{300}{10}} = \frac{367}{30} = ₹12.23 \text{ per unit}$$

Rate of Returns: It is the difference between the net asset value at the end and net asset value at the beginning plus the amount of dividend, if any, declared by the fund. It can be monthly, quarterly, annually or long-term basis.

Illustration 2

A mutual fund has a net asset value of ₹50 at the beginning of the year. During the year, a sum of ₹4 was distributed as income (dividend) besides ₹3 as capital gains distribution. At the end of the year, NAV was ₹55. Calculate total return for the year. Suppose the aforesaid mutual fund in the next year declared a dividend of ₹5 as income distribution and no capital gains distribution and NAV at the end of second year was ₹50, what is the return for the second year?

Solution:

$$\text{Total return in year I} = \frac{\text{Change in NAV} + \text{Distribution (Dividend} + \text{Capital)}}{\text{NAV at the begining of the period}}$$

$$= \frac{(55 - 50) + 4 + 3}{50} = \frac{12}{50} \text{ or } 24\%$$

$$\text{Total return in year II} = \frac{(50 - 55) + 0 + 5}{50} = 0\%$$

For example, if the market value of securities of a mutual fund scheme is INR 200 lakh and the mutual fund has issued 10 lakh units of INR 10 each to the investors, then the NAV per unit of the fund is INR 20 (i.e. 200 lakh/10 lakh). NAV is required to be disclosed by the mutual funds on a daily basis. Unlike stocks (where the price is driven by the market and changes from minute-to-minute), mutual funds don't declare NAVs through the day. Instead, NAVs of all mutual fund schemes are declared at the end of the trading day after markets are closed, in accordance with SEBI Mutual Fund Regulations. Further, as per SEBI Mutual Fund Regulations, for all mutual fund schemes, other than liquid fund schemes, the mutual fund Units are allotted only at prospective NAV, i.e., the NAV that would be declared at the end of the day, based on the closing market value of the securities held in the respective schemes.

NAV of a fund scheme = (1) Market value of traded listed securities + (2) Estimated value of (i) Non-traded listed securities (ii) Unlisted securities + (3) Liquid assets/ cash + (4) Accrued dividend/interest - (5) Accrued expenses - (6) Other liabilities

Net Asset Value = Net Asset of the Scheme ÷ Number of units outstanding

Illustration 3

Mr. Ajay on 1.7.2020, during the initial offer of some Mutual Fund invested in 10,000 units having face value of ₹10 for each unit. On 31.3.2021 the dividend operated by the M.F. was 10% and Mr. Ajay found that his annualized yield was 153.33%. On 31.12.2022, 20% dividend was given. On 31.3.2023 Mr. X redeemed all his balance of 11,296.11 units when his annualized yield was 73.52%. What are the NAVs as on 31.3.2021, 31.12.2022 and 31.3.2023?

Solution:

Annualized Return = % Return from date of investment to the date on which annualized return is given or calculated ÷ Period of the above return in terms of years.

31.3.2021:

Annualized Return = Return from 1.7.2020 to 31.3.2021 / 0.75 year

or, 153.33 = Return from 1.7.2020 to 31.3.2021 / 0.75 year

Return from 1.7.2020 to 31.3.2021 = 115%

It means the investment made on 1.7.2020 has grown to ₹ 2,15,000 on 31.3.2021

Let the NAV = X

X = [10,000 units + (Amount of dividend/X)] X = 2,15,000

[10,000 units + (₹10,000/X)] X = 2,15,000

NAV = 20.50

Total no. of units = 10487.80

31.12.2022

No of units issued (reinvestment of dividend as on 31.12.2022):

11296.11- 10487.80 = 808.20

NAV = [10487.80 × Dividend per share] /808.20

= [10487.80 × 2] /808.20 = 25.95

31.3.2023

Annualized Return = Return from 1.7.2020 to 31.3.2023 / 2.75 year

73.52 = Return from 1.7.2020 to 31.3.2023 / 2.75 year

Return from 1.7.2020 to 31.3.2023 = 202.18%

It means the investment of ₹1,00,000 made on 1.7.2020 has grown to ₹3,02,180 on 31.3.2023.

NAV = 302180 / 11296.11 = 26.75

Illustration 4

Name of the Scheme	ABC
Size of the Scheme	₹100 lakhs
Face Value of the Share	₹10
Number of the outstanding shares	10 lakhs
Market value of the fund's investments Receivables	₹180 lakhs
Accrued Income	₹1 lakh
Receivables	₹1 lakh
Liabilities	₹50,000
Accrued expenses	₹50,000

Find NAV per unit?

Solution:

NAV per unit = (Investment + Receivables + Accrued Income – Liabilities – Accrued expenses)/No of units (mutual fund) = (180 lakhs + 1 lakh + 1 lakh – 0.50 lakh – 0.50 lakh)/10 lakhs = 18.1 lakhs.

Evaluation of Performance and Movements in Security Values and NAVs of Mutual Funds for Investment Decisions: Perspective of AUM Managers and Individual Investors

7.4

7.4.1 Methods for evaluating the performance of Mutual Fund

1) Sharpe Ratio:

(a) Nature: Sharpe Ratio is a composite measure to evaluate the performance of Mutual Funds by comparing the reward to risk ratio of different funds. This formula uses the volatility of portfolio return.

(b) Basis: The reward, i.e. portfolio return in excess of the average risk free rate of return, is divided by standard deviation. Since it considers standard deviation as a measure of risk, it takes into account both Systematic and Unsystematic Risk.

(c) Risk Premium: This measure indicates the risk premium return per unit of total risk. Excess return earned over the risk free return on portfolio to the portfolio's total risk measured by the standard deviation.

(d) Computation:

Sharpe Ratio = $(R_P - R_F) \div \sigma_P$

Where,

R_P = Return on Portfolio

R_F = Risk Free Return

σ_P = Standard Deviation of Portfolio

(e) Use: Sharpe Ratio is an appropriate measure of performance for an overall portfolio when it is compared with another portfolio. The result on its own cannot lead to any comparison. It has to be compared with returns from other portfolio for making any meaningful conclusion.

2) Treynor's Ratio:

(a) Nature: Treynor Ratio is a measure to evaluate the performance of mutual funds by comparing the reward to volatility ratio of different funds. Risk considered here is only Systematic Risk, and not Total Risk.

(b) Assumption: It assumes a completely diversified portfolio, i.e. that the investor would have eliminated all the unsystematic risk by holding a diversified portfolio.

(c) Basis: Excess return earned over the risk free return on portfolio to the portfolio's total risk measured by the Beta of Portfolio. The ratio expresses the portfolio's risk premium per unit of beta.

(d) Computation:

Treynor's Ratio = $(R_P - R_F) \div \beta_P$

Where, R_P = Return on Portfolio

R_F = Risk Free Return

β_P = Beta of Portfolio

(e) Use: It is appropriate only in case of comparison with completely diversified portfolio. As in the case of Sharpe Ratio, Treynor's measure cannot be used in an isolated manner. It should be compared with such results of other portfolio to draw conclusions.

3) Jensen's Alpha:

(a) Nature: It is an absolute measure of evaluating a fund's performance. It compares desired performance (based on benchmark portfolio) with actual performance.

(b) Benchmark Performance: Benchmark Performance is computed using Capital Asset Pricing Model (CAPM), i.e. by factoring the sensitivity of the portfolio return to that the Market Portfolio.

(c) Computation:

Jensen's Alpha [a] = Actual Return Less Return under CAPM

(d) Evaluation and Appropriateness:

- If Jensen's Alpha is positive, it reflects that the Mutual Fund has exceeded the expectations and outperformed the Market Portfolio and vice-versa.
- Alpha would give meaningful results only if its used to compare two portfolios of similar beta factors.
- It is used for measuring performance of a portfolio and to identify the part of the performance that can be attributed solely to the portfolio.
- This model considers only systematic risk and not the total risk.

Different kinds of expenditure incurred by a Mutual Fund and the way to treat them in computing the net asset value:

(A) Initial Issue Expenses: AMC incur some expenses when a scheme is launched. The benefits of these expenses accrue over many years. Therefore, they cannot be charged to any single year. SEBI permits amortization of initial expenses as follows —

i. Close End Scheme: Such schemes floated on a load basis, the initial issue expense shall be amortized on a weekly basis over the period of the scheme.

ii. Open Ended Scheme: Initial issue expenses may be amortized over a period not exceeding 5 years.

Issue expenses incurred during the life of an open end scheme cannot be amortized.

(B) Recurring Expenses: It includes the followings :-

(i) Marketing and selling expenses including Agent's Commission.	(i) Cost of fund transfers from location to location.
(ii) Brokerage and Transaction Costs.	(ii) Cost of providing accounts statements and dividend/redemption cheques and warrants.
(iii) Registrar Services for transfer of units sold or redeemed.	(iii) Insurance Premium paid by the Fund.
(iv) Audit Fees.	(iv) Winding up costs for terminating a fund or a scheme.
(v) Custodian Charges.	(v) Costs of Statutory Advertisements.
(vi) Costs related to investor communication.	(vi) Other costs as approved by SEBI.

(C) Total Expenses: Total Expenses of the scheme as charged by the AMC excluding issue or redemption expenses but including investment management and advisory fees, are subject to the following limits-

(i) On the first ₹100 Crores of the average weekly Net Assets - 1.5%

(ii) On the next ₹300 Crores of the average weekly Net Assets - 2.25%

(iii) On the next ₹300 Crores of the average weekly Net Assets - 2.0%

(iv) On the balance of the assets 1.75%

7.4.2 Value of Traded Securities and Non-Traded Securities of Mutual Fund

1) Traded Securities:

(a) Last Quoted Closing Price: Traded Securities should be valued at the last quoted closing price on the Stock Exchange.

