

COURSE: INVESTMENTS | CHAPTER 4

MUTUAL FUNDS AND OTHER INVESTMENT COMPANIES

Chapter Purpose

This chapter explains how investment companies pool money from many investors and invest it in professionally managed portfolios.

Investment companies

Mutual funds

Net Asset Value

Open-end funds

Closed-end funds

Exchange-Traded Funds

Major fund categories

Active and passive management

Fund fees and expenses

Fund returns

Performance evaluation

Flow of the chapter: Investors → Fund → Diversified portfolio → Returns.

Learning Objectives

1

Explain investment companies

2

Describe pooled investment

3

Calculate Net Asset Value

4

Distinguish open-end and closed-end funds

5

Explain ETFs

6

Identify major mutual-fund categories

7

Compare active and passive funds

8

Explain mutual-fund fees

9

Calculate fund holding-period return

10

Explain benchmark performance

11

Evaluate advantages and limitations

12

Select funds matching objectives

Twelve targets covering structure, valuation, categories, costs and performance.

SECTION I

Investment Companies

Structure · Rationale · Direct vs indirect · Pooling



What Is an Investment Company?



An investment company pools money from many investors and invests it in a portfolio of securities or other eligible assets.

Why Investment Companies Exist

Investment companies can provide:

Professional portfolio management

Diversification

Access to financial markets

Administrative convenience

Economies of scale

Liquidity, depending on structure

Recordkeeping

Investment specialization

Direct vs. Indirect Investing

Direct Investing

- Investor buys securities directly
- Investor → Shares / Bonds
- Full control over each holding
- Investor bears all research and admin

Indirect Investing

- Investor buys shares or units in a fund
- Investor → Fund → Portfolio
- Manager selects the holdings
- Diversification from a small outlay

Pooled Investment — Simple Example

Investors

10,000

Each invests

ETB 10,000

Pooled total

ETB 100,000,000

$$10,000 \times \text{ETB } 10,000 = \text{ETB } 100,000,000$$

The fund can invest ETB 100 million across many securities

Why Pooling Helps Small Investors

A single investor with ETB 10,000 may have limited diversification opportunities. Pooling funds may provide access to:

More securities

Professional analysts

Larger transactions

Lower average administrative cost

Broader geographic exposure

Major Investment Company Structures

Open-End Mutual Funds

Shares issued and redeemed with the fund at NAV-based pricing.

Closed-End Funds

Fixed share count; shares trade between investors on an exchange.

Exchange-Traded Funds

Pooled portfolios traded intraday on an exchange.

Unit Investment Trusts

Fixed portfolios with a defined life, where available.

Legal structure and regulation vary by jurisdiction.

SECTION II

Net Asset Value

Definition · Formula · Worked example · Drivers



What Is Net Asset Value?

Net Asset Value (NAV) represents the value of a fund's net assets per outstanding share or unit. It is one of the most important measures used in investment-fund analysis.

- Derived from the fund's balance sheet at valuation time
- Used for pricing subscriptions and redemptions in open-end funds
- Used as the reference value for closed-end funds and ETFs

$$\text{NAV} = \text{Fund net assets} \div \text{Shares outstanding}$$

NAV Formula

$$\text{NAV} = (\text{Market Value of Assets} - \text{Liabilities}) \div \text{Shares Outstanding}$$

- Market value of fund assets: securities and other holdings, valued currently
- Fund liabilities: payables, accrued expenses and borrowings
- Shares outstanding: units held by investors at the valuation date

NAV tells us how much of the fund's net asset value belongs to each share or unit.

NAV Example

Fund assets

ETB 520m

Fund liabilities

ETB 20m

Shares outstanding

25m

$$\text{NAV} = (520 - 20) \div 25$$

$$\text{NAV} = 500 \div 25$$

$$\text{NAV per Share} = \text{ETB } 20$$

What Can Increase NAV?

