

MUTUAL FUNDS

A **Mutual Fund** is a **trust** that pools money from multiple investors to invest in the **capital market**, such as stocks, bonds, or other securities. It provides a way for individuals to participate in a diversified investment portfolio managed by professionals.

I. Key Features of a Mutual Fund:

1. **Pooling of Resources:** Money from many investors is combined to create a large investment corpus.
2. **Professional Management:** Funds are managed by **experienced money managers (Fund Managers)** who make investment decisions based on the scheme's stated objectives.
3. **Shared Ownership:** Investors become **unit holders**, owning a proportion of the fund's assets based on the units they hold.
4. **Returns Based on Market Performance:** The **value of investments** (Net Asset Value or NAV) changes based on market conditions:
 - **If securities appreciate in value:** Returns increase.
 - **If securities decline in value:** Returns decrease.
5. **Income Distribution:** **Net income earned** (e.g., dividends, interest) and **capital appreciation** (growth in investment value) are distributed among unit holders in proportion to their holdings.
6. **Fees and Expenses:** Mutual Fund companies (called **Fund Houses**) charge fees for **managing and administering** the portfolio. Fees are typically a percentage of the fund's total value which is a part of Expense Ratio.

***Example:** You invest ₹10,000 in a mutual fund along with other investors. The fund invests the pooled money in stocks and bonds. The fund manager selects investments to match the stated objective (e.g., growth or income). If the market value of the investments grows, you share in the **capital appreciation** and receive **income distributions** based on your proportionate units.*

Why Invest in Mutual Funds?

1. **Diversification:** Spreads investment across different securities, reducing risk.
2. **Professional Expertise:** Managed by experienced professionals.
3. **Accessibility:** Affordable investment option even for small investors.
4. **Liquidity:** Easy to buy and sell mutual fund units.
5. **Transparency:** Regular updates on performance and holdings.

II. What Is the Expense Ratio?

The expense ratio represents the total cost of managing and operating a mutual fund, expressed as a percentage of the fund's average total assets

How Is the Expense Ratio Calculated?

$$\text{Expense Ratio} = \frac{\text{Total Annual Operating Expenses}}{\text{Average Assets Under Management (AUM)}} \times 100$$

- i) Annual Operating Expense includes **Management Fees, Administrative Costs, Marketing and Distribution Fees etc.**

- ii) **Assets Under Management** = Total market value of all investments like stock, bonds (+) Cash & Cash Equivalents (+) New money coming into funds when investors purchase units (-) Fund Management fees or Redemption fees payable (-) Dividends declared and payable etc.

III. What Are Entry and Exit Loads ?

1. **Entry Load (Front - End Load)** : An **entry load** is a fee or commission charged by a mutual fund when you **invest in the fund** (i.e., at the time of purchasing units). This fee is deducted from your initial investment amount.
2. **Exit Load (Back - End Load)** : An **exit load** is a fee charged when you **redeem (sell) units** of the mutual fund before a specified time period. It is generally expressed as a percentage of the redemption value. It is charged to discourage frequent withdrawals and cover administrative costs related to redemption.

Current Scenario in India

- **Entry Load:** SEBI abolished entry loads in mutual funds in **2009** to make investing more transparent and investor-friendly. Hence, most mutual funds in India **do not charge entry loads** now.
- **Exit Load:** Exit loads are still applicable in many mutual funds, especially for withdrawals within a short duration (e.g., 1 year).

*Example - You invest ₹10,000 in a mutual fund and decide to redeem your units after 6 months. The fund has an **exit load of 1%** if redeemed within 1 year. The value of your investment at the time of redemption is ₹12,000.*

*Solution : Exit load: 1% of ₹12,000 = ₹120. Net redemption amount: ₹12,000 - ₹120 = **₹11,880**.*

IV. What are the types of Mutual Funds ? (Open-Ended, Closed-Ended, and Interval Funds)

1. Open-Ended Funds : Open-ended funds allow investors to **buy and sell units** at any time. These funds do not have a fixed maturity period. Units are bought and sold based on the **Net Asset Value (NAV)**, which is calculated daily.

Key Features:

1. **Liquidity:** Highly liquid, allowing investors to enter or exit at their convenience.
2. **NAV-Based Pricing:** Units are priced based on the fund's current NAV.
3. **No Maturity Date:** No fixed term; you can stay invested as long as you wish.

Example: HDFC Equity Fund (Open-Ended Equity Fund).

*You invest ₹10,000 in the fund at a NAV of ₹50/unit. You get **200 units** (₹10,000 ÷ ₹50). After 6 months, the NAV rises to ₹60/unit. You redeem the units. Redemption Value: ₹60 × 200 = **₹12,000**. Profit: ₹2,000.*

2. Closed-Ended Funds: Closed-ended funds are launched for a **fixed period**, and investors can only invest during the **New Fund Offer (NFO)** period. Units cannot be redeemed until maturity, but they can be traded on stock exchanges.

Features:

1. **Fixed Maturity:** Typically ranges from 3 to 7 years.
2. **Stock Exchange Trading:** Investors can sell units on the stock exchange if liquidity is needed.
3. **NAV and Market Price:** Units may trade at a premium or discount to the NAV due to demand and supply in the stock market.

Example: SBI Fixed Maturity Plan – 5 Years.

*You invest ₹20,000 during the NFO period at a NAV of ₹10/unit. You receive **2,000 units** (₹20,000 ÷ ₹10).*

*After 2 years, you need money. Since redemption is not allowed, you sell units on the stock exchange say at ₹12/unit. Sale Value: ₹12 × 2,000 = **₹24,000**. Profit: ₹4,000.*

3. Interval Funds

Interval funds combine features of both open-ended and closed-ended funds. They remain closed for most of the time but **open for transactions (buy/sell)** at specified intervals.

