LM03 · PORTFOLIO MANAGEMENT · CFA LEVEL I

Portfolio Management: An Overview

The portfolio approach, portfolio management process, types of investors, pensions, and pooled investment products

What This Reading Covers

This module describes the **portfolio approach** to investing (vs. evaluating each security in isolation), the 3-step portfolio management process (Planning → Execution → Feedback), the distinctive needs of different investor types, pension plans (DB vs DC), and the major pooled investment vehicles (mutual funds, ETFs, SMAs, hedge funds, PE/VC).

Learning Outcome Statements

LOS a	Describe the portfolio approach to investing
LOS b	Describe the steps in the portfolio management process
LOS c	Describe types of investors and distinctive characteristics and needs of each
LOS d	Describe defined contribution and defined benefit pension plans
LOS e	Describe aspects of the asset management industry
LOS f	Describe mutual funds and compare them with other pooled investment products

Exam Tip: Key memorables: the two dominance rules, the 3-step portfolio management process, the DB/DC distinction, and the characteristics table for the six investor types.

LOS A · PORTFOLIO APPROACH TO INVESTING

The Portfolio Approach

Select securities **with respect to their contribution to the characteristics of the whole portfolio** rather than evaluating each in isolation.

Two Dominance Rules

1. Given two assets with the **same return**, select the one with the **lowest risk**.
2. Given two assets with the **same risk**, select the one with the **higher return**.

Key Point

Portfolio management **primarily involves reducing risk rather than increasing return**.

Diversification Benefits

1. Portfolios may offer **equivalent returns with lower volatility** vs. individual securities.
2. **Asset-class selection** (weighting) is more important than security selection in explaining return differences.

Diversification Ratio

$$Diversification Ratio = \sigma_{equal-weighted portfolio} / \sigma_{random component (single security)}$$

Lower ratio = greater risk-reduction benefit from diversification.

WORKED EXAMPLE **Computing the Diversification Ratio**

GIVEN

Average σ of n individual stocks = **25%**. σ of an equal-weighted portfolio of those n stocks = **18%**.

DIVERSIFICATION RATIO

18 / 25 = **0.72**. The portfolio's risk is 72% of the average single-stock risk — a 28% reduction from diversification.

Limits to Diversification

Diversification cannot eliminate **systematic risk**. In adverse markets, correlations tend to move toward 1, so diversification does not necessarily provide downside protection.

LOS A · DOMINANCE RULES IN ACTION

Comparing Two Portfolios

WORKED EXAMPLE

Same Return, Different Risk — Portfolio A vs. B

GIVEN — TWO ASSET MIXES (FROM MM SOURCE)

ASSET CLASS	Σ	MIX A	MIX B
Cash	10%	5%	5%
Fixed-income	6%	70%	25%
Equities	25%	25%	70%

RETURN OUTCOMES PER $1,000 (FROM MM)

Mix A: Cash $5.50 + Fixed - Income$56.00 + Equities $75.00 =136.50 → return **13.65%**

Manager X: $154.50 → **15.45%**

Manager Y: $136.66 → **13.66%**

CONCLUSION

Case 1: $E(R_A) = E(R_B)$ but $\sigma_A < \sigma_B \Rightarrow$ A dominates.

Case 2: $\sigma_A = \sigma_B$ but $E(R_A) > E(R_B) \Rightarrow$ A dominates.

Dominance is the operational definition of "portfolio superiority".

LOS B · 3-STEP PROCESS

The Portfolio Management Process

① PLANNING

KYC — understand client needs.
IPS — prepare Investment Policy Statement.

② EXECUTION

Asset allocation
Security analysis
Portfolio construction

③ FEEDBACK

Monitoring & rebalancing
Performance measurement & reporting

Planning — What the IPS Contains

Objectives (return): safety · income · growth

Constraints: liquidity, taxes, time horizon, legal/regulatory, unique circumstances

Performance benchmark — such as an index return.