NAV may rise because of:

Rising security prices

Interest income

Dividend income

Realized investment gains

Assuming these gains are not fully offset by distributions or expenses.

What Can Reduce NAV?

NAV may decline because of:

Falling security prices

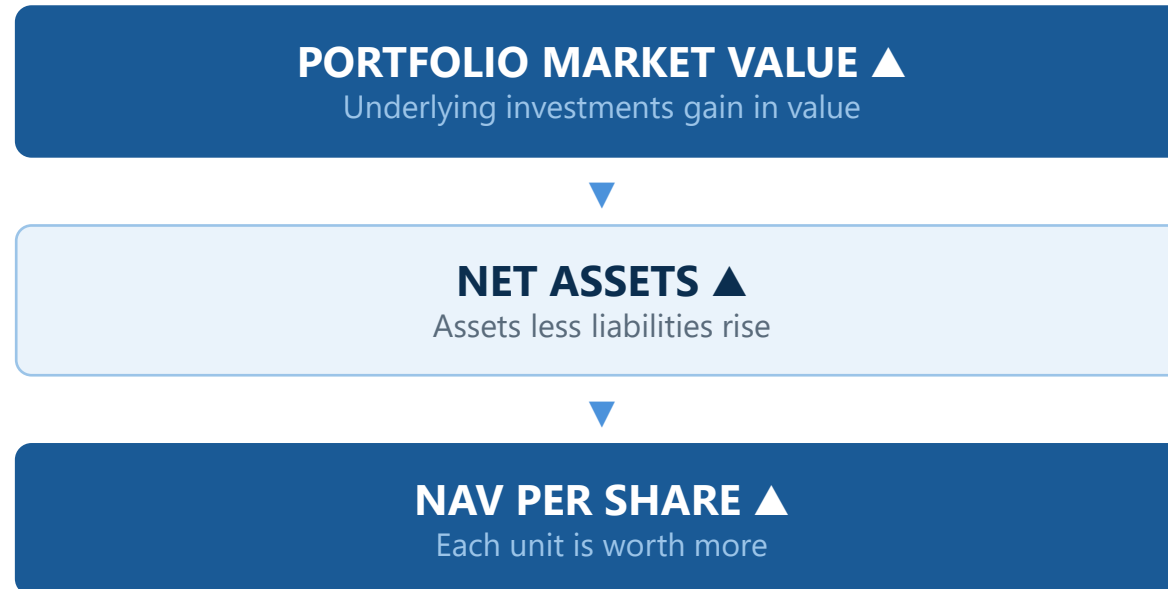
Realized investment losses

Management expenses

Administrative expenses

Other fund liabilities

NAV and Investor Wealth



Assuming other factors remain constant.

SECTION III

Open-End Mutual Funds

Definition · Structure · Subscription · Redemption



What Is a Mutual Fund?

A mutual fund pools investors' money and invests according to a stated:

Investment objective

Strategy

Asset allocation

Risk profile

Investors own shares or units of the fund rather than directly owning each underlying security.

What Is an Open-End Fund?

An open-end fund generally:

Issues new shares when investors contribute money

Redeems shares when investors withdraw

Prices investor transactions based on NAV under applicable rules

The number of shares outstanding can change from day to day.

Open-End Fund Structure

Subscription — New Investor

- Investor delivers cash to the fund
- ↓ FUND
- Fund issues new shares
- Shares outstanding increase

Redemption — Existing Investor

- Investor returns fund shares
- ↓ FUND
- Fund pays redemption proceeds
- Shares outstanding decrease

Transactions occur with the fund itself, priced on NAV.