Features:

1. **Specified Transaction Periods:** Units can only be bought or redeemed during pre-specified time windows (e.g., quarterly or yearly).
2. **NAV-Based Pricing:** Units are priced based on the fund's NAV during the open period.
3. **Hybrid Structure:** Offers partial liquidity like open-ended funds and stability like closed-ended funds.

Example: UTI Interval Fund – Quarterly Interval Plan.

*You invest ₹15,000 in the fund at a NAV of ₹10/unit during an open interval. You receive **1,500 units** ($₹15,000 \div ₹10$). After 3 months, the NAV rises to ₹11/unit. The fund reopens for redemption.*

Redemption Value: $₹11 \times 1,500 = ₹16,500$. Profit: ₹1,500.

V. TYPES OF SCHEMES IN MUTUAL FUNDS

1. Balanced Fund: A **Balanced Fund** (also known as a Hybrid Fund) is a type of mutual fund that invests in a mix of **equities (stocks)** and **debt instruments (bonds)** to provide a balance between **growth (equity)** and **stability (debt)**. It can be ideal option for those who do not wish to take total exposure to equity, but only a limited exposure.

*Example : **HDFC Balanced Advantage Fund** (Equity Allocation: 65% , Debt Allocation: 35%)*

Objective: Provide capital appreciation through equity and steady income through debt.

2. Diversified Equity Funds: A **Diversified Equity Fund** is a mutual fund that invests primarily in **equities across different sectors, industries, and market capitalizations**. The main goal is to minimize risk by diversifying across various types of stocks. Below are the different types of Diversified Equity Funds explained:

a. Flexicap Fund: A fund that invests across market capitalizations (large-cap, mid-cap, and small-cap) with no predefined limits on allocation. This gives the fund manager complete flexibility to decide the allocation based on market opportunities.

Example: A Flexicap fund might allocate 50% to large-caps, 30% to mid-caps, and 20% to small-caps in a bullish market but shift to 70% large-caps and 30% mid-caps during volatile times.

b. Multicap Fund: A fund that is mandated to invest **at least 25% each in large-cap, mid-cap, and small-cap stocks**, with the remaining 25% allocated at the discretion of the fund manager.

c. Contra Fund: A fund that invests in **out-of-favor or undervalued stocks** with the potential for high returns when the market recognizes their value. This strategy focuses on buying low and waiting for growth. **It is** suitable for investors with a high-risk appetite.

Example: A Contra Fund may invest in companies that are temporarily undervalued, such as those in struggling sectors (e.g., IT during a slowdown) or companies undergoing restructuring.

d. Index Fund: A Passively managed fund that replicates the portfolio of a benchmark index, such as **Nifty 50** or **Sensex**, to deliver returns in line with the index. Expense Ratio is lower compared to actively managed funds.

*Example: An Index Fund tracking the **Nifty 50** will hold the same 50 stocks in the same proportions as the index. If Nifty 50 gains 10%, the fund's return will also be approximately 10% (minus expenses).*

e. Dividend Yield Fund : A fund that invests in **high-dividend-yielding stocks**, typically companies with a strong financial track record and stable dividend payouts.

Dividend yield = Dividend per share $\div$ Market price of the share.

Example: A Dividend Yield Fund might invest in companies like:

- **Coal India:** High dividend yield due to consistent payouts.
- **ITC:** Known for its stable dividend track record.

3. Equity Linked Savings Scheme (ELSS)

Equity Linked Savings Scheme (ELSS) is a type of mutual fund scheme that offers tax benefits under **Section 80C** of the Income Tax Act. **Key Features:**

1. **Tax Benefits:** Investments in ELSS are eligible for a tax deduction of up to **₹1,50,000 per year** under Section 80C.
2. **Lock-In Period:** ELSS investments are subject to a **three-year lock-in period**.
3. **Equity Investment:** ELSS funds invest predominantly in **equity and equity-related instruments**, allowing investors to participate in market growth.

4. Sector Funds

Sector Funds are mutual funds that focus on investing in a specific sector or industry, such as technology, healthcare, or banking. They aim to capitalize on the growth potential of that particular sector.

If the sector performs well, sector funds can deliver **exceptional returns**. However, poor sector performance can lead to significant losses. It is suitable for investors with sector-specific knowledge and a high-risk appetite.

5. Thematic Funds

A **Thematic Fund** invests based on a specific **theme or trend** rather than focusing on a single sector.

***Example: Infrastructure Thematic Fund** Invests in companies involved in construction, cement, steel, and power, as all are linked to the infrastructure theme. A boom in infrastructure projects can lead to higher returns.*

6. Arbitrage Funds

An **Arbitrage Fund** is a type of mutual fund that exploits the **price difference between the cash and futures markets**. It aims to provide **low-risk, low-volatility returns** with better liquidity than traditional debt instruments. **Key Features:**

1. These funds buy a stock in the **cash market** and sell it in the **futures market** to lock in a risk-free profit from price differences.
2. Arbitrage strategies minimize risk, making these funds safer compared to equity funds.

***Example:** A stock is trading at ₹1,000 in the cash market and ₹1,020 in the futures market. The fund buys the stock in the cash market at ₹1,000 and simultaneously sells it in the futures market at ₹1,020. Profit = ₹20 per share, minus transaction costs.*

7. Hedge Funds

A **Hedge Fund** is a private investment fund that uses **advanced investment strategies** like leveraging, short selling, and derivatives to maximize returns. Unlike mutual funds, hedge funds are lightly regulated and cater only to **wealthy investors** or institutions. **Key Features of Hedge Funds:**

1. **Private Investment Vehicle:** Not open to retail investors; offered to high-net-worth individuals (HNIs) and institutional clients.
2. **Performance Fees:** Hedge funds charge a percentage of profits as a performance fee.
3. **Aggressive Investment Strategies:** Use long/short positions, derivatives, leverage, and arbitrage to maximize returns.
4. **Opaque Operations:** Hedge funds do not disclose their portfolios publicly, unlike mutual funds.