(b) More than One Stock Exchange: If the securities are traded on more than one Stock Exchange then the valuation should be as per the last quoted closing price on the Stock Exchange where the security is principally traded.

(c) No Trading on Principal Stock Exchange: When on a particular valuation day, a security has not been traded on the selected Stock Exchange, the value at which it is traded on another Stock Exchange may be used.

2) Non-Traded Securities:

(a) Meaning: If a security is not traded on any Stock Exchange for a period of 60 days prior to the valuation date, the scrip must be valued as a non-trade scrip.

(b) Valuation: Non-Traded Scrips should be valued in good faith by the AMC on the basis of valuation methods approved by the AMC.

(c) General Principles in Valuation:

- **Equity Instruments:** Valued on the basis of capitalization of earnings solely or in combination with the Net Asset Value. Price Earning Ratios of comparable traded securities, with an appropriate discount for lower liquidity, should be used for the purpose of capitalization.

- **Debt Instruments:** Valued on YTM (Yield to Maturity) basis. Capitalization factor being determined for comparable traded securities with an appropriate discount for lower liquidity.
- **Government Securities:** Valued at YTM based on the prevailing market rate.
- **Money Market Instruments:** Valued at Cost Plus Accruals.
- **Convertible Debentures/Bonds:** Non-convertible component should be valued as a debt Instrument, and Convertibles as any Equity Instrument.

7.4.3 Computation of the Time Weighted and Rupee Weighted Rate of Return

1) Total Return (Investors' Perspective):

Total Return = Distributions + Capital Appreciation NAV at the beginning of the period

Where, Distributions = Dividend Distribution or Capital Distribution Capital Appreciation

= Closing NAV Less Opening NAV

2) Time Weighted Rate of Return (TWROR):

(a) It is the rate of return earned per rupee invested over a period of time. It eliminates the effect of additional cash flows and the return on such cash flows.

(b) It seeks to measure the rate of return earned per rupee invested in the fund over a period of time, had there been no withdrawals from or further investments to that rupee.

3) Rupee Weighted Rate of Return (RWROR):

(a) This method seeks to measure the internal rate of return based on absolute movements in cash with reference to the Mutual Fund. The Fund Value at the beginning of the year is equated to investment and the dividend distribution and the year end fund value are equated to cash flows received.

(b) **Factors:** Factors affecting the RWROR are —

- Beginning and ending market values.
- Timing of the net contributions to the fund.

Please see Module 10.1 for further discussion

Illustration 5

Chintamani Fund, a fund which invests exclusively in Public Sector Undertakings, yielded ₹3.75 per Unit for the year. The opening NAV was ₹21.20. Chintamani Fund has a risk factor of 3.50%.

Ascertain the Sharpe Ratio and evaluate the funds performance in juxtaposition with performance of the Sensex if —

(a) Risk Free Return is 5%, Return on Sensex is 15% with a standard deviation of 2.75%.

(b) Risk Free Return is 4%, Return on Sensex is 17% with a standard deviation of 3%.

(c) Risk Free Return is 7%, Return on Sensex is 18% with a standard deviation of 4%.

Solution:

1. Formula for Computing Sharpe Ratio.

   Sharpe Ratio = $(R_P - R_F) \div \sigma_p$

   Where, R_p = Return on portfolio

   R_F = Risk Free Return

   σ_p = Standard Deviation of Portfolio

Particulars	Case A	Case B	Case C
Risk Free Return [R_F]	5%	4%	7%
Market Return [R_M]	15%	17%	18%
Standard Deviation of Market Return [σ_M]	2.75%	3.00%	4.00%
Sharpe Ratio for Chintamani Fund [$(R_P-R_F) \div \sigma_p$] [A]	3.63 [(17.69% - 5%)÷ 3.50%]	3.91 [(17.69% -4%) ÷ 3.50%]	3.05 [(17.69% -7%) ÷ 3.50%]
Sharpe Ratio for Market Return [$(R_M- R_F)- \sigma_M$] [B]	3.64 [(15% - 5%) ÷ 2.75%]	4.33 [(17%-4%) ÷ 3%]	2.75 [(18% -7%) ÷ 4%]
Sharpe Ratio is Higher for	Market Return	Market Return	Chintamani Fund
Inference / Evaluation	Market has outperformed Chintamani Fund's performance.	Market has outperformed Chintamani Fund's performance.	Chintamani Fund has outperformed Market's performance.

Note: Return on Chintamani Fund = Yield ₹ 3.75 ÷ Opening NAV ₹ 21.20 = 17.69%.

Illustration 6

Four friends S, T, U, and V have invested equivalent amount of money in four different funds in tune with their attitude to risk, S prefers to play aggressive and is keen on equity-funds, T is moderately aggressive with a desire to invest upto 50% of his funds in Equity, whereas U does not invest anything beyond 20% in Equity. V, however, relies more on movement of market, and prefers any fund which replicates the market portfolio.

Their investment particulars, returns therefrom and Beta of the fund are given below —

Fund Invested	Return for the year	Beta Factor
Money Multiplier Fund (100% Equity)	23.50%	1.80
Balanced Growth Fund (50% Equity - 50% Debt)	16.50%	1.25
Safe Money Fund (20% Equity and 80% Debt Funds)	12.50%	0.60

If the Market Return was 16% and the Risk Free Return is measured at 7%, which of the four friends were rewarded better per unit of risk taken?

Solution:

Particulars	S	T	U	V
Risk Free Return [R_F]	7%	7%	7%	7%
Fund Invested	Money Multiplier Fund	Balanced Growth Fund	Safe Money Fund	Market Portfolio
Beta of the Portfolio [β_P]	1.80	1.25	0.60	1.00
Return on Portfolio [R_P]	23.50%	16.50%	12.50%	16.00%
Treynor Measure [$(R_P-R_F) \div \beta_P$]	9.17 [23.50–7] ÷1.80	7.60 [16.50–7] ÷ 1.25	9.17 [12.50–7] ÷ 0.60	9.00 [16–7] ÷ 1
Ranking	1	3	1	2

Evaluation: Both S and U have earned the same Reward per unit of risk taken, which is more than the Market Reward to Risk of 9.00.

Illustration 7

Following information is available regarding four mutual funds:

Mutual Fund	Return	Risk (σ)	β (Beta)	Risk free rate
P	13	16	0.90	10
Q	17	23	0.86	10
R	23	39	1.20	10
S	15	25	1.38	10

Evaluate performance of these mutual funds using Sharp Ratio and Treynor's Ratio. Comment on the evaluation after ranking the funds.

Solution:

Mutual Fund	Under Sharpe's Method [$(R_P-R_F) \div \sigma_P$]	Ranking	Under Treynor Method [$(R_P-R_F) \div \beta_P$]	Ranking
P	[(13-10) ÷ 16] = 0.19	4	[(13-10) ÷ 0.90] = 3.33	4
Q	[(17-10) ÷ 23] = 0.31	2	[(17-10) ÷ 0.86] = 8.14	2
R	[(23-10) ÷ 39] = 0.33	1	[(23-10) ÷ 1.20] = 10.83	1
S	[(15-10) ÷ 25] = 0.2	3	[(15-10) ÷ 1.38] = 3.63	3

Inference: Ranks obtained as per sharp Ratio as well as Treynor's Ratio is same. This indicates that all the mutual fund seem to be reasonably well diversified.

Illustration 8

The following particulars are furnished about three Mutual Fund Schemes, P, Q and R

Particulars	Scheme P	Scheme Q	Scheme R
Dividend Distributed	₹1.75	—	₹1.30
Capital Appreciation	₹2.97	₹3.53	₹1.99
Opening NAV	₹32.00	₹27.15	₹23.50
Beta	1.46	1.10	1.40

Ascertain the Alpha of the three schemes and evaluate their performance, if Government of India Bonds carry an interest rate of 6.84% and the NIFTY has increased by 12.13%.

Solution:

Particulars	Scheme P	Scheme Q	Scheme R
Dividend Distributed	₹1.75	-	₹1.30
Add: Capital Appreciation	₹2.97	₹3.53	₹1.99
Total Return [A]	₹4.72	₹3.53	₹3.29
Opening NAV [B]	₹32.00	₹27.15	₹23.50
Actual Return [A] ÷ [B] = [C]	14.75% [4.72 ÷32.00]	13.00% [3.53 ÷ 27.15]	14.00% [3.29 ÷ 23.50]
Beta [D]	1.46	1.10	1.40
Expected Return under CAPM [E(R_p)] [E] $R_F + \beta_p \times (R_M - R_F) = 6.84 + [D] \times (12.13 - 6.84)$	14.56% [6.84 + 1.46 × (12.13 – 6.84]	12.66% [6.84 + 1.10 × 12.13 – 6.84]	14.25% [6.84 + 1.40 × (12.13 – 6.84]
Jensen's Alpha (σ_p) [C] – [E] 0.19%	0.19% (14.75-14.56)	0.34% (13.00-12.66)	(0.25%) (14.00-14.25)
Ranking	2	1	3

ETF, REIT, InvIT

7.5

Exchange Traded Funds (ETF)

ETFs are mutual fund units that investors can buy or sell at the stock exchange. This is in contrast to a normal mutual fund unit that an investor buys or sells from the AMC (directly or through a distributor). In the ETF structure, the AMC does not deal directly with investors or distributors. Units are issued to a few designated large participants called Authorised Participants (APs). The APs provide buy and sell quotes for the ETFs on the stock exchange, which enable investors to buy and sell the ETFs at any given point of time when the stock markets are open for trading. ETFs therefore trade like stocks and experience price changes throughout the day as they are bought and sold. Buying and selling ETFs requires the investor to have dematted and trading accounts. Many investors implicitly assume that the price of exchange-traded funds (ETFs), vehicles that provide passive exposure to a basket of securities and real-time liquidity, stays extremely close to their net asset value (NAV).