Open-End Fund Example

NAV per share

ETB 25

Amount invested

ETB 100,000

Fees

Ignored

$$\text{Shares} = 100,000 \div 25$$

Investor receives 4,000 shares

Open-End Fund Redemption

NAV later

ETB 28

Shares owned

4,000

Fees and taxes

Ignored

Redemption value = $4,000 \times 28$

Redemption Value = ETB 112,000

Advantages of Open-End Funds

Potential benefits:

Professional management

Diversification

Convenient subscriptions

Convenient redemptions

Automatic reinvestment

Broad investment choice

Administrative convenience

SECTION IV

Closed-End Funds

Fixed shares · Secondary market · Premium · Discount

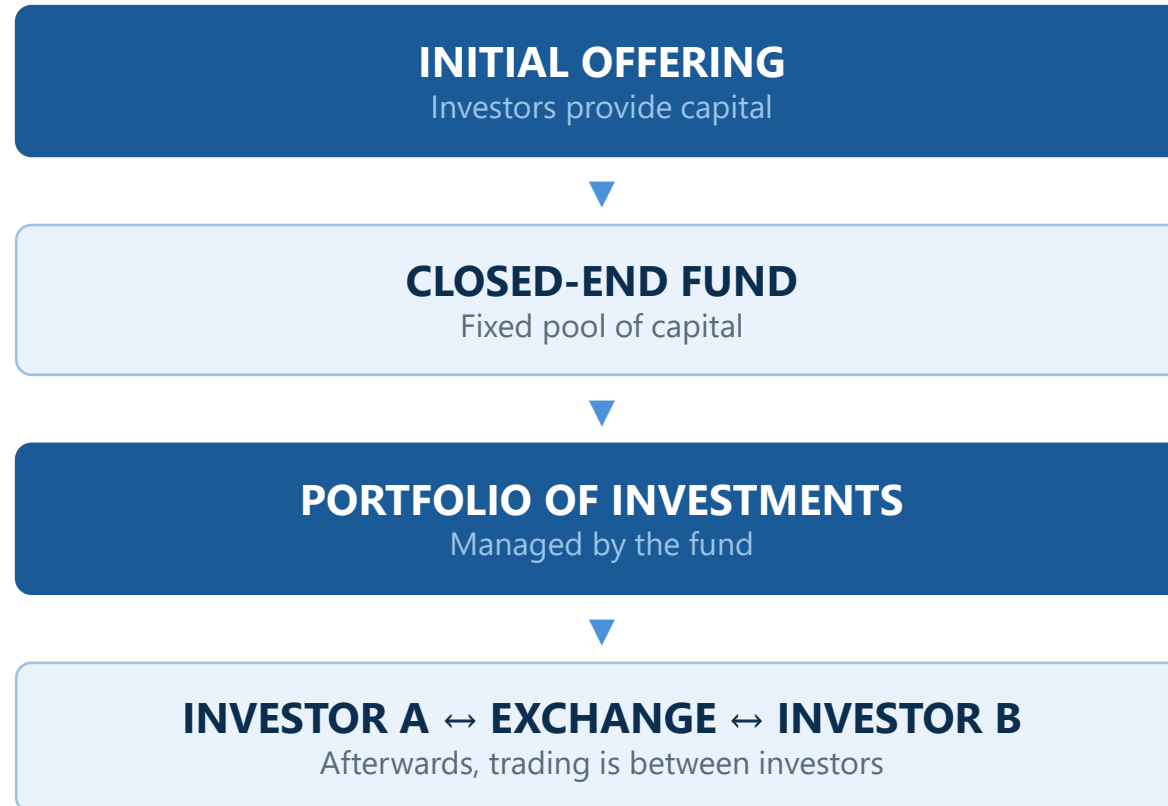
What Is a Closed-End Fund?

A closed-end fund generally raises capital by issuing a fixed number of shares in an initial offering.

- Capital raised once, at launch
- The fund itself does not routinely issue or redeem shares
- Share price is set by supply and demand on the exchange

After issuance, investors trade the shares with one another in the secondary market

Closed-End Fund Structure



The fund's portfolio is separate from secondary-market trading in its shares.