***Example:** A hedge fund might **short-sell** stocks expected to decline and use the proceeds to invest in assets that are expected to appreciate, seeking to profit from both moves.*

8. Cash Funds

A **Cash Fund** is a type of mutual fund that invests in **very short-term debt instruments** and **money market instruments**, aiming to provide **stability, liquidity, and lower volatility**. It invests in instruments like Treasury bills, commercial papers, and certificates of deposit. It is suitable for risk-averse investors looking for a place to park their money for a short duration.

9.Exchange Traded Funds

ETFs are investment products designed to **track the performance** of an underlying **index, commodity, bond**, or other assets. These Funds are listed on the stock exchanges and their prices are linked to the underlying index. The Authorised Participants (APs) act as market makers for ETFs who create and redeem ETF units.

1. Index ETFs

Example: A Nifty 50 ETF tracks the **Nifty 50 Index**, which consists of the 50 largest and most liquid companies in India, like Reliance Industries, HDFC Bank, and Infosys.

How It Works:The ETF holds the same 50 stocks as the Nifty 50 Index in the same proportions. If Reliance Industries constitutes **12% of the Nifty 50**, the ETF allocates **12% of its assets** to Reliance Industries shares.

Investor Activity: An investor buys **10 units of the Nifty 50 ETF** at ₹200/unit. If the Nifty 50 Index rises by **5%**, the ETF price also rises approximately by 5%. New price = ₹200 + (5% of ₹200) = ₹210/unit.

The investor can sell the ETF units at ₹210/unit on the stock exchange.

Key Insight: The ETF replicates the **performance of the index**, providing the investor with the same returns (minus a small expense ratio).

2. Commodity ETFs

Example: Gold ETF: Gold ETF tracks the **price of gold** without requiring investors to physically own gold.

How It Works: The ETF issuer (like Nippon India AMC) holds **physical gold** equivalent to the units issued. The ETF price is linked to the market price of gold. If the gold price is ₹5,000/gram, one ETF unit (representing 0.01 gram of gold) may trade at ₹50/unit.

Investor Activity: An investor buys 100 units of the Gold ETF at ₹50/unit. If gold prices increase by **10%** to ₹5,500/gram, the ETF price rises to ₹55/unit. The investor can sell the ETF at ₹55/unit for a profit of ₹500 (₹55 × 100 units - ₹50 × 100 units).

Key Insight: The ETF provides **exposure to gold prices** without the need for storage or concerns about purity.

3. Bonds ETFs

Example: Bharat Bond ETF tracks a basket of **AAA-rated government bonds**.

How It Works:The ETF invests in bonds issued by top public sector companies like NTPC, Power Grid, and REC. The ETF's price reflects the combined performance of these bonds, including interest income.

Investor Activity: An investor buys units of Bharat Bond ETF with a maturity date of April 2031. Interest income from the bonds is reflected in the ETF's NAV. If interest rates decline, bond prices rise, and so does the ETF's value.

Key Insight: Bond ETFs provide a stable return and allow retail investors to gain exposure to a diversified bond portfolio.

4. Currency ETFs

Example: USD ETFs track the movement of the **US Dollar (USD)** relative to the Indian Rupee (INR).

How It Works: The ETF invests in USD-denominated assets like treasury bills or cash equivalents. The ETF's price reflects changes in the USD/INR exchange rate. If the USD appreciates against the INR, the ETF price rises, and vice versa.

Investor Activity: An investor buys USD ETF units when the USD/INR rate is ₹80. If the USD strengthens to ₹85, the ETF price increases proportionally.

Key Insight: Currency ETFs are a simple way to hedge against currency risk or invest in foreign currencies.

Comparison of ETFs with Mutual Funds

	ETF	Mutual Fund
Trading	Traded on stock exchanges during the day.	Bought/redeemed at end-of-day NAV.
Pricing	Real-time based on market demand/supply.	NAV calculated at the end of the trading day.
Expense Ratio	Lower (passive management).	Higher (active management).
Liquidity	High (intraday trading possible).	Moderate (redemption with AMC).

VI. What is Tracking Error?

Tracking Error measures the difference between the performance of an **Exchange-Traded Fund (ETF)** or **index fund** and its **benchmark index**. It quantifies how closely the fund is replicating the performance of its benchmark.

$$\text{Formula for Tracking Error} = \sqrt{\frac{\sum (R_f - R_b)^2}{n}}$$

Where:

R_f : Returns of the fund.

R_b : Returns of the benchmark index.

n : Number of observations (e.g., days, months).

Why Does Tracking Error Occur?

1. **Fund Expenses:** Expense ratios reduce fund returns compared to the benchmark.
2. **Cash Drag:** Funds may hold cash for liquidity purposes, which doesn't earn returns like the benchmark.
3. **Rebalancing Delays:** Index funds/ETFs may not instantly adjust to changes in the index composition.
4. **Transaction Costs:** Costs such as brokerage fees reduce the fund's returns.
5. **Purpose :** It shows how accurately an ETF or index fund replicates the benchmark index.
6. **A lower tracking error** is preferred as it indicates the fund is closely mirroring the index.
7. **Factors Affecting Tracking Error:** Expense ratios, cash drag, rebalancing delays, transaction costs, and tax treatments.

Example : You are analyzing the tracking error of the **Nippon India ETF Nifty BeeS**, which tracks the **Nifty 50 Index**, over 5 days. Let's take into account all possible factors causing the differences between the ETF returns and the benchmark returns.

Assumptions: Benchmark Index: Nifty 50. **ETF Name:** Nippon India ETF Nifty BeES.

Expense Ratio of ETF: 0.1% annually (0.000273% daily). **Observation Period:** 5 days.