Real Estate Investment Trusts (REIT)

Real Estate Investment Trusts (REITs) are investment vehicles that invest in the mortgage market. Although extensive research has been performed on traditional REITs, with a focus on the commercial real estate market, little research has been performed on the valuation of mortgage REITs, particularly agency mortgage REITs. Investment in REITS easier than investment in Real Estate properties. REITs stocks are listed in stock market; hence details will be available on public domain. REITs allow anyone to invest in portfolios of real estate assets the same way they invest in other industries – through the purchase of individual company stock or through a mutual fund or exchange traded fund (ETF). Direct investment in real estate property is very capital intensive. Capital appreciation can be phenomenal.REITs generate income in form of dividend. REITs dividend payment is relatively assured as most of their income is in the form of rental (lease) income. Dividend earned by the investors of REIT will be tax free.

Infrastructure Investment Trusts (InvIT)

An InvIT is established as a trust and is registered with the SEBI. They are required to be registered with SEBI as debenture trustees. Also, they are required to invest at least 80% into infra assets that generate steady revenue. An infrastructure investment trust, simply put, is a pooled investment vehicle like a mutual fund. While mutual funds invest the sum received in financial securities, an InvIT invests the same in real infrastructure assets like roads, power plants, transmission lines, pipelines etc. InvIT is a business trust (like REIT), registered with the market regulator, that owns, operates, and manages operational infrastructure assets. These long-term revenue-generating infrastructure assets, in turn generate cash flows, which are then distributed to the unit holders periodically. InvITs

are a hybrid between equity and debt investment, i.e., it has features of both equity and debt. While the operating business model helps provide stable, predictable, and relatively low-risk cash flows like debt, there is growth potential like equity as the returns are not fixed with a scope of change in the unit price. As a body corporate of LLP, an investment manager supervises all the operational activities surrounding InvITs.

7.5.1 Exchange Traded Funds (ETF)

Features of ETFs: ETFs offer a number of unique characteristics including the following.

a) **Dynamic Pricing:** Though in terms of generic nature, ETFs resemble mutual funds, they are traded intra-day in stock exchanges just like shares and hence are continuously priced.

b) **Similar to Derivatives:** Similar to derivatives, ETFs track a given underlying (share, bond, metal or any index). As a result their value fluctuates with the fluctuations in the price of the underlying. For example, Gold ETFs have physical gold as their underlying. Hence the price and NAV of Gold ETFs fluctuate with the price of physical gold.

c) **High Transparency:** Since ETFs are designed to replicate the performance of their underlying, investors are least assured about the composition of their portfolios. Additionally, due to efficient disclosure practices adopted by them, it is possible to access information such as expense ratio, portfolio holding etc. frequently.

d) **Tax Efficiency:** ETFs are mostly passively managed and hence are characterized by lower turnover and less realized capital gains. Since these capital gains are actually shared by the investors, ETFs offer greater tax efficiency.

e) **Low Cost:** Due to its passive management style, ETFs pay lower management and administrative fees as compared to traditional actively managed mutual funds. Lower cost positively affects the returns of ETFs.

f) **High Liquidity:** ETFs are highly liquid as the shares are traded on a real time basis. Hence investors can easily sell their holding and realize their investment at an efficient price. In case of traditional mutual funds redemption requests are processed only at the closing NAV.

g) **Diversification and Precision:** Through index ETFs investors can invest in multiple securities and can enjoy better diversification. In case of other ETFs which invest in a particular asset class the precision is really appreciable.

Advantages and Disadvantages of Exchange Traded Funds versus Mutual Funds

Advantages of an ETF over a Mutual Fund:

(a) ETF are continuously traded and can be sold or purchased on margin.

(b) There are no capital gains tax triggers when an ETF is sold (shares are just sold from one investor to another).

(c) Investors buy from brokers; thus eliminating the cost of direct marketing to individual small investors. This implies lower management fees.

Disadvantages of an ETF over a Mutual Fund:

(a) Prices can depart from NAV (unlike an open-end fund).

(b) There is a broker fee when buying and selling (unlike a no-load fund).

7.5.2 Real Estate Investment Trust (REIT)

A Real Estate Investment Trust is a corporation or a business trust that combines the capital of many investors to acquire (or provide financing for) various real estate assets. Investors are able to invest in a professionally managed portfolio of real estate assets. The structure also qualifies as a pass-through entity and distributes maximum portion of its earnings as dividends to shareholders. One of the major advantages of this investment is its liquidity as compared to traditional direct investment and through private equity route, which offer low liquidity on investment. The primary reason for the liquid nature of REITs is that they are traded in major exchanges as any ordinary share of a company. It provides the advantage of portfolio diversification and long-term capital appreciation.

REIT's were first introduced by SEBI in 2007 and are monitored and regulated by the SEBI to ensure adherence to industry practices and safeguard the interest of the investors.

(a) It must be structured either as a corporation, a business trust or similar association.

(b) A board of Directors or trustees must manage it.

(c) Shares are fully transferable.

(d) Minimum number of shareholders should be 100 and five or less members should not hold more than 50 per cent of the shares.

(e) 90% of the income must be distributed as a dividend.

(f) 80% of the investment must be in properties that generate revenue.

(g) Only 10% of the total investment must be in real-estate under construction.

(h) Derive at least 75 per cent of gross income from rents or mortgage interest.

(i) Have no more than 20% of its assets in stock in taxable REIT subsidiaries.

(j) The company must have an asset base of ₹500 crore.

(k) NAVs need to be update twice in each financial year.

Working of REIT

(a) REIT industry boasts of a diverse profile that offers investors a chance to make investments in real-estate related funds. REIT could be classified as **Equity REIT** and **Mortgage REIT**.

(b) Equity REIT hold in their vicinity properties such as offers, hotels, shopping centers, condominiums and draw most of their revenues from the rent of these properties.

(c) Mortgage REIT looks over the financing of the properties that may be residential or commercial in nature, thereby drawing income from interest earned on the investment in mortgages or mortgage-backed securities.

Types of REITs

(a) **Equity REITs:** They are the owners of the real estate properties and lease it to companies or individuals to make money. The income is then distributed among the REIT investors as a dividend.

(b) **Mortgage REITs:** They are not the owners but get EMIs against the property from the owners and builders. The earnings are via net interest margin (difference of interest earned on mortgage and cost of funding the loan) which they distribute among the REIT investors as a dividend.

(c) **Hybrid REITs:** Invest in both equity and mortgage REITs.

Difference Between REIT and Real Estate Mutual Fund

REITs and real estate mutual funds are different but they are similar as they both offer liquidity and a cheap way to get exposure to diversified and large capital real estate assets. Long-term investors have the potential to reap the rewards of dividend income and capital appreciation over a long period of time.

For retail or short-term investors with a low investible surplus, these real estate funds create an opportunity to invest in properties that otherwise may not be feasible to invest in. A real estate fund can invest in a real estate investment trust to offer benefits to investors, making REIT a part of the investment.

(a) Real estate mutual funds offer wider diversification than the REITs based on the investment strategy and have the benefits of experts and professionals managing their portfolio, unlike the REITs.

(b) REITs distribute a higher amount of dividend each year to its shareholders or investors than REMFs.

(c) In case of continuous inflationary trend, the return to the REIT, investor will be better than REMF investors.

(d) REIT or REMF investment should be spread across several real estate categories or funds so as to minimize the risk and it should not be more than 10% of the portfolio.

The RBI's proposal to allow banks to invest in REITs will propel a lot of companies to bring in their REITs and get it listed on the exchange. REITs are governed by SEBI and thus are looked as a sure measure by the GoI to pool in greater investments in India's realty sector. Once the REITs are up and ready for the investment we can hope to see an increase in the retail sector participation.

7.5.3 Infrastructure Investment Trusts (InvIT)

InvITs (Infrastructure Investment Trust)

Infrastructure investment trusts are investment instruments that work like mutual funds and are regulated by the Securities and Exchange Board of India. Abbreviated as InvITs, their units are listed on different trading platforms like stock exchanges and are a wholesome combination of both equity and debt instruments.

The primary objective of InvITs is to promote the infrastructure sector of India by encouraging more individuals to invest in it and can be modified according to a given situation. Typically, such a tool is designed to pool money from several investors to be invested in income-generating assets. The cash flow thus generated is distributed among investors as dividend income. When compared to Real Estate Investment Trust or REITs, the structure and operation of both are quite similar.