Closed-End Fund: NAV vs Market Price

NAV per Share

- Value of underlying net assets
- Assets less liabilities per share
- Calculated from the portfolio
- Independent of trading activity

Market Price

- Price at which fund shares trade
- Set by exchange supply and demand
- Observable throughout the session
- May differ from NAV

Closed-end funds have two important values, and these may differ.

Trading at a Premium

NAV

ETB 20

Market price

ETB 22

Difference

+ETB 2

$$\text{Premium} = (22 - 20) \div 20 \times 100$$

The fund trades at a 10% premium to NAV

Trading at a Discount

NAV

ETB 20

Market price

ETB 18

Difference

–ETB 2

$$\text{Discount} = (20 - 18) \div 20 \times 100$$

The fund trades at a 10% discount to NAV

Why Premiums and Discounts Occur

Possible causes include:

Investor sentiment

Manager reputation

Expected future performance

Liquidity

Fees

Market conditions

Distribution policy

Demand and supply

Open-End vs Closed-End Funds

Open-End Fund	Closed-End Fund
Shares created and redeemed	Shares generally fixed
Transactions with the fund	Trades between investors
Priced on NAV	Market price may differ from NAV
No ordinary exchange trading required	Usually exchange traded
Premium/discount less central	Premium/discount important

SECTION V

Exchange-Traded Funds

Definition · Trading · Creation/redemption · Risks



What Is an ETF?

An Exchange-Traded Fund (ETF) is a pooled investment vehicle whose shares trade on an exchange throughout the trading day. ETFs may track:

Stock indexes

Bond indexes

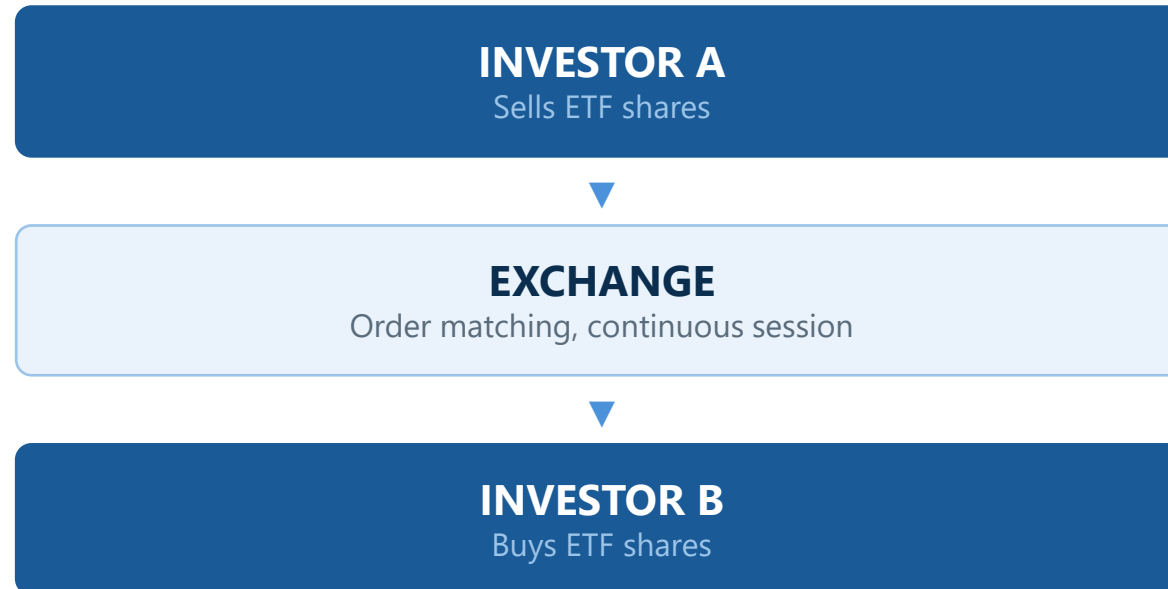
Sectors

Commodities

International markets

Investment themes

How ETF Trading Works



ETF market prices may change throughout the trading day.