Day	Nifty 50 Return (%)	ETF Return (%)	Difference	Reason for Difference
1	1.50	1.47	-0.03	Expense ratio deduction and minor cash drag.
2	-0.50	-0.48	0.02	Dividends received from ETF, While the Nifty 50 index reflects only price changes
3	1.00	0.95	-0.05	The ETF manager incurred transaction costs (brokerage and taxes) while rebalancing the portfolio to match the updated index composition.
4	0.80	0.76	-0.04	The ETF manager faced a slight delay in adjusting the portfolio composition to reflect changes in index weights, leading to underperformance
5	-1.20	-1.15	0.05	The ETF faced redemption requests from investors, forcing the fund manager to sell holdings. The timing and liquidity issues caused a temporary deviation from the index's performance.

$$\begin{aligned}\text{Tracking Error} &= \sqrt{\frac{\sum(R_f - R_b)^2}{n}} = \frac{(-0.03)^2 + (0.02)^2 + (-0.05)^2 + (-0.04)^2 + (0.05)^2}{5} \\ &= \frac{0.0009 + 0.0004 + 0.0025 + 0.0016 + 0.0025}{5} = .00158\end{aligned}$$

$$\text{Tracking Error} = \sqrt{.00158} = .0397 = 3.97\%$$

Interpretation of Tracking Error - The **tracking error of 3.97% over 5 days** indicates that the ETF's returns deviated slightly from the benchmark due to factors like expenses, rebalancing costs, and redemption pressure.

VII. Role of Fund Managers in Mutual Funds

A **Fund Manager** is the person responsible for managing the investments of a mutual fund. Their primary goal is to maximize returns while minimizing risk for unit holders. The responsibilities vary depending on whether the fund is **Actively Managed** or **Passively Managed**.

(I) Actively Managed Funds

In actively managed funds, the fund manager's role is **critical** because they aim to outperform the market by generating **positive alpha** (returns above the benchmark index).

Key Responsibilities:

1. **Extensive Research:**
 - Conducts thorough **fundamental** and **technical analysis** of stocks or other securities.
 - Evaluates economic conditions, industry trends, and company-specific factors.
2. **Stock Picking:**
 - Selects undervalued stocks or securities expected to outperform.
 - Regularly adjusts the portfolio based on market changes and opportunities.
3. **Generating Alpha:**
 - Uses expertise and judgment to achieve returns above the market average.

(II) Passively Managed Funds

In passively managed funds, such as **Index Funds** or **Exchange-Traded Funds (ETFs)**, the fund manager's role is **less intensive** because the goal is to match the returns of the underlying index, not outperform it.

Key Responsibilities:

1. **Index Tracking:**
 - Replicates the composition of the benchmark index (e.g., Nifty 50 or Sensex).
 - Ensures that the fund's holdings align with the index's weightings.
2. **Minimizing Tracking Error:**
 - Works to reduce the difference between the fund's returns and the index's returns.

VIII. Direct Plan vs. Regular Plan in Mutual Funds

Mutual funds offer two investment options: **Direct Plan** and **Regular Plan**, which differ in cost structure and how investments are made.

- **Direct Plan:** A plan where the investor invests directly with the Asset Management Company (**AMC**) without involving intermediaries like distributors or advisors. **Direct Plans** are cost-efficient and suitable for knowledgeable investors who can manage their investments independently.
- **Regular Plan:** A plan where the investment is made through an intermediary (e.g., distributor, broker, or advisor) who earns a commission. **Regular Plans** are convenient for investors who prefer advisory support but are willing to pay slightly higher costs.

Features: Direct Plan vs. Regular Plan

Feature	Direct Plan	Regular Plan
Expense Ratio	Lower (no intermediary fees).	Higher (includes distributor commission).
Returns	Higher due to lower costs.	Lower due to higher expenses.
Who Manages the Process?	Investor directly manages with the AMC.	Distributor/advisor assists the investor.
NAV	Higher because of lower expenses.	Lower due to higher expenses.
Investor Suitability	Experienced investors who can make decisions independently.	Beginners or investors seeking professional advice.
Guidance	No advisory support; the investor conducts their own research.	Advisory and administrative support provided by the intermediary.

IX. What is a Trail Commission in Mutual Funds?

A **trail commission** is an ongoing fee paid by a mutual fund company to distributors or advisors for the duration an investor stays invested in a fund. It is designed to incentivize advisors to provide ongoing support and ensure client satisfaction rather than focusing only on acquiring new clients.

How Does It Work?

1. **Purpose:** A trail commission is calculated as a **percentage of the investor's total fund value** and is paid regularly (monthly or quarterly) as long as the investment remains active.
2. **Who Receives It?** - Distributors, financial advisors, or intermediaries who helped the investor buy the mutual fund receive the trail commission.
3. **Source of Payment:** - It is paid by the **mutual fund company** out of the **Total Expense Ratio (TER)** charged to the fund.

Practical Example of Trail Commission

- An investor invests **₹10 lakh** in an equity mutual fund through a distributor.
- The mutual fund pays a trail commission of **0.5% per annum** to the distributor.
- The NAV of the fund grows by **10% annually** over 3 years.

Yearly Calculation:

Year 1: Investment Value: $₹10,00,000 \times (1 + 10\%) = ₹11,00,000$. **Trail Commission:** $₹11,00,000 \times 0.5\% = ₹5,500$.

Year 2: Investment Value: $₹11,00,000 \times (1 + 10\%) = ₹12,10,000$. **Trail Commission:** $₹12,10,000 \times 0.5\% = ₹6,050$.

Year 3: Investment Value: $₹12,10,000 \times (1 + 10\%) = ₹13,31,000$. **Trail Commission:** $₹13,31,000 \times 0.5\% = ₹6,655$.