Structure of InvITs in India

An InvIT is established as a trust and is registered with the SEBI. Typically, infrastructure investment trust SEBI comprises 4 elements, namely –

- **Trustee:** They are required to be registered with SEBI as debenture trustees. Also, they are required to invest at least 80% into infra assets that generate steady revenue.
- **Sponsor:** Typically, a body corporate, LLP, promoter or a company with a net worth of at least ₹ 100 crore classifies as a sponsor. Further, they must hold at least 15% of the total InvITs with a minimum lock-in period of 3 years or as notified by any regulatory requirement. When it comes to a public-private partnership or PPP projects, sponsors serve as a Special Purpose Vehicle (SPV).
- **Investment manager:** As a body corporate of LLP, an investment manager supervises all the operational activities surrounding InvITs.

- **Project manager:** The authority is mostly responsible for executing projects. However, in the case of PPP projects, it serves as an entity that also supervises ancillary responsibilities.

The table below highlights the structure of infrastructure investment trust.

Elements	Role
Trustee	Invest a minimum of 80% in infra assets.
Sponsor/s	Holds 15% of the total InvITs.
Investment manager	Manages investment and supervises operational activities concerning InvIT.
Project manager	Executes projects.

Purpose of InvITs

The purpose of InvITs is to enable Infrastructure Companies to repay their debt obligation quickly and effectively. Since infrastructure-oriented projects tend to take time to generate substantial cash flow, InvITs come in handy for paying off loan interests and other expenses conveniently.

Advantages of InvITs

Though InvITs were regarded as one of the most expensive investment avenues previously, they tend to offer several benefits to investors.

The following highlights the most prominent benefits of infrastructure trusts in general.

- **Diversification**

  InvITs with multiple assets offer individuals an opportunity to diversify their investment portfolio. Such a feature directly helps lower associated risks and further allows investors to generate steady returns in the long run.

- **Accrues fixed income**

  The option to redistribute risks and accrue a fixed income serves as a potent alternative for generating fixed income, especially for retirees. Also, including such an investment tool would help those who intend to plan retirement effectively.

- **Liquidity**

  Generally, it is easy to enter or exit from infrastructure investment trust, which directly enhances their liquidity aspect. However, small investors may find it challenging to sell a high-valued property quickly.

- **Quality asset management**

  InvITs offers investors the opportunity to get their assets managed professionally. It not only ensures effective management and allocation of resources but also helps to prevent fragmentation of holdings.

  Nevertheless, the pointers below help to understand how different elements tend to benefit by investing in an infrastructure investment trust.

- **Investors**

  Parking funds into this investment option allows investors to generate fixed returns on the same. For instance, an infrastructure investment trust has to distribute 90% of its total net cash flow to its investors. It means that investors can generate steady earnings throughout the course of investment.

  Additionally, investors also receive dividend income on their investment in case the InvITs have surplus cash flow.

- **Promoters**

  By investing in InvITs, promoters would be able to lower their debt burden significantly via an asset sale. Further, promoters can use the proceeds to reinvest in other portfolio projects.

Disadvantages of InvITs

Although investors can benefit in several ways by parking their funds in InvITs, they are exposed to certain drawbacks as well. Consequently, to make the most of such an investing option, individuals should weigh the pros and cons beforehand to streamline the process effectively.

For instance, the following highlights the significant drawbacks of this investment tool.

- **Regulatory risk**

  Even the slightest change in the regulatory framework like taxation or policies concerning the infrastructure sector would have a ripple effect on InvITs.

- **Inflation risk**

  A high rate of inflation has a significant impact on the performance of infrastructure investment trusts. For instance, inflation may increase the sector's operating cost. Further, an increase in the toll rates would lower the prospect of generating substantial returns.

- **Asset risk**

  Typically, investment in infrastructure has a long gestation period, and hence the process of generating returns is often delayed. Such a delay not only takes a toll on the cash flow but further hampers profit projections.

Additional Illustrations

1. Mr. Shyam invested in a mutual fund when the NAV was ₹12.65 per unit. 60 days later the asset value per unit of the fund was ₹12.25. In the meantime, Shyam had received a cash dividend of ₹0.50 and a capital gain distribution of ₹0.30. Compute the monthly return.

   Solution:

   [Divided + Capital gain distribution + Capital appreciation] / Opening NAV

   = (0.50 + 0.30 – 0.40)/12.65 = 3.16%

   Annualized return = (Return × 365)/60 days = 19.22% p.a.

   Monthly return = 19.22/12 or 1.60% p.m.

2. Mr. Sharma can earn a return of 16% by investing in equity shares of his own. Now he is considering a recently announced equity-based mutual fund scheme in which initial expenses are 5.7 percent and annual recurring expenses are 1.7 percent. How much should the mutual fund earn to provide Mr. Sharma a return of 16 percent?

   Solution:

   Let the return on mutual fund be ₹X.

   Investor's expectation denotes the return from the amount invested.

   $$\text{Returns from mutual funds} = \frac{\text{Investor's expectations}}{100 - \text{Issue expectations}} + \text{Annual recuring expenses}$$

   $$X = \frac{16}{1 - 0.057} + 1.7 \qquad = 16.96 + 1.7 \qquad = 18.67\%$$

   The Mutual Fund should earn so as to provide a return of 16% = 18.67%.

3. You have purchased 2000 shares of India Hope Fund which had a net asset value of ₹10.00 per unit at the beginning of the year. The fund deducted a front-end load of 5%. The securities in the fund increased in value by 10% during the year. The fund's expense ratio is 1.1%. What is your rate of return on the fund if you sell your shares at the end of the year?

Solution:

Initial investment = (₹10×2000)/0.95 = ₹21052.63.

The ending value of the shares includes the increase of 10% minus the expense ratio of 1.1%

Ending value = ₹20,000 × (1.10-0.011) = ₹21,780.

The returns are equals to:

(Ending value – Beginning value) – 1 = (₹21780.00/21052.63) –1 = 3.46%

4. You are considering an investment of ₹5,000 in a mutual fund with a 6% load and an annual expense ratio of 0.8%. You plan to invest for five years. Assume the portfolio rate of return net of operating expenses is 10% annually. What is the value of portfolio after five years?

Solution:

Investment of ₹5,000 with a 6% front-end load comes to ₹5,000×(1–0.06) = ₹4,700

The net annual return is (10.00%-0.80%) = 9.20%

The future value equals to ₹4,700×$(1.092)^5$ = ₹7,298.12 (4700×1.5528)

5. (a) An open-end fund has a net asset value of ₹10.80 per unit. It is sold with a front load of 6%. What is the offering price?

(b) If the offering price of an open-end fund is ₹12.50 per unit and the fund is sold with a front load of 5%, what is the net asset value?

Solution:

(a) Offering price = $\frac{\text{NAV}}{1-\text{Load / Expenses}} = \frac{₹10.80}{1-0.06} = ₹11.49$

(b) NAV = Offering × (1–Load) = ₹12.50 × (1–0.05) = ₹11.88

6. (a) The composition of Good hope fund portfolio is as follows:

Stock	Shares	Price/Unit (₹)
P	2,00,000	35
Q	3,00,000	40
R	4,00,000	20
S	6,00,000	25

The fund has not borrowed any funds, but its accrued management fee with the portfolio manager currently totals ₹30,000. There are 4 million units outstanding. What is the net asset value of the fund?

(b) If during the year the portfolio manager sells all of the holdings of stock S and replaces it with 2,00,000 shares of stock T at ₹50 per share and 2,00,000 shares of stock U at ₹25 per share, what is the portfolio turnover rate?

Solution:

(a)

Stock	Value of Stock held by Fund (₹)
P	70,00,000
Q	1,20,00,000
R	80,00,000
S	1,50,00,000
Total	4,20,00,000

$$\text{Net asset value} = \frac{4,20,00,000 - 30,000}{40,00,000} = ₹10.49$$

(b) Value of stock replaced

(i) S – 2,00,000 shares @ ₹50 per share = ₹1,00,00,000

(ii) U - 2,00,000 shares @ ₹25 per share = ₹ 50,00,000

1,50,00,000

$$\text{Turnover rate} = \frac{1,50,00,000}{4,20,00,000} = 0.3571 \text{ or } 35.71\%$$

7. Closed-end fund of 'X' has a portfolio currently worth ₹200 million. It has liabilities of ₹3 million and 5 million shares outstanding.

(a) What is the NAV of the fund?

(b) If the fund sales for ₹36 per unit, what is the premium or discount as a percent of net asset value?

Solution:

(a) $\text{NAV} = \frac{₹2,00,000,000 - 30,00,000}{50,00,000} = ₹39.40$

(b) $\text{Premium (or discount)} = \frac{\text{Price} - \text{NAV}}{\text{NAV}} = \frac{36 - 39.40}{39.40} = -8.63\%$

The fund sells at a 8.63% discount from NAV

8. (a) A mutual fund started the year with a net asset value of ₹12.50 per unit. By year end, its NAV equals ₹12.10 per unit. The fund paid year-end distributions of income and capital gains of ₹1.50 per unit. What was the pre-tax rate of return to an investor in the fund?

(b) A closed-end fund starts the year with a net asset value of ₹12.50. By year-end, NAV equals ₹12.10. At the beginning of the year, the fund was selling at a 2% premium to NAV. By the end of the year, the fund is selling at a 7% discount to NAV. The fund paid year-end distributions of income and a capital gain of ₹1.50.

(i) What is the rate of return to an investor in the fund during the year?

(ii) What would have been the rate of return to an investor who held the same securities as the fund manager during the year?