Must be revised as client circumstances change (by chance or simply over time) — at least every few years.

Execution

TOP-DOWN

Analyze **economy** → **industry** → **security**. More rebalancing as economy and industry change.

BOTTOM-UP

Identify individual securities that are undervalued; held over several cycles.

Rebalancing

1. **Fix drift** — prices drift from the asset allocation mix.
2. **Dynamic rebalancing** — get back to the original mix.
3. **Tactical rebalancing** — intentional deviations from the mix.

LOS C · INDIVIDUAL AND INSTITUTIONAL INVESTORS

Types of Investors & Their Needs

INVESTOR TYPE	RISK TOLERANCE	HORIZON	LIQUIDITY	INCOME NEEDS
Individuals	Varies	Varies	Varies	Varies
DB Pensions	High	Long	Low	Depends on age profile
Banks	Low	Short	High	Pay interest
Endowments/Foundations	High	Long (perpetual)	Low	Spending level
Insurance (Life vs. P&C)	Low	Long / Short	High	Low
Mutual Funds	Varies	Varies	High	Varies

Individual Investors

Range from safety to growth · from short-term to 40+ years · from risk-averse to risk-tolerant. In many countries, special retirement accounts allow tax-deferral until withdrawal.

Endowments & Foundations

Preservation of capital on an inflation-adjusted basis; **perpetual life** ⇒ very long-term, **moderate to high risk tolerance**, low liquidity needs, income + growth objectives.

Sovereign Wealth Funds

Government-owned investment funds — usually charged with investing revenues from a finite source (e.g. oil) to benefit future generations, or to manage forex reserves.

Insurance Companies

Low risk tolerance · high to moderate liquidity · time horizon is policy-type dependent (life insurers have long horizons; P&C insurers short). Preservation of capital priority: *Safety* > *Growth* > *Income*.

LOS D · DB VS. DC PENSION PLANS

Defined Benefit vs. Defined Contribution

DEFINED BENEFIT (DB)

Employer has an obligation to pay a pre-specified benefit on retirement.

Example: 2% per year of service × average of the last 5 years' wages.

Investment risk lies with **the employer/plan**. Long-horizon, low-liquidity portfolio.

DEFINED CONTRIBUTION (DC)

Specifies how much goes into the plan; employer contributes a % or fixed $.

Benefit depends on:

- Contributions (employer + employee)
- Length of investment
- Investment performance

Investment risk lies with **the employee**.

Glide Path (Target-Date Funds)

Typical lifecycle allocation shifts from equity-heavy when young to bond-heavy near retirement. E.g., age 25: 90% equities / 10% bonds → age 65: 10% equities / 90% bonds.

QUIZ 1 · CHECKPOINT

Test Your Understanding: Approach, Process, Investors

Q1. The diversification ratio for an equal-weighted portfolio of stocks with avg individual σ = 25% and portfolio σ = 18% is closest to:

Q2. According to the source materials, portfolio management is primarily about:

Q3. Under a defined contribution (DC) pension plan, investment risk is borne by:

Q4. Which investor type typically has *high* liquidity needs and a *short* investment horizon?

Q5. The primary purpose of the Investment Policy Statement (IPS) is to:

LOS E · INDUSTRY OVERVIEW

The Asset Management Industry

Size & Structure

Global AUM ≈ **$79.2 trillion**, with **~80%** in North America / Europe. Buy-side firms represent investors; sell-side firms are broker/dealers and research houses.

Active vs. Passive

	ACTIVE	PASSIVE
AUM share	~80%	~20%
Revenue share of industry	**~43%**	~6%
Goal	Outperform a benchmark via manager skill	Replicate benchmark performance, minimize costs

Passive holds ~20% of AUM but a far smaller share of revenue because fees are much lower.