Total Trail Commission Over 3 Years: $= ₹5,500 + ₹6,050 + ₹6,655 = ₹18,205$

X. What is Side-Pocketing in Mutual Funds?

Side-pocketing is a mechanism in mutual funds used to **segregate the illiquid or risky assets** of a portfolio from the liquid and safe assets. This ensures that existing investors are not adversely affected by redemption requests when the fund faces difficulties with certain holdings (e.g., default or downgrade of securities).

Example:-

Fund Name: ABC Debt Fund.

Portfolio Composition:

- **80%** Government and AAA-rated Corporate bonds
- **20%** Bonds issued by XYZ Corporation.

XYZ Corporation defaults on its bond payment or is downgraded to junk status.

Steps:

1. **Segregation of Risky Assets:** The bonds issued by XYZ Corporation (20% of the portfolio) are moved to a **side-pocket**. The remaining 80% of the portfolio continues to operate normally.
2. **Allocation of Units:** If you own **1,000 units** of the mutual fund: **800 units** represent the liquid portfolio and **200 units** represent the side-pocketed portfolio.
3. **Impact on Redemption:** You can redeem the **800 liquid units** normally. The **200 side-pocketed units** are locked until the XYZ bond issue is resolved.
4. **Recovery and Distribution:** If XYZ Corporation partially repays its debt, say 50% of the bond's value, you receive this amount based on your side-pocketed units.

XI. Advantages of Mutual Funds

1. **Professional Management:** Funds are managed by experienced professionals backed by research teams.
2. **Diversification:** Reduces risk by investing in a variety of securities.
3. **Higher Returns:** Offers better returns over the long term compared to traditional investment options.
4. **Low Cost of Management:** SEBI caps expense ratios at 2.5%, ensuring affordability.
5. **Liquidity:** Open-ended funds provide direct sales/repurchases; close-ended funds are listed on stock exchanges.
6. **Transparency:** Regular portfolio disclosures and daily NAV updates ensure transparency.
7. **Highly Regulated:** SEBI regulations ensure investor protection and strict compliance.

XII. Drawbacks of Mutual Funds

1. **No Guarantee of Returns:** Some funds may underperform against benchmarks.
2. **Diversification:** A mutual fund helps to create a diversified portfolio. Though diversification minimizes risk, it does not ensure maximizing returns. The returns that mutual funds offer is at times lesser than what an investor can earn from a single stock.
3. **Selection of Proper Fund:** Selecting a mutual fund is harder than picking individual stocks. Past performance is not a reliable predictor of future results.
4. **Cost Factor:** Management fees are charged regardless of performance. Exit loads may apply if investments are withdrawn before a stipulated time.

XIII. Role of FIIs in Mutual Funds

- FIIs (Foreign Institutional Investors) are large foreign entities with substantial funds for investment.
- FIIs are registered abroad with the purpose of investing in other countries' equity markets, hedge funds, pension funds, and mutual funds.
- FIIs have strong research team which guides them to invest in a country with a possibility of strong return in equity market. These funds invest to fuel a **bullish market**.
- Normally, FIIs fuel a bullish market for a short period of time and hence the nation experiences a strong inflow of foreign currency in its financial system at that time.
- Foreign Institutional Investors can buy units of domestic mutual funds either directly from the issuer of such securities or through a registered stock broker on a recognized stock exchange in India.
- These investments are subject to limits notified by SEBI.

XIV. Some Specialized Mutual Funds

1. **International Funds:** A mutual fund which raises money in India but invests globally.
2. **Offshore Funds:** A mutual fund located outside India which raises money globally for investing in India.
3. **Fund of Funds** : A mutual fund scheme that invests in **other mutual funds** instead of directly investing in stocks or bonds.
4. **Quant Funds:** Quant Fund works on a data-driven approach for stock selection and investment decisions based on pre-determined rules or parameters using statistics or mathematics-based rather than fund manager discretion.

PRACTICAL CONCEPTS, FORMULAS & EXAMPLES

1. Calculation of Cash and Cash Equivalents at year end

Add :

- Cash inflows from units issued during the year
- Cash received from Sale of investments
- Cash received from dividends declared by the securities the fund has invested in
- Interest received on debt investments

Less:

- Cash paid for purchasing new securities
- Cash paid for Fund Management and Operational Expenses
- Cash Distribution of Realised Income or dividends to unit holders
- Cash outflows for units redeemed during the year

2. Calculation of NAV (Net Asset Value)

Net Assets

1. Add:

- **Cash and cash equivalents** at year-end.
- **Investments in securities** at market value, including shares, debentures, bonds, government securities, etc.
- **Interest earned on investments but not received**, such as interest on bonds or deposits.
- **Dividends declared by the securities** (e.g., shares or mutual funds) the fund has invested in but not yet credited.

2. Less:

- **Accrued expenses**, such as fund management fees, operational costs, and other liabilities.
- **Dividends declared but not yet paid** to unit holders, as they represent a liability for the fund.

$$\therefore \text{NAV per Unit} = \frac{\text{Net Assets}}{\text{Number of Outstanding Units}}$$

3. Dividend Equalization ensures fairness where investors can buy or sell units anytime (open-ended funds).

It helps in two ways:

1. New investors pay their fair share – When new investors buy units, they may be required to pay an extra amount (dividend equalization) so that they don't get an unfair benefit from the income already earned by the fund.

$$(\text{Issue Price} = \text{Opening NAV} + \text{Entry Load} + \text{Dividend Equalization})$$

2. Exiting investors get their fair share – When investors sell (redeem) their units, they receive their share of income already earned by the fund.

$$(\text{Redemption Price} = \text{Opening NAV} - \text{Exit Load} + \text{Dividend Equalization})$$

Note: The Dividend Equalization concept applies when the Opening NAV is used for calculations.