Solution:

(a) $$\frac{(NAV_1 - NAV_0) + \text{Distributions}}{NAV_0} = \frac{(₹12.10 - ₹12.50) + ₹1.50}{₹12.50} = 0.088 \text{ or } 8.8\%$$

(b) Start of the year price: $P_0 = ₹12.00 \times 1.02 = ₹12.24$

(i) End of year price $P_1 = ₹12.10 \times 0.93 = ₹11.25$

Although NAV increased by ₹0.10, the price of the fund decreased by ₹0.99

$$\text{Rate of return} = \frac{(P_1 - P_0) + \text{Distributions}}{P_0} = \frac{₹11.25 - ₹12.24 + ₹1.50}{₹12.24} = 0.042 \text{ or } 4.20\%$$

(ii) An investor holding the same security as the fund manager would have earned a rate of return based on the increase in the NAV of the portfolio:

$$\frac{(NAV_1 - NAV_0) + \text{Distributions}}{NAV_0} = \frac{₹12.10 - ₹12.00 + ₹1.50}{₹12.00} = 13.33\%$$

9. Mr. Rakash Yadav has invested in three mutual fund schemes as given below:

Particulars	Scheme A	Scheme B	Scheme C
Date of investment	1-4-2023	1-5-2023	1-7-2023
Amount of investment	12,00,000	4,00,000	2,50,000
Net asset value (NAV) at entry date	10.25	10.15	10.00
Dividend declared up to 31-7-2023	23,000	6,000	NIL
NAV as at 31-7-2023 (₹)	10.20	10.25	9.90

You are required to calculate the effective yield on per annum basis in respect of each of the three schemes to Mr. Rakash Yadav up to 31-7-2023.

Solution:

Schemes	Investment (₹)	Unit Numbers (Investment/NAV at Entry Date)	Unit NAV 31/7/2023 (₹)	Total NAV 31/7/2023 (Unit Numbers × Unit NAV as on 31/7/2023 (₹)
MF A	12,00,000	1,17,073.17	10.20	11,94,146.33
MF B	4,00,000	39,408.87	10.25	4,03,940.92
MF C	2,50,000	25,000.00	9.90	2,47,500.00

Schemes	NAV (+)/(-) (NAV as on 31/7/2023 – Investment	Dividend Received	Total Yield Change in NAV + Dividend	Number of Days	Effective Yield (% p.a.) (Total Yield/Investment) × (365/No. of Days) × 100
MF A	(-) 5,853.67	23,000	17,146.33	122	4.275%
MF B	(+) 3,940.92	6,000	9,940.92	92	9.86%
MF C	(-) 2,500.00	NIL	(-) 2500.00	31	-11.77%

10. On 01-07-2020, Mr. X invested ₹50,000 at an initial offer in mutual funds at a face value of ₹10 each per unit. On 31-3-2021, a dividend was paid @ 10% and the annualized yield was 120%. On 31-3-2022, 20% dividend and capital gain of ₹0.60 per unit was given. Mr. X redeemed all his 6271.98 units when his annualized yield was 71.50% over the period of holding. Calculate NAV as on 31-3-2021, 31-3-2022 and 31-3-2023.

Solution:

Yield for 9 months (120% × 9/12) = 90%

Market value of investments as on 31-3-2021 = ₹50,000 + (50000×90%) = ₹95,000

Therefore, NAV as on 31/3/2021 = (₹95,000 –₹5,000)/5,000 =₹18.00

Since dividend was reinvested by Mr. X, additional units acquired = $\frac{₹\,5,000}{₹\,18}$ = 277.78 units.

Therefore, number of units as on 31-3-2021 = 5000 + 277.78 = 5277.78

Alternatively, (₹95,000/₹18) = 5277.78 units

Dividend as on 31-3-2022 = 5277.78 × ₹10 × 0.2 = ₹10,555.56

Let X be the NAV as on 31-3-2022, then number of new units reinvested will be ₹10,555.56/X.

Accordingly, 6271.98 units shall consist of reinvested units of 5277.78 (as on 31-3-2021).

Thus, by way of equation it can be shown as follows:

$$6271.98 = \frac{₹\,10,555.56}{X} + 5277.78$$

or X = ₹10,555.56/(6271.98-5277.78) = ₹10.62

NAV as on 31-3-2023 = ₹50,000 (0.715×33/12)/6271.98 = ₹15.68

11. There are two mutual funds viz. X mutual fund and Y mutual fund. Each having closed-ended equity schemes. NAV as on 31-12-2023 of equity schemes of X mutual fund is ₹70.71 (consisting 99% equity and remaining cash balance) and that of Y mutual fund is ₹62.50 (consisting 96% equity and balance in cash).

Following is the other information:

Particulars	Equity Schemes	
	X Mutual Fund	Y Mutual Fund
Sharpe ratio	2	3.3
Treynor ratio	15	15
Standard deviation	11.25	5

There is no change in portfolios during the next months and annual average cost is ₹3 per unit for the schemes of both the mutual funds. For calculation, consider 12 months in a year and ignore number of days for particular month. Calculate NAV after one month if the market goes down by 5%.

Solution:

Working Notes:

(i) Decomposition of funds in equity and cash components

	Mutual Fund X	Mutual Fund Y
NAV on 21/12/23 (₹)	70.71	62.50
(%) of Equity	99%	96%
Equity element in NAV	₹70.00	₹60.00
Cash element in NAV	₹0.71	₹2.50

(ii) Calculation of Beta

(a) 'X' mutual fund

$$\text{Sharpe ratio} = 2 = \frac{E(R) - R_f}{\sigma_x} = \frac{ER - R_f}{11.25}$$

or $E(R) - R_f = 22.50$

$$\text{Treynor ratio} = 15 = \frac{E(R) - R_f}{\beta_x}$$ or $15\beta_x = 22.50 \Rightarrow \beta_x = 22.50/15$ or 1.50

(b) 'Y' mutual fund

$$\text{Sharpe ratio} = 3.3 = \frac{E(R) - R_f}{\sigma_y} = \frac{E(R) - R_f}{5}$$ or $E(R) - R_f = 16.50$

$$\text{Treynor ratio} = 15 = \frac{E(R) - R_f}{\beta_y} = \frac{16.50}{\beta_y}$$ or $\beta_y = \frac{16.50}{15} = 1.1$

(iii) Decrease in the value of equity

	Mutual Fund X	Mutual Fund Y
Market goes down by	5.00%	5.00%
Beta	1.50	1.10
Equity component goes down	7.50%	5.50%

(iv) Balance of cash after 1 month

	Mutual Fund X	Mutual Fund Y
Cash in hand on 31-12-23	₹0.71	₹2.50
Less: expenses per month	₹0.25	₹0.25
Balance after 1 month	0.46	₹2.25

NAV after 1 month

	Mutual Fund X	Mutual Fund Y
Value of equity after 1 month		
70×(1-0.075)	₹64.75	--
60×(1-0.055)	--	₹56.70
Cash balance	0.46	2.25
Balance after 1 month	65.21	58.95

12. Mr. Z has invested in the three mutual funds as per the following details:

	MF 'X'	MF 'Y'	MF 'Z'
Amount of investment (₹)	2,00,000	4,00,000	2,00,000
Net assets value (NAV) at the time of purchase (₹)	10.30	10.10	10.00
Dividend received upto 31/03/2023 (₹)	6,000	NIL	5,000
NAV as on 31/03/2023 (₹)	10.25	10.00	10.20
Effective yield p.a. as on 31/03/2023	9.66	-11.66	24.15

Assume 1 year = 365 days

Mr. Z has misplaced the documents of his investment. Help him in finding the date of his original investment after ascertaining the following:

(i) Number of units in each scheme

(ii) Total net present value

(iii) Total yield

(iv) Number of days of investment held

Solution:

(i) Number of units in each scheme

MF 'X' _____ $\frac{₹\,2,00,000}{₹\,10.30} = 19,417.48$

MF 'Y' _____ $\frac{₹\,4,00,000}{₹\,10.10} = 39,603.96$

MF 'Z' _____ $\frac{₹\,2,00,000}{₹\,10.00} = 20,000.00$

(ii) Total NAV as on 31/3/2023

MF 'X'	19,417.48 × ₹10.25	=	₹1,99,029.17
MF 'Y'	39,603.96 × ₹10.00	=	₹3,96,039.60
MF 'Z'	20,000 × ₹10.20	=	₹2,04,000.00
			₹7,99,068.77

(iii) Total yield

Name of Mutual Funds	Capital Yield	Dividend Yield	Total
MF 'X'	₹1,99,029.17 - ₹2,00,000 = - ₹970.83	₹6,000	₹5,029.17
MF 'Y'	₹3,96,039.60 - ₹4,00,000 = - ₹3,960.40	NIL	-3,960.40
MF 'Z'	₹2,04,000 - ₹2,00,000 = ₹4,000	₹5,000	₹9,000.00
		Total	10,068.77

$$\text{Total yield} = \frac{₹\,10068.77}{₹\,8,00,000} \times 100 = 1.2586\%$$

(iv) No. of days investment was held

	MF 'X'	MF 'Y'	MF 'Z'
Let number of days be	X	Y	Z
Initial Investment	2,00,000	4,00,000	2,00,000
Yield (₹)	5029.17	-3960.40	9,000
Yield (%)	2.5146	-0.9901	4.5
Period of holding (Days)	(2.5146 ÷ 9.66) × 365 = 95 days	[(-0.9901) ÷ (-11.66)] × 365 = 31 days	(4.5 ÷ 24.15) × 365 = 68 days
Date of Original Investment	26.12.22	28.02.23	22.01.23

13. Consider the recent performance of the closed fund, a closed-end fund devoted to finding underdeveloped, thinly traded stocks:

Period	NAV (₹)	Premium/Discount (%)
0	10.00	0.0
1	11.25	-5.0
2	9.85	+2.3
3	10.50	-3.2
4	12.30	-7.0

a. Calculate the average return per period for an investor who bought 100 shares of the closed fund at the invitation and then sold her position at the end of period 4.

b. What was the average periodic growth rate in NAV over that same period?

c. Calculate the periodic return for another investor who bought 100 shares of closed fund at the end of period 1 and sold his position at the end of period 2.

d. What was the periodic growth rate in NAV between periods 1 and 2?