ETF vs Conventional Open-End Mutual Fund

Conventional Open-End Fund

- Investor transacts with the fund
- NAV-based pricing
- Typically priced once per day
- No brokerage or spread on fund dealing

ETF

- Investor trades on an exchange
- Market prices, set continuously
- Priced throughout the trading day
- Brokerage and bid–ask spread apply

ETF Creation and Redemption Concept

Large authorized market participants may exchange baskets of underlying assets for ETF shares, and vice versa.

- Creation: basket of securities delivered → new ETF shares issued
- Redemption: ETF shares returned → basket of securities delivered
- Price gaps create arbitrage incentives that narrow the gap

Arbitrage helps keep ETF market price close to NAV

Potential Advantages of ETFs

ETFs may offer:

Diversification

Intraday trading

Transparency

Market access

Potentially low expense ratios

Trading flexibility

ETF Risks and Limitations

Potential risks include:

Market risk

Tracking error

Bid–ask spread

Brokerage cost

Liquidity risk

Premium or discount to NAV

Complexity of leveraged or specialized ETFs

Open-End vs Closed-End vs ETF

Feature	Open-End Fund	Closed-End Fund	ETF
Shares	Variable	Usually fixed	Creation/redemption
Investor trades	With the fund	On market	On exchange
Pricing	NAV-based	Market price	Market price
Intraday trading	Generally no	Yes	Yes
Premium/discount	Usually limited	Commonly possible	Often arbitrated

SECTION VI

Major Mutual-Fund Categories

Money market · Bond · Equity · Balanced · Index · Specialized



Funds by Investment Objective

Money-Market Funds

Short-term debt; liquidity and capital preservation.

Bond Funds

Fixed-income portfolios across issuers and maturities.

Equity Funds

Primarily stocks; growth and/or dividend income.

Balanced Funds

Mix of equities, bonds and cash in one portfolio.

Index Funds

Track a stated benchmark rather than beat it.

Specialized Funds

Sector, theme or region-focused exposure.

Funds are categorized by the assets they hold and the objectives they pursue.

Money-Market Funds

Money-market funds invest primarily in short-term debt instruments. Objectives often emphasize:

Liquidity

Capital preservation

Current income

Risk is generally lower than equity funds, but money-market funds are not universally risk-free.

Bond Funds

Bond funds invest mainly in fixed-income securities. Possible categories:

Government bond funds

Corporate bond funds

Short-duration funds

Long-duration funds

High-yield funds

International bond funds

Risks of Bond Funds

Bond funds can face:

- Interest-rate risk
- Credit risk
- Inflation risk
- Liquidity risk
- Currency risk
- Reinvestment risk

A bond fund has no guaranteed maturity value like an individual bond held to maturity

Equity Funds

Equity funds invest primarily in stocks. Objectives may include:

Capital growth

Dividend income

Growth and income

Their value generally fluctuates with equity-market conditions.

Equity Fund Categories

Company Size

Large, mid and small capitalization mandates.

Growth Style

Higher expected earnings growth, often richer valuations.

Value Style

Securities seen as inexpensive relative to fundamentals.

Industry or Sector

Concentrated exposure to one part of the market.

Geography

Domestic, regional, international or global.

Dividend Strategy

Emphasis on distribution-paying companies.

Balanced Funds

Equities

Growth engine of the portfolio.