Example 1 : On 1st April, An Open Ended MF Scheme had 300 lakh units outstanding with NAV of ₹ 18.75. At April End, it issued 6 lakh units at opening NAV + 2% entry load adjusted for dividend equalisation. At the end of May, 3 lakh units were repurchased at opening NAV + 2% exit load adjusted for dividend equalisation. At the end of June, 70 % of available income was distributed.

Income of April is ₹ 22.95 lakh, May is ₹ 34.425 lakh and June is 45.45 lakh.
Portfolio value appreciation is ₹ 425.47 lakhs

Calculation of Income Available for Distribution

Description	Units (Lakh)	Per Unit (₹)	Total (₹ in Lakh)
Income from April	300	0.0765	22.9500
<i>Add: Dividend Equalization Collected on Issue of 6 lakh units</i>	6	0.0765	0.4590
Total for April (.0765)	306	0.0765	23.4090
Add: Income from May	306	0.1125	34.4250
Total after May (.0765 + .1125)	306	0.1890	57.8340
<i>Less: Dividend Equalization Paid on Repurchase of 3 lakh units</i>	3	0.1890	(0.5670)
Net Income after Adjustment	303	0.1890	57.2670
Add: Income from June	303	0.1500	45.4500
Total Income (.0765 + .1125 + .1500)	303	0.3390	102.7170
Less: Dividend Paid (70% of .3390)	303	0.2373	(71.9019)
Net Income Available (30% of .3390)	303	0.1017	30.8151

Issue Price (April End) = Op. NAV + Entry Load + Dividend Equalisation = 18.75 + (18.75 x 2%) + .0765 = ₹ 19.2015

Repurchase Price(May End) = Op. NAV - Exit Load + Dividend Equalisatn = 18.75 - (18.75 x 2%) + .1890 = ₹ 18.564

Calculation of NAV at the end of Quarter

Opening NAV (300 x 18.75)	= 5625 lakhs
(+) Issue of 6 lakh units (6 lakhs x 19.2015)	= 115.209 lakhs
(-) Redemption of 3 lakh units (3 lakhs x 18.564)	= (55.692 lakhs)
(+) Income (22.95 + 34.425 + 45.45)	= 102.825 lakhs
(-) Distribution of Dividend (71.9019)	= (71.9019 lakhs)
(+) Portfolio Appreciation	= 425.47 lakhs
Closing NAV	= 6140.9101 lakhs

Closing NAV per unit = $\frac{6140.9101}{303 \text{ units}}$ = **20.267 per unit**

Example 2: Mr. A wants a **16% return** annually on his investment of ₹100. The **Mutual Fund** has **Initial Expense: 5.5%** (deducted upfront) and **Recurring Expense: 1.5%** (charged annually). The task is to calculate the rate of return the Mutual Fund must earn to meet Mr. A's goal.

1. When Mr. A invests ₹100, the **Initial Expense** of 5.5% is deducted upfront. **Net Amount** = ₹100 - ₹5.5 = ₹94.5.
2. Mr. A wants a **16% return** on his original investment of ₹100. **Target Return Amount** = ₹100 × 16% = ₹16.
3. The Mutual Fund must earn enough return on the **net invested amount (₹94.5)** to provide ₹16 as profit.
 $\therefore \text{Required Return} = \frac{16}{94.5} \times 100 = 16.93\%$
4. The Mutual Fund also charges an **annual recurring expense of 1.5%**
5. The Mutual Fund must generate **18.43% (16.93 + 1.5) return annually** to meet Mr. A's desired return of **16%** after deducting all expenses.

$$\text{Formula for Required Fund Return} = \left(\frac{1}{1 - \text{initial expenses}} \times r_1 \right) + \text{recurring expenses}$$

$$= \left(\frac{1}{1 - 5.5\%} \times 16\% \right) + 1.5\% = 18.43\%$$

4. Mutual Fund Plans: Dividend Reinvestment, Bonus, and Growth Plans

1. **Dividend Reinvestment Plan** : In a Dividend Reinvestment Plan, the mutual fund declares dividends, but instead of paying them to the investor, the dividends are reinvested in the fund to buy additional units.
2. **Bonus Plan** : In a Bonus Plan, the mutual fund issues **free additional units** to the investor as a bonus instead of paying dividends.
3. **Growth Plan** : In a Growth Plan, no dividends or bonuses are declared. All profits are **reinvested** back into the fund, causing the NAV to increase over time.

Example 3 : A mutual fund company introduces 3 schemes: Dividend Plan (Plan-D), Bonus Plan (Plan-B) and Growth Plan (Plan-G). The face value of a unit is ₹10. On 1-4-2005, Mr. K invested ₹2,00,000 each in Plan-D, Plan-B and Plan-G when the NAV was ₹38.20, ₹35.60 and 34.50 respectively. All plans matured on 31-3-2009.

Date	Dividend %	Bonus Ratio	NAV - Plan D (₹)	NAV - Plan B (₹)	NAV - Plan G (₹)
30-09-2005	10	-	39.10	35.60	36.70
30-06-2006	-	1:5	41.15	36.25	38.90
31-03-2007	15	-	44.20	33.10	41.30
15-09-2008	-	1:8	45.05	37.25	44.20
27-01-2009	16	-	44.80	39.10	49.80
31-03-2009	-	-	47.40	39.70	55.60

Calculate the effective yield per annum for all three plans

Solution :

i) Dividend Reinvestment Plan

$$\text{No of units purchased of Plan D} = \frac{200000}{38.20} = 5235.60 \text{ units}$$

Date	Units Held	Dividend %	Dividend Amount (₹) (Units x Face Value x Dividend %)	Reinvest-ment Rate (NAV)	New Units Acquired (Dividend/ NAV)	Total Units Held
30-09-05	5,235.60	10%	5,235.60	39.10	133.90	5,369.50
31-03-07	5,369.50	15%	8,054.25	44.20	182.22	5,551.72
27-01-09	5,551.72	16%	8,882.75	44.80	198.28	5,750.00