Solution:

Period	NAV (₹)	Premium/Discount (%)	Price	Annual Rating
0	10.00	0.0	10.00	---
1	11.25	-5.0	10.69	6.97
2	9.85	+2.3	10.08	-5.7
3	10.50	-3.2	10.16	0.8
4	12.30	-7.0	11.44	12.6

a. Using the above data, the arithmetic average return per year is 3.65%. On an annual compound (geometric average) basis, the average annual return is 3.42%. This later answer is the same as if the annual return is computed using only the end points, shares were worth ₹11.44 at the end of year 4 and were purchased for ₹10.00, giving a compounded return of $(₹11.44/₹10.00)^{0.25} - 1 = 3.42\%$

b. $(₹12.30/10)^{0.25} - 1 = 5.31\%$

c. Ignoring commission, shares were purchased ₹10.69 and sold at ₹10.08, a return of –5.7%

d. Change in NAV is ₹1.40 (₹9.85–11.25); the percentage change is ₹1.40/₹11.25 = –12.44%

14. A mutual fund having 300 units has shown its NAV of ₹8.75 and ₹9.45 at the beginning and the end of the year respectively. The Mutual fund has given two options to the investors:

(i) Get dividend of ₹0.75 per unit and capital gain of ₹0.60 per unit, or

(ii) These distributions are to be reinvested at an average NAV of ₹8.65 per unit.

What difference would it make in terms of returns available and which option is preferable by the investors?

Solution:

Option 1: When Dividend and Capital Gain are paid:

Calculation of monthly return on the mutual funds:

$$r = \frac{(NAV_1 - NAV_0) + \text{Distribution}}{NAV_0}$$

$$= \frac{(₹9.45 - ₹8.75) + (₹0.75 + ₹0.60)}{8.75}$$

$$= \frac{0.70 + 1.35}{8.75}$$

$$= 23.43\%$$

Option 2: When Dividend and Capital gain are reinvested:

If all dividends and capital gain reinvested into additional units are ₹8.65 per unit the position would be.

Total amount reinvested	= ₹1.35 × 300	= ₹405
Additional units added	$= \frac{₹405}{8.65}$	= 46.82 units or 47 units
Value of units at the end	= 346.82 units × ₹9.45	= ₹3,277.45
Or	= 347 units × ₹9.45	= ₹3,279.15

Price paid for 300 units as the beginning = (300 × 8.75) = ₹2,625

Return = (₹3,277.45 – ₹2,625) / ₹2,625 = 24.86%

Or Return = (₹3,279.15 - ₹2,625)/(₹2,625) = (₹654.15)/(₹2,625) = 24.92%

From the above, it can be said the reinvestment option is better.

15. Orange purchased 200 units of Oxygen Mutual fund at ₹45 per unit of 31st December 2022. In 2023, he received ₹1.00 as dividend per unit and a capital gains distribution of ₹2 per unit. Required:

(i) Calculate the return for the period of one year assuming that the NAV as on 31st December 2023 was ₹48 per unit

(ii) Calculate the return for the period of one year assuming that the NAV as on 31st December 2023 was ₹48 per unit and all dividends and capital gains distributions have been reinvested at an average price of ₹46.00 per unit.

Ignore Taxation.

Solution:

(i) Returns for the year (All changes on a Per-Unit Basis)

Change in price:	₹48 – ₹45 =	₹3.00
Dividends received:		₹1.00
Capital gains distribution		₹2.00
Total return		₹6.00
Holding period return:	(₹6.00 / ₹45)×100 = 13.33%	

(ii) When all dividends and capital gains distributions are re-invested into additional units of the fund @(₹46/ unit)

Dividend + Capital gains per unit	= ₹1.00 + ₹2.00 = ₹3.00
Total received from 200 units	= ₹3.00 × 200 = ₹600/-
Additional units acquired	₹600/₹46 = 13.04 Units
Total No. of Units	200 units + 13.04 units = 213.04 units
Value of 213.04 units held at the end of the year	= 213.04 units × ₹48 = ₹10225.92
Price paid for 200 units at the beginning of the year	= 200 units × ₹45 = ₹9,000.00
Holding Period Return ₹(10,225.92 – 9,000.00)	= ₹1,225.92
Holding Period Return	₹1,225 / ₹9,000 × 100 = 13.62%

16. During the year 2023 an investor invested in a mutual fund. The capital gain and dividend for the year was ₹3.00 per unit, which were re-invested at the year end NAV of ₹23.75. The investor had total units of 26,750 as at the end of the year. The NAV had appreciated by 18.75% during the year and there was an entry load of ₹0.05 at the time when the investment was made. The investor lost his records and wants to find out the amount of investment made and the entry load in the mutual fund.

Solution:

NAV in the Beginning of year = $\frac{₹23.75}{118.75} \times 100 = ₹20$

No. of Units after Bonus issue = 26,750

Let x be the No. of Units acquired then

$26{,}750 = x + \frac{x \times 3}{23.75}$

or, x = 23,750 units

Investment Amount = 23,750 units (₹20 + ₹0.05) = ₹4,76,187.50

Entry load = ₹1,187.50 i.e. (23750 × 0.05)

17. Mr. A has invested in three Mutual Fund (MF) schemes as per the details given below:

Particulars	MF 'A'	MF 'B'	MF 'C'
Date of Investment	01/11/2022	01/02/2023	01/03/2023
Amount of investment (₹)	1,00,000	2,00,000	2,00,000
Net Asset Value (NAV) at entry date (₹)	10.30	10.00	10.10
Dividend Received upto 31-3-2023 (₹)	2,850	4,500	NIL
NAV as on 31-3-2023 (₹)	10.25	10.15	10.00

Assume 1 year = 365 days

Show the amount of rupees upto two decimal points

You are required to find out the effective yield (upto three decimal points) on per annum basis in respect of each of the above three Mutual Fund (MF) schemes upto 31-3-2023.

Solution:

Particulars	MF 'A'	MF 'B'	MF 'C'
(a) Investments	₹1,00,000	₹2,00,000	₹2,00,000
(b) Opening NAV	₹10.30	₹10.00	₹10.10
(c) No. of units (a/b)	9,708.74	20,000	19,801.98
(d) Unit NAV ON 31-3-2023	₹10.25	₹10.15	₹10.00
(e) Total NAV on 31-3-2023 (c×d)	₹99,514.59	₹2,03,000	₹1,98,019.86
(f) Increase / Decrease of NAV (a-e)	(₹485.41)	₹3,000	(₹1,980.20)
(g) Dividend Received	₹2,850	₹4,500	Nil
(h) Total Yield (f+g)	₹2,364.59	₹7,500	(₹1980.20)
(i) Number of Days	152	60	31
(j) Effective yield p.a. (h/a × 365 /i × 100)	5.678%	22.813%	(-) 11.657%

Solved Case Studies

1. Summer Mutual Fund sponsored open-ended equity-oriented fund.

There were three plans size 'S', dividend reinvestment plan; 'T', bonus plan and 'U', growth plan.

At the time of initial public offer on 1-4-2013, Mr. Sachin, Mr. Sourav and Mr. Rahul, three investors invested ₹1,00,000 each and chosen 'T', 'U' and 'S' plans, respectively.

The history of the fund is as follows:

	Dividend (%)	Bonus Ratio	Net Asset Value Per Unit (FV = ₹10)		
			Plan S	Plan T	Plan U
28-07-2017	20	--	30.70	31.40	33.42
31-03-2018	70	5:4	58.42	31.05	70.05
31-10-2021	40	--	42.18	25.02	56.15
15-03-2022	25	--	46.45	29.10	64.28
31-03-2022	--	1:3	42.18	20.05	60.12
24-03-2023	40	1:4	48.10	19.95	72.40
31-07-2023	--	--	53.75	22.98	82.07

[Ignore Education Cess]

On 31st July, 2023, all three investors redeemed all the balance units. Calculate the annual rate of return to each of the investors consider:

(i) Long-term capital gain is exempt from income tax.

(ii) Short-term capital gain is subject to income tax @ 10%.

(ii) Security transaction tax is 0.2 percent only on sale/redemption of units.

Solution:

Return from plan 'S' – dividend reinvestment for Rahul.

Under dividend reinvestment plan, the amount of dividend is reinvested in the business at the prevailing rate.