Bonds

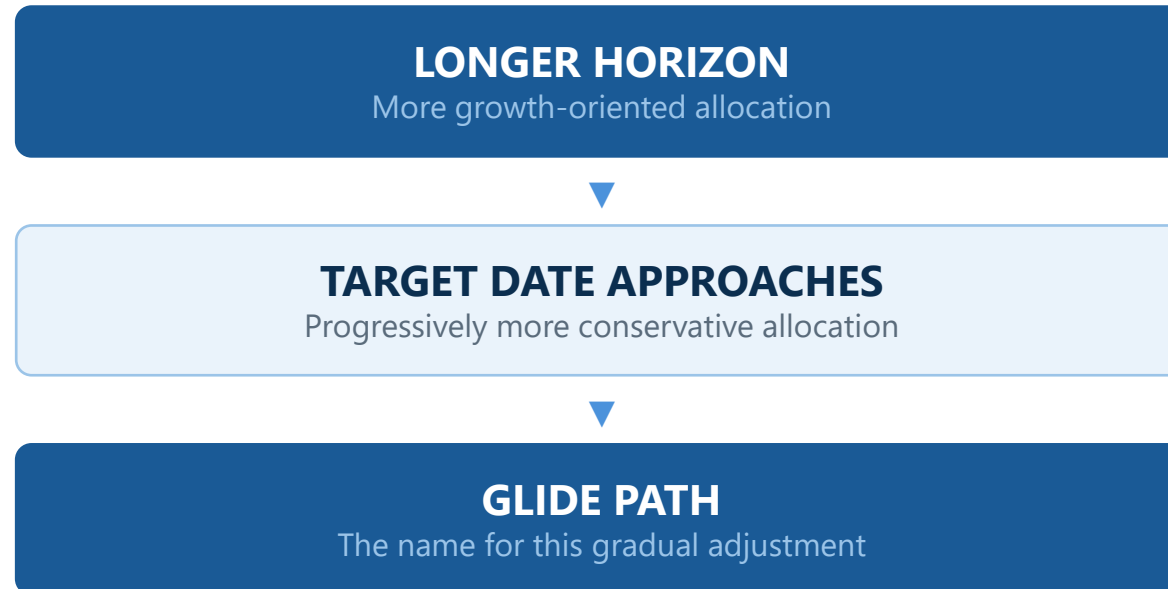
Income and volatility dampening.

Cash

Liquidity and flexibility.

Objective: combine Growth + Income + Risk Management in a single vehicle.

Target-Date and Lifecycle Funds



Target-date funds generally adjust asset allocation as the target date approaches.

Specialized Funds

Specialized funds may focus on:

Technology

Healthcare

Energy

ESG themes

Emerging markets

Real estate

Commodities

Potential benefit: focused exposure. Potential risk: greater concentration.

SECTION VII

Active and Passive Management

Active funds · Index funds · Tracking error



Actively Managed Funds

Active managers attempt to outperform a benchmark through:

- Security selection
- Sector allocation
- Market analysis
- Portfolio timing
- Research

Goal: earn superior risk-adjusted return after costs

Index Funds

An index fund seeks to replicate the performance of a selected benchmark. Examples may track:

Broad stock market

Bond market

Sector index

International index

Active vs Index Funds

Active Fund	Index Fund
Seeks to outperform	Seeks to track
Security selection important	Benchmark rules important
Usually greater research activity	Generally simpler
Often higher costs	Often lower costs
Manager risk	Tracking error

Tracking Error

Tracking error reflects how closely a fund follows its benchmark. Differences may result from:

- Fees
- Trading costs
- Cash holdings
- Sampling
- Portfolio restrictions
- Timing

Ideal index tracking: Fund return $\approx$ Benchmark return

SECTION VIII

Mutual-Fund Costs

Why costs matter · Expense ratio · Loads · Long-term impact



Why Fund Costs Matter



Even apparently small annual expenses can significantly reduce long-term accumulated wealth — evaluate performance net of costs.

Major Fund Costs

Depending on the fund, costs may include:

Management fees

Administrative expenses

Distribution expenses

Sales charges

Redemption fees

Trading costs

Other operating expenses

Expense Ratio

$$\text{Expense Ratio} = \frac{\text{Annual Operating Expenses}}{\text{Average Net Assets}}$$

- Captures recurring fund operating expenses as a percentage of assets
- Excludes one-off sales loads, which are charged separately
- Deducted from fund assets, so returns are reported net of it

A key comparison metric when screening funds with similar objectives.