∴ Total Redemption Amount (5750 units x 47.40)	= 2,72,550
(Less) Security Transaction Tax (0.2 % of Gross Redemption Amount)	= (545.10)
(Less) STCG {198.28 units x (47.40 – 44.80) x 10%}	= (51.55)
(Less) Buying Price	= (200000)
∴ Profit	= 71,953.35

$$\therefore \text{Yield \% pa} = \frac{\text{total profit}}{\text{Initial Investment}} \times 100 \times \frac{12 \text{ months}}{\text{Holding Period}} = \frac{71953.35}{200000} \times 100 \times \frac{12 \text{ months}}{48 \text{ months}} = 8.99\% \text{ p.a.}$$

ii) Bonus Plan

$$\text{No of units purchased of Plan D} = \frac{200000}{35.60} = 5617.98 \text{ units}$$

5617.98	1:5	1123.60	6741.58
6741.58	1:8	842.70	7584.28

∴ Total Redemption Amount (7584.28 units x 39.70)	= 3,01,095.92
(Less) Security Transaction Tax (0.2 % of Gross Redemption Amount)	= (602.19)
(Less) STCG {842.70 units x (39.70 – 37.25) x 10%}	= (206.46)
(Less) Buying Price	= (200000)
∴ Profit	= 1,00,287.27

$$\therefore \text{Yield \% pa} = \frac{\text{total profit}}{\text{Initial Investment}} \times 100 \times \frac{12 \text{ months}}{\text{Holding Period}} = \frac{100287.27}{200000} \times 100 \times \frac{12 \text{ months}}{48 \text{ months}} = 12.535 \% \text{ p.a.}$$

iii) Growth Plan

$$\text{No of units purchased of Plan G} = \frac{200000}{34.50} = 5797.10 \text{ units}$$

∴ Total Redemption Amount (5797.10 units x 55.60)	= 3,22,318.76
(Less) Security Transaction Tax (0.2 % of Gross Redemption Amount)	= (644.64)
(Less) STCG	= (NIL)
(Less) Buying Price	= (200000)
∴ Profit	= 1,21,674.12

$$\therefore \text{Yield \% pa} = \frac{\text{total profit}}{\text{Initial Investment}} \times 100 \times \frac{12 \text{ months}}{\text{Holding Period}} = \frac{121674.12}{200000} \times 100 \times \frac{12 \text{ months}}{48 \text{ months}} = 15.21 \% \text{ p.a.}$$

Example 4 (Reverse NAV)

Mr. X, an investor, invested in both schemes. The following details (except the issue price) are provided:

Date	Dividend %	Bonus Ratio	NAV	NAV
			Dividend Plan	Bonus Plan
01.04.2015	-	-	?	?
31.12.2016	-	1:4 (1 unit on 4 held)	47	47
31.03.2017	12	-	48	48
31.03.2018	10	-	50	50
31.12.2018	-	1:5 (1 unit on 5 held)	46	46
31.03.2019	15	-	45	45
31.03.2020			49	44

You are required to calculate the issue price of both the schemes as on 01.04.2015.

	Dividend Reinvestment Plan	Bonus Plan
Initial Investment	920000	1000000
Average profit p.a.	27748.60	6.40%

Solution - You can solve Reverse NAV Question in the same way as done in previous example by taking opening units as x

I) Dividend Plan

Opening Investment = 9,20,000 , Profit in 5 yrs (27748.6 x 5) = 1,38,743 ∴ Closing NAV = 10,58,743

Since, Closing NAV per unit = 49 per unit ∴ Closing units = $\frac{1058743}{49} = 21,607 \text{ units}$

Let, the opening units be x (face value = ₹ 10)

Date	Units Held	Dividend %	Dividend Amount (₹) (Units x Face Value x Dividend %)	Reinvest-ment Rate (NAV)	New Units Acquired (Dividend/ NAV)	Total Units Held
31-03-17	x	12%	1.2x	48	.025x	1.025x
31-03-18	1.025x	10%	1.025x	50	.0205x	1.0455x
31-03-19	1.0455x	15%	1.56825x	45	.03485x	1.08035x

$$\therefore \text{Closing units} = 1.08035x = 21607 \text{ units} \quad \therefore x = \frac{21607}{1.08035} = 20000 \text{ units}$$

∴ Opening units = 20,000, and since Opening Investment = 9,20,000

$$\therefore \text{Op. NAV per unit} = \frac{920000}{20000} = 46 \text{ per unit}$$

Alternatively applying formula, **Additional units = closing units x $\frac{\text{Dividend Reinvested}}{\text{NAV per unit} + \text{Dividend Reinvested}}$**

Period	Closing Units	Div. Rate	Unit Value	Div	NAV	New Units = $\text{closing units} \times \frac{\text{Div Reinvested}}{\text{NAV} + \text{Div Reinvested}}$	Balance Units
31.03.19	21,607	15%	10	1.5	45	$21607 \times \frac{1.5}{46.5} = 697 \text{ units}$	20,910 units
31.03.18	20,910	12%	10	1.2	48	$20910 \times \frac{1.2}{49.2} = 410 \text{ units}$	20,500 units
31.03.17	20,500	10%	10	1.0	46	$20500 \times \frac{1.0}{47} = 500 \text{ units}$	20,000 units

ii) Bonus Plan

Op. Investment = 10,00,000 ; Profit in 5 yrs ($1000000 \times 6.4\% \times 5$) = 3,20,000 $\therefore$ Closing NAV = 13,20,000

Since, Closing NAV per unit = 44 per unit $\therefore$ Closing units = $\frac{1320000}{44} = 30,000 \text{ units}$

31.12.18 – Bonus issue (1 units for every 5 held i.e. total 6 units after Bonus issue)

$\therefore$ Units held before Bonus issue = $30000 \times \frac{5}{6} = 25000 \text{ units}$