(a) Statement of units, value and return on investment

Date	Dividend (%)	Investment (₹)	Rate (₹)	Units	Commutative Units	Value (₹)
(1)	(2)	(3) = Div × Cum. Units	(4)	(5) = (3)/(4)	(6)	(7) = 6×₹10
01-04-2013	Initial offer	1,00,000	10.00	10,000.00	10,000.00	1,00,000
28-07-2017	0.20	20,000 (2×10,000)	30.70	651.47	10,651.47	1,06,515
31-03-2018	0.70	74,560 (7×10,651.47)	58.42	1,276.28	11,927.75	1,19,278
31-03-2021	0.40	47,711 (4×11,927.75)	42.18	1,131.13	13,058.88	1,30,589
15-03-2022	0.25	32,647 (2.5×13,058.88)	46.45	702.85	13,761.73	1,37,617
24-03-2023	0.40	55047 (4×13,761.33)	48.10	1,144.43	14,906.16	1,49,062
31-07-2023	—	—	53.75	—	14,906.16	1,49,062

(b) Return on Investment

Particulars	₹
Redemption value = 14,906.16 × 53.75	8,01,206.10
Less: Short-term capital gain tax @ 10% = 1,144.43 units (53.75 - 48.10) × 10%	646
	8,00,560.10
Less: Securities transaction tax @ 0.2% on ₹8,01,206.10	1,602.41
Redemption value net of taxes	7,98,957.69
Less: Investment	1,00,000.00
Net return from investment	6,98,957.69
Period of investment (1/4/2013 to 31/07/2023) in months	124
Annual average return = $\frac{[\text{Net Return} \times 12 \text{ months} \times 100]}{\text{Purchase price} \times \text{Period of investment (in months)}}$ $= \frac{6,98,957.69 \times 12 \times 100}{1,00,000 \times 124}$	67.64%

- Short-term capital gains is only in respect of investment made on 24-3-2023 where the period of holding is less than 1 year.
- Securities transaction tax is not to be considered for short-term capital gains and hence deducted from the net amount to ascertain cash flows.

Returns from Plan 'T' – Bonus plan for Mr. Sachin

Under the bonus plan, bonus units are issued in the specified ratio.

(a) Statement of units, bonus and value per unit

Date	Bonus Ratio	Units	Cum. Units	NAV/Unit (₹)
(1)	(2)	(3)	(4)	(5)
01-04-2013	Initial issue	10,000	10,000	10.00
31-03-2018	5:4	12,500 (10,000×5/4)	22,500	31.05
31-03-2022	1:3	7,500 (22,500×1)/3	30,000	20.05
24-03-2023	1:4	7,500 (30,000×1)/4	37,500	19.95

(b) Return on Investment

Particulars	₹
Redemption value = 37,500 × 22.98	8,61,750.00
Less: Short-term capital gain tax @ 10% = 7500 ×(22.98 - 0)× 10% (See Note below)	17,235.00
	8,44,515.00
Less: Securities transaction tax @ 0.2%	1,723.50
Net of tax	8,42,791.50
Less: Investment	1,00,000.00
Net gain	7,42,791.50

Annual average return = $\frac{\text{[Net Return} \times \text{12 months} \times \text{100]}}{\text{Purchase price} \times \text{Period of investment (in months)}}$ $= \frac{7,42,719.50 \times 12 \times 100}{1,00,000 \times 124}$	71.88%

Note:

(i) For income tax purposes, cost of acquisition of bonus shares is considered as NIL.

(ii) Short-term capital gains is only in respect of bonus issued on 24-3-2023 as the period of holding is less than 1 year.

Return from plan U - Growth plan to Mr. Sourav

Particulars	₹
Redemption value (10,000 × 82.07)	8,20,700.00
Less: Security transaction tax (S.T.T) is 0.2%	1,641.40
Net amount received	8,19,058.60
Less: Investment	1,00,000.00
Net Gain	7,19,058.60
∴ Average annual return = [(7,19,058.60 × 12 × 100)] ÷ [(1,00,000 × 124)]	= 69.59%

Note: There is no short-term capital gains as the period of holding is more than 1 year.

2. The following particulars relates to Gift Fund Schemes:

	Particulars	Value (₹ in Crore)
1.	Investment in Shares (at cost)	
	(a) IT and ITES companies	28
	(b) Infrastructure companies	15
	(c) Aviation, Transport and Logistics	7
	(d) Automotive	32
	(e) Banking/Financial services	8
2.	Cash and Other Assets in Hand (even throughout the fund period)	2
3.	Investment in Fixed Income Bearing Bonds	
	(a) Listed bonds (10,000; 10.50% Bonds of ₹10,000 each)	10
	(b) Unlisted bonds	8
4.	Expenses payable as on closure date	3
5.	Market expectation on Listed Bonds	8.40%
6.	Number of units Outstanding	5.50

The particulars relating to sectoral Index are as follows -

Sector	Index on the Date of Purchase	Index on the Valuation Date
IT and ITES	1750	2950
Infrastructure	1375	2475
Aviation, Transport and Logistics	1540	2570
Automotive	1760	2860
Banking/Financial	1600	2300

Required:

(i) Net asset value of the fund

(ii) Net asset value per unit.

(iii) If the period under consideration is 2 years and the fund has distributed ₹2.00 per unit per year as cash dividend. Ascertain the Net Return (Annualized)

(iv) Ascertain the Expense Ratio, if the fund has incurred the following expenses:

Management and Advisory Fees	₹275 lakhs
Administration expenses (including Fund Managers Remuneration)	₹350 lakhs
Publicity and Documentation	₹80 lakhs
	₹705 lakhs

Solution:

(1) Net asset value of the fund

	Particulars	₹ in Crore
1.	Market value of shares in	
	(a) IT and ITES [Cost ₹28×Closing Sector Index 2950÷Opening Sector Index 1750]	47.20
	(b) Infrastructure [Cost ₹15×Closing Sector Index 2475÷Opening Sector Index 1375]	27.00
	(c) Aviation [Cost ₹7×Closing Sector Index 2570÷Opening Sector Index 1540]	11.68
	(d) Automotive [Cost ₹32×Closing Sector Index 2860 ÷ Opening Sector Index 1760]	52.00
	(e) Banking [Cost ₹8×Closing Sector Index 2300÷Opening Sector Index 1600]	11.50
2.	Market Value of Investment in Listed Bonds [(Face value ₹10 crores × Interest on Face Value @10.50%) ÷ Market Expectation 8.40%]	12.50
3.	Cost of investment in Unlisted Bonds	8.00
4.	Cash and Other Assets	2.00
	Total Assets of the fund Less: Outstanding Expenses	171.88 (3.00)
	Net Asset Value of the Fund	**168.88**

Note: It is assumed that Cash and Other Assets existed from the beginning of the period at the same values.

(2) **Net asset value per unit**

NAV Per Unit = Net Asset Value of the Fund ÷ No. of units outstanding

= ₹168.88 crore ÷ 5.50 crore units = ₹30.71

(3) Annualized return on Fund

(a) Computation of Opening NAV

	Particulars	₹ in crore
1.	Investment in Shares (at Cost)	
(a)	IT and ITES Companies	28.00
(b)	Infrastructure Companies	15.00
(c)	Aviation, Transport and Logistics	7.00
(d)	Automotive	32.00
(e)	Banking/Financial Services	8.00
2.	Investment in Fixed Income Bearing Bonds	
(a)	Listed Bonds [10,000; 10.50% bonds of ₹10,000 each]	10.00
(b)	Unlisted Bonds	8.00
	Net Asset Value	108.00

Note: Cash and Other Assets are not included because they arise out of investments made in the beginning.

(b) Computation of Opening NAV per unit

Net asset value of the fund ÷ No. of units outstanding = ₹108.00 crore ÷ 5.50 crore units

= ₹19.64/unit

(c) Computation of Returns per units

(i) Capital appreciation = Closing NAV per unit – Opening NAV per unit

= ₹30.71-₹19.64

= ₹11.07

(ii) Cash dividend = ₹2.00×2 years

= ₹4.00

(iii) Returns = (Cash dividend+Capital appreciation)/Opening NAV

= (₹4.00+₹11.07)/₹19.64

= 77%

(iv) Returns per year = Total return/Period = 77%/2

= 38.50%

4. **Expense ratio**

(i) Total expenses = Management advisory fees ₹2.75 cr + Administration expenses ₹3.50 crore + Publicity and documentation ₹0.80 crore = ₹7.05 crores

(ii) Average value of portfolio = (Opening Net Asset Value + Closing Net Asset Value) ÷ 2

$$= \frac{₹\,(108 + 168.88)}{2}$$

= ₹276.88 ÷ 2 = ₹138.44 crores

(iii) Expense Ratio = Total Expenses ÷ Average Value of Portfolio

= (₹7.05 Crores ÷ ₹138.44 Crores) × 100

= 5.09%

(iv) Expense per unit = Total expenses ÷ No. of units

$$= \frac{₹\ 7.05\ \text{crore}}{5.50\ \text{crore}}$$

= ₹1.282.