Expense Ratio Example

Average net assets

ETB 500m

Operating expenses

ETB 7.5m

$$\text{Expense Ratio} = 7.5 \div 500 \times 100$$

$$\text{Expense Ratio} = 1.5\%$$

Long-Term Effect of Fees

Fund A — Annual expense 0.5%

- Same gross return as Fund B
- More return compounds for the investor
- Gap widens with each year held
- Favoured over long horizons

Fund B — Annual expense 2.0%

- Same gross return as Fund A
- 1.5% more lost to costs each year
- Compounding works against the investor
- Large wealth shortfall over decades

Over many years, the higher expense can create a large difference in accumulated investor wealth.

Sales Loads

Front-End Load

A commission charged when the investment is made, reducing the amount invested.

Back-End / Deferred Load

Charged when redeeming, under specified conditions; often declines over time.

No-Load Fund

No traditional sales load, though other expenses may still apply.

Some funds charge sales commissions in addition to recurring operating expenses.

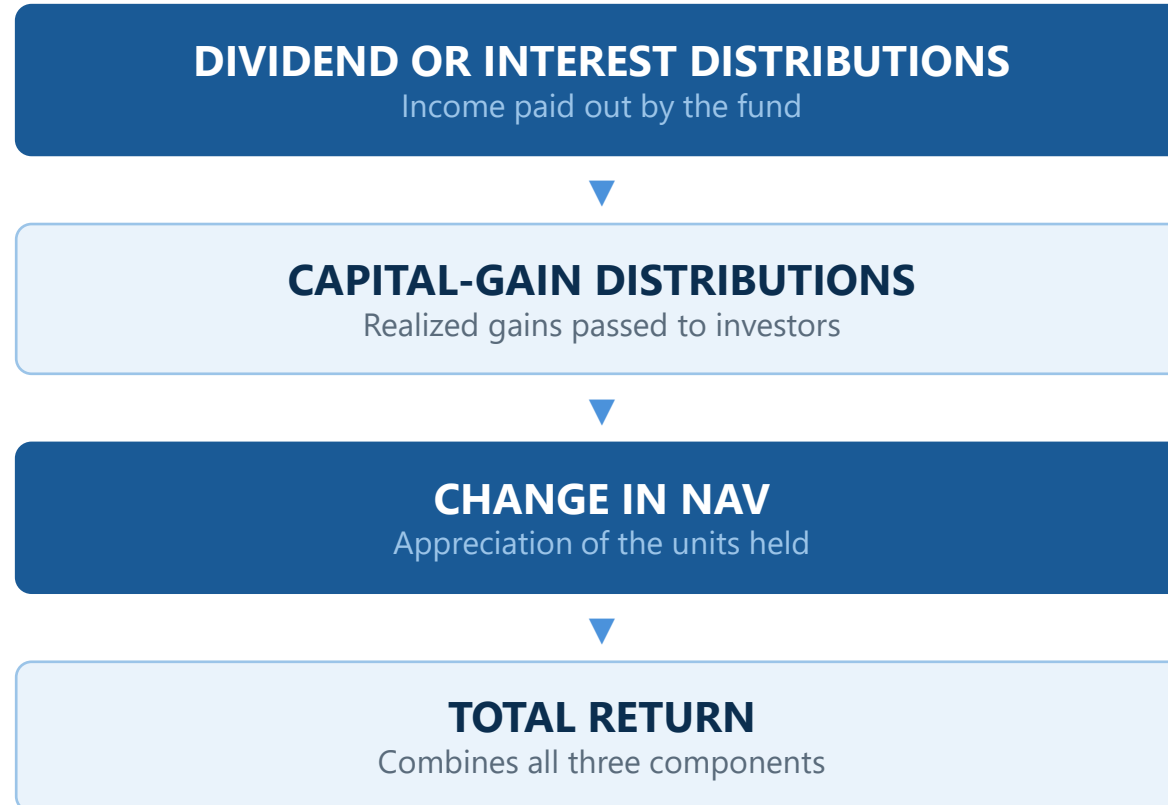
SECTION IX

Fund Returns

Sources of return · Holding-period return · Worked example



Sources of Fund Return



Fund Holding-Period Return

$$R = (NAV_1 - NAV_0 + D + CG) \div NAV_0$$

- NAV_0 = beginning net asset value per share
- NAV_1 = ending net asset value per share
- D = income distribution per share
- CG = capital-gain distribution per share

Total return over the holding period, expressed relative to the starting NAV.

Fund Return Example

Beginning NAV

ETB 20

Ending NAV

ETB 22

Income dist.

ETB 0.80

Capital-gain dist.

ETB 0.20

$$R = (22 - 20 + 0.80 + 0.20) \div 20$$

$$R = 3.00 \div 20$$

Total Holding-Period Return = 15%

SECTION X

Fund Performance

Evaluation questions · Benchmarking



How Should Fund Performance Be Evaluated?

Do not ask only: what return did the fund earn? Also ask:

- How much risk was taken?
- What benchmark is appropriate?
- What fees were charged?
- Was performance consistent?
- Did the fund follow its objective?
- Was the result repeatable or temporary?

Return alone is not performance — judge it against risk, fees and benchmark

Benchmarking

Equity Fund

- Compared with a relevant equity-market index
- Reflects the fund's market and style
- Highlights value added or lost by the manager

Bond Fund

- Compared with a relevant bond-market index