31.12.16 – Bonus issue (1 units for every 4 held i.e. total 5 units after Bonus issue)

$\therefore$ Units held before Bonus issue = $25000 \times \frac{4}{5} = 20000 \text{ units}$

$\therefore$ Opening NAV = $\frac{\text{Opening Investment}}{\text{Opening units}} = \frac{1000000}{20000} = 50 \text{ per unit}$

Shortcut

Op. units = closing units $\times \frac{\text{units held}}{\text{units held} + \text{Bonus}} \times \frac{\text{units held}}{\text{units held} + \text{Bonus}} \times \dots = (30000 \text{ uts} \times \frac{5}{5+1} \times \frac{4}{4+1}) = 20000 \text{ units}$

5. Holding Period Return (Always calculated from the POV of investors)

The Holding Period Return (HPR) measures the total return earned on an investment over the entire period it was held. It is expressed as a percentage and accounts for all forms of income generated during the holding period, such as dividends, interest, and capital gains or losses.

Total Yield = Income Received + Capital Gain Received + (Ending Value - Beginning value)

Holding Period Return (HPR) = $\frac{\text{Total Yield}}{\text{Beginning Value}} \times 100$

Effective Yield % p.a. = $\frac{\text{Total Yield}}{\text{Beginning Value}} \times 100 \times \frac{365}{n}$ or Effective Yield % pa = $\text{HPR} \times \frac{365}{n}$

*Where, n = period of holding

OR Calculate Directly, **Return % or Yield % p.a.**

= $\frac{\text{Income distribution} + \text{Capital Gain distribution} + (\text{NAV at End} - \text{NAV at Beginning})}{\text{NAV at Beginning}} \times 100 \times \frac{12 \text{ months}}{n}$

6. Period of Holding (n)

The holding period starts from the date of investment (purchase) and ends on the date of redemption (sale). It is expressed in terms of days, months, or years.

Period of Holding (n) = $\frac{\text{HPR \%}}{\text{Effective yield \% pa}} \times 365 \text{ days}$

Example 5

Amount of investment in MF Scheme = ₹2,00,000, NAV at purchase = ₹10, NAV as on 31.03.2022 = ₹10.50
 Dividend yield (up to 31.03.2022) = 3%, Annualized yield on 31.03.2022 = 9.733%

Calculations:

Number of units purchased = $200000/10 = 20000$ units

Total yield = $\{200000 \times 3\% \} + \{20000 \text{ units} \times (10.50 - 10.00)\} = 16000$

$\therefore$ Holding Period Return (HPR) = $\frac{\text{Total yield}}{\text{Beginning Value}} \times 100 = \frac{16000}{200000} \times 100 = 8\%$

$\therefore$ Holding Period (n) = $\frac{\text{HPR \%}}{\text{Effective yield \% pa}} \times 365 \text{ days} = \frac{8\%}{9.733\%} \times 365 = 300 \text{ days}$

$\therefore$ Date of Original Investment = 31-03-2022 minus 300 days = 04-06-2021

Example 6 : Amount of investment = ₹5,50,000, Dividend received (up to 31.03.2023) = ₹10,000
 NAV on 31.03.2023 = ₹11.50, Holding period = 120 days, Effective annual yield = 19.345% p.a.
 Requirement: Calculate the NAV at the time of purchase.

Solution : Holding period return $(19.345 \times 120/365) = 6.36\%$ of ₹ 550000 = ₹ 34,980

Dividend Received = 10000 $\therefore$ NAV Gain $(34980 - 10000) = 24980$

$\therefore$ Ending NAV Value = $550000 + 24980 = 574980$

$\therefore$ Number of units = $\frac{\text{Ending Value}}{\text{NAV per unit at end}} = \frac{574980}{11.50} = 49998.26 \text{ units}$

$\therefore$ NAV at the time of purchase = $\frac{\text{Amount of Investment}}{\text{NAV per unit at end}} = \frac{550000}{49998.26} = ₹ 11 \text{ per unit}$

Example 7 – Amount invested on 01/07/2012 during IPO = ₹ 1,00,000 (Face Value = ₹10).

On 31/03/13 – Dividend declared @ 10% and his holding period return was 115%.

On 31/03/14 - Dividend declared @ 20%

On 31/03/15 – Investor redeemed all his 11,296.11 units when his entire holding period return was 202.17%

Solution

1.7.07 - No. of units purchased = $₹1,00,000 / ₹10 = 10,000$ units

31.3.08 (Holding Period Return = 115%)

Market value of investment = $₹1,00,000 + 115\% \text{ of } ₹1,00,000 = ₹2,15,000$

Less: Dividend paid $(₹1,00,000 \times 10 \times 10\%) = ₹10,000$

Market value of NAV after Dividend = ₹2,05,000

No. of units = 10,000

$\therefore$ NAV as on 31.3.08 = $₹2,05,000 / 10,000 = ₹ 20.50$

Additional units due to Dividend Reinvestment = $₹10,000 / 20.50 = 487.80$ units

Total units after reinvestment = $10,000 + 487.80 = 10,487.80$ units

31.3.09 - Dividend Paid $(10,487.80 \times 10 \times 20\%) = ₹20,975.60$

This dividend amount of ₹20,975.60 is reinvested at year end NAV (31.3.09) to get additional units of $(11,296.11 - 10,487.80)$ i.e. 808.31 units

$\therefore$ NAV as on 31.3.09 = $\frac{\text{Reinvestment amount}}{\text{Additional units}} = ₹20,975.60 / 808.31 = ₹ 25.95$

31.3.10 - Market value of investment = $₹1,00,000 + 202.17\% \text{ of } ₹1,00,000 = ₹3,02,170$

No. of units = 11,296.11

$\therefore$ NAV as on 31.3.10 = $₹3,02,170 / 11,296.11 = ₹ 26.75$