Exercise

Theoretical Problems

Multiple Choice Questions

1. The important role while establishing the mutual fund scheme is played by the

   (a) AMC

   (b) Trustees

   (c) Sponsors

   (d) Custodians

2. Settlement are done at the instance of the

   (a) Custodian

   (b) AMC

   (c) Trustees

   (d) Sponsors

3. The functions of the trustees is/are

   (a) Marketing the mutual fund schemes

   (b) To seek the RBI approval in case the scheme is open for NRIs

   (c) Submitting compliance reports to SEBI

   (d) All of the above

4. Balanced funds have the following characteristics

   (a) They consist of equity and bonds in equal proportion

   (b) They have moderate risk component

   (c) They have above average growth potential

   (d) None of the above

5. The function(s) of AMC is/are

   (a) Taking investment decisions and committing the funds in the primary/secondary market

   (b) Maintaining the records and necessary information systems

   (c) Inform the trustees of the latest happenings and decisions

   (d) All of the above

6. Which among the following increases the NAV of a mutual fund scheme?

   (a) Value of investments

   (b) Receivables

   (c) Accrued income

   (d) All of (a), (b) and (c)

7. Following is/are the advantages of investing in mutual funds

   (a) Diversified investment

   (b) Professional management

   (c) Tax benefits

   (d) All of (a), (b) and (c)

8. Which of the following benefits is not usually conferred by mutual funds?

   (a) Diversified investment portfolio

   (b) Professional stock selection and asset management

   (c) Tax benefits

   (d) Assured returns

9. Which of the following is not an advantage of mutual funds?

   (a) Expertise in selection and timing of investment

   (b) Economies of scale and lower transaction costs

   (c) Reinvestment of dividend income possible

   (d) Limited investment opportunities and hence no need for the investor to have knowledge on investment management

10. The mutual funds are likely to perform better in the market than a small investor because they

    (a) Depend on the technical analysis tools and have the expertise to use them

    (b) Depend on the fundamental analysis which ensures the long-term performance of the fund

    (c) Have access to better information, ability and infrastructure to utilize it

    (d) None of the above

11. Identify the statement that applies to open-end mutual funds

    (a) They do not redeem or issue shares

    (b) Shares of such funds are traded on organized exchanges

    (c) Their price can't fall below the NAV

    (d) Exit from such funds involves selling shares to other investors.

12. Which of the following is an advantage to investors of exchange traded funds (ETFs) that is not available to investors in open-end mutual funds?

    (a) ETFs allow investors to invest in broad market indexes as well as international indexes

    (b) Investors can avoid incurring an expense in the form of a bid ask spread by purchasing an ETF rather than investing in an open-end mutual fund

    (c) ETFs offer a potential tax advantage to investors who incur capital gains taxes only when they sell ETF shares

    (d) ETF prices cannot deviate from net asset value

13. An investor has invested in a mutual fund when the NAV was ₹ 15.50 per unit. After 90 days the NAV was ₹ 14.45 per unit. During the period the investor got a cash dividend of ₹ 1.35 per unit and capital gain distribution of ₹ 0.20. The annualized return based on 360 days year count will be

    (a) 3.23%

    (b) 12.92%

    (c) 0.8075%

    (d) 16.45%

14. A certain mutual fund has a return of 17% with standard deviation of 3.5% and the sharpe ratio is 4. The risk free rate is

    (a) 12.5%

    (b) 4%

    (c) 3%

    (d) 7.5%

15. B can earn a return of 18% by investing in equity shares on his own. Now he is considering a recently announced equity based Mutual Fund Scheme in which initial expenses are 1% and annual recurring expenses are 2%. How much should be Mutual Fund earn to provide B, a return of 18%?

    (a) 18.18%

    (b) 20.18%

    (c) 22.18%

    (d) 21%

16. The following information is extracted from MF, a mutual fund scheme. NAV on 01- 11-2019 is ₹ 65.78, annualized return is 15%. Distributions of income and capital gains were ₹ 0.50 and ₹ 0.30 per unit in the month. What is the NAV on 30-11-2019?

    (a) ₹ 67.50

    (b) ₹ 66.14

    (c) ₹ 65.80

    (d) ₹ 66.96

17. The market price (ex-dividend) of a unit of an open-ended mutual fund scheme was ₹30 at the beginning of the year. A dividend of ₹3 has been paid during the year. Theprice of the unit is ₹35 at the year end. The rate of return of the past year of the unit is

    (a) 24.32%

    (b) 26.67%

    (c) 25.52%

    (d) 28.56%

Answer:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
c	b	d	b	d	d	d	d	d	c	d	b	b	c	b	c	b

State True or False

1. The funds that combine features of both open-ended and close-ended schemes are called Middle Funds
2. Day to day operations of a mutual fund is handled by AMC
3. Diversified equity fund is a category of funds that invest in a diverse mix of securities that cut across sectors and market capitalization.
4. The asset allocation that is worked out for an investor based on risk profiling is called Strategic Asset Allocation
5. The funds that combine features of both open-ended and close-ended schemes are called Dual Funds
6. When the trustees / AMC make any change in the fundamental attributes of a scheme, Unit-holders are given the option to exit at the prevailing Net Asset Value. This exit window must be kept open for 15 days.
7. Diversified equity fund is a category of funds that invest in a diverse mix of securities that cut across sectors and market capitalization
8. AMCs are required to invest seed capital of 1% percent of the amount raised subject to a maximum of Rs. 50 Lakhs in all the growth option of the mutual fund schemes (excluding close-ended schemes) through the lifetime of the scheme.
9. While the AMC manages the investments of the scheme, the assets of the scheme are held by the Custodian.
10. Mutual Fund Units involve investment risks including the possible loss of principal.

Answer:

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
False	True	True	True	False	False	True	True	True	True

Fill in the blanks

1. The First player of the Mutual fund industry was _____
2. In India, AMC must be registered with _____
3. _____ schemes not exposed to sudden and large movements of funds.

4. Investors can enter and exit under _____ at any time.

5. _____ approve the contents of the Offer document.

6. _____ is a supplementary document that contains additional information of the fund.

7. _____ is a myth about Mutual Fund Investment in India.

8. The performance of a scheme is reflected in its _____

9. CAGR stands for _____

10. _____ of a mutual fund is the price at which units are bought or sold by investor.

Answer:

1.	UTI MF	2.	Securities Exchange Board of India
3.	Close-Ended Funds	4.	Open-Ended Funds
5.	Trustee	6.	SAI
7.	Demat account	8.	Net asset value
9.	Compounded Annual Growth Rate	10.	NAV

Short Essay Type Questions

1. What are the key differences between close-ended and open-ended schemes?

2. What is a fund-of-fund scheme?

3. Describe in brief about systematic withdrawal plan and systematic investment plan.

4. What do you mean by net asset value of a mutual fund?

5. Discuss the tax aspects of a mutual fund investment.

6. What are the factors to be considered for selecting a mutual fund for investment?

7. Explain the following terms: alpha, beta, asset mix, rate of return, ex-mark (R^2), gross yield, portfolio turnover ratio, expense ratio.

8. What is ETF?

9. What do you mean by Real Estate Investment Trust (REIT)?

Essay Type Questions

1. Define A mutual fund and state its advantages and disadvantages in brief.
2. Discuss the role of various entities in a mutual fund operation
3. Discuss in brief the different types of schemes in a mutual fund
4. What is an exchange traded fund? How is it structured?
5. What are the restrictions and conditions for investments by mutual funds?
6. What are the methods commonly applied for valuation of traded and non-traded securities of a mutual fund?
7. What are the rights and obligations of mutual fund investors?
8. How does ETF, REIT & InVIT work?
9. Enumerate the differences between REIT & Real Estate Mutual Fund.

Practical Problem

Multiple Choice Question

1. How much money would you need to purchase 400 shares of a mutual fund with a NAV of ₹ 55 per share and a 3% load?

   (a) ₹22,000

   (b) ₹21,450

   (c) ₹23,200

   (d) ₹22,660

2. If a mutual fund NAV is 50 and its expense ratio is 2% what are the total expenses per share?

   (a) 2

   (b) 10

   (c) 1

   (d) 5

3. You invested 1,000 in a mutual fund with a 4% load when NAV was 20 per share. If you sell your shares at a NAV of 20 per share, what is the return of your investment?

   (a) 14.8%

   (b) 15.2%

   (c) 12.5%

   (d) 10.8%

4. A mutual fund has a beginning balance of 100 million earns interest of 10 million, receives dividends of 15 million, and has expenses of 5 million. If 10 million shares are outstanding, what is the NAV?

   (a) 10.50

   (b) 11.00

   (c) 12.00

   (d) 12.50

5. A scheme has average weekly net assets of ₹ 324 Cr and has annual expenses of ₹ 3.24Cr, it's expenses ratio is

   (a) 1%

   (b) 10%

   (c) Can't say

   (d) Insufficient information

6. If a scheme has 45 Cr units issued and has an FV of ₹10 and NAV is at 11.33, unit capital (₹ in Cr) would be equal to

   (a) 500.85

   (b) 50.85

   (c) 950.85

   (d) 450

7. For a scheme to be defined as an equal fund, it must have a minimum

   (a) 65% in Indian equities

   (b) 65% in equities

   (c) 51% Indian equities

   (d) 35% in Indian equities

8. On average, actively managed mutual funds have an expenses ratio of about

   (a) 1.5%

   (b) 2.5%

   (c) 3%

   (d) 5%.

9. If opening units 10,000 Units subscribe 3000, Units redeem 1000 then Closing units?

   a) 10,000 units

   b) 13,000 units

   c) 12,000 units

   d) 14,000 units

10. If opening units 1,25,000 Units subscribe 2,00,000, Units redeem 50,000 then Closing units?

    a) 3,25,000 units

    b) 2,75,000 units

    c) 3,75,000 units

    d) 2,50,000 units

11. A mutual fund had average daily assets of ₹500 million in the past year. During the year, the fund sold ₹60 million of stock X and purchased ₹90 million of stock Y. What was the fund's turnover ratio?

    (a) 12%

    (b) 15%

    (c) 18%

    (d) 30%.

12. A closed-end fund has a portfolio currently worth ₹350 million. The fund has liabilities of ₹5 million and 17 million units outstanding. What is the net asset value of the fund?

    (a) ₹20.28

    (b) ₹20.29

    (c) ₹20.59

    (d) ₹29.17

Answer:

1	2	3	4	5	6	7	8	9	10	11	12
d	c	b	c	a	d	b	a	c	b	a	b

References:

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