- Matched on duration and credit quality
- Isolates manager skill from market movement

Key rule: use a benchmark consistent with the fund's investment strategy.

Practical Exercise

Investor Profile

- Age: 30
- Capital: ETB 500,000
- Horizon: 20 years
- Risk tolerance: Moderate to high
- Objective: Long-term growth

Available Funds

- Money-market fund
- Government bond fund
- Broad equity index fund
- Actively managed equity fund
- Balanced fund

Student Tasks

- Which fund best matches long-term growth?
- Which provides greatest liquidity?
- Which may be most volatile?
- Compare active vs passive alternatives
- Identify the major fees to investigate
- Select an appropriate benchmark
- Would combining funds improve diversification?

Use the investor decision matrix: match objective → structure → costs → benchmark.

Key Takeaways

- ✓ Investment companies pool money from multiple investors.
- ✓ NAV measures a fund's net assets per share or unit.
- ✓ Closed-end fund shares trade in secondary markets.
- ✓ ETFs combine pooled portfolios with exchange trading.
- ✓ Active funds seek to outperform benchmarks; index funds seek to track them.
- ✓ Fund fees reduce investor returns; expense ratios matter over long horizons.
- ✓ Evaluate performance against risk, fees, objectives and a fitting benchmark.
- ✓ Pooled investment can provide diversification and professional management.
- ✓ Open-end funds issue and redeem shares with investors.
- ✓ Closed-end funds may trade at premiums or discounts to NAV.
- ✓ Categories: money-market, bond, equity, balanced, index, specialized.
- ✓ Tracking error measures deviation from benchmark performance.
- ✓ $\text{Fund return} = \text{income} + \text{capital-gain distributions} + \text{NAV change}.$

RISK AND RETURN: PAST AND PROLOGUE



Holding-period returns

Income yield

Capital gains

Arithmetic average return

Geometric average return

Expected return

Variance

Standard deviation

Probability distributions

Historical risk and return

Risk premiums

Nominal vs real returns

Inflation

Reward-to-volatility measures

Value at Risk

Expected Shortfall

Long-term investment performance

Limitations of historical evidence

THANK YOU

Questions and Discussion

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Stocks

Bonds

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