Classifications of Asset Managers

Full-Service
Various investment styles and asset classes

Specialist
Focus on a single style or asset class

Multi-Boutique
Holding company with numerous specialist managers

Traditional vs. Alternative

TRADITIONAL

Long-only equity, fixed-income, multi-asset strategies.

ALTERNATIVE

Hedge funds, private equity, venture capital, real estate, commodities.

Ownership & Trends

1. **Majority privately owned** — limited liability corporations or partnerships; some publicly traded.
2. Trend: **growth of passive investing**.
3. **Big Data** — structured + unstructured (social media, satellite imagery/geo-location).

4. **Robo-advisors** — automation & investment algorithms.
5. Growing demand from mass-affluent and younger investors, **lower fees**, new entrants.

Smart Beta

Portfolio weighting based on transparent rules-based exposure to a particular market risk factor, rather than standard benchmark weighting. Bridges passive (rules-based) and active (factor-targeted).

LOS F · MUTUAL FUNDS

Pooled Investments: Mutual Funds

Pooled investments are **managed funds** where investors pool capital and the fund buys assets; investors hold units representing claims on those assets.

Mutual Funds — Basics

1. Serve both **individual and institutional** investors.
2. Benefits: **diversification & professional management**.
3. All income flows through to unit holders.
4. Value = **Net Asset Value (NAV)**, calculated daily.

Open-Ended vs. Closed-End Funds

OPEN-ENDED

Accepts new funds and issues new units at NAV; redeems all units at NAV. Must maintain **ready liquidity** — cannot be 100% invested.

CLOSED-END

Fixed number of units/shares; shares are exchange-traded. Can trade at premium, discount, or equal to NAV.

Load vs. No-Load

LOAD FUNDS

Annual fee + buy/sell fees.

NO-LOAD FUNDS

Annual fee only, based on NAV (= AUM).

Types of Mutual Funds

TYPE	HOLDINGS
Money Market	Tax-free or taxable short-term instruments
Bond Funds	Bonds and preferreds
Equity/Stock Funds	Stocks, indices
Hybrid/Balanced	Stocks & bonds

Active MFs: higher MERs, attempt to beat benchmark, higher turnover, faster capital-gains realization.
Passive MFs (index funds): low MERs, minimal turnover.

LOS F · EXCHANGE-TRADED FUNDS

ETFs vs. Index Mutual Funds

ETFs issue shares that trade on an exchange and are **passive** — designed to track some asset class or index. Tend to stay very close to NAV.

FEATURE	ETF	INDEX MUTUAL FUND
MER	Lower MER	Higher MER
Trading costs	Brokerage costs on buy/sell	No brokerage costs
Buy/Sell mechanism	Open market	Directly with fund
Shorting/Margin	Allowed	Long-only
Dividends	Paid out (tax advantage)	Reinvested
Pricing	Continuous	One price daily

ETFs' tax advantage comes from paying out dividends rather than reinvesting them at the fund level, minimizing within-fund capital gains distributions.

LOS F · OTHER POOLED PRODUCTS

SMAs, Hedge Funds, Private Equity & Venture Capital

Separately Managed Account (SMA) — "Wrap Account"

Non-pooled — client actually *owns* the underlying assets.

- More control over timing of capital gains.
- Higher buy-in threshold.
- IPS-driven; portfolio manager manages per objectives & constraints.

Hedge Funds

1. **Absolute vs. relative return** — aim for positive returns regardless of market direction.
2. Use **short-selling, leverage, derivatives**.
3. **Minimal regulation**; exempt from most reporting requirements.
4. **Accredited investors only**.
5. Lock-up periods, redemption dates.
6. **Management fee + performance fee** (may include hurdle rate + high-water mark).

Hedge Fund Strategies

- Convertible Arbitrage
- Dedicated Short Bias
- Emerging Market
- Equity Market Neutral
- Event Driven

- Fixed-Income Arbitrage
- Global Macro
- Long/Short

Buyout (LBO) and Venture Capital Funds

1. **LBO funds** buy public companies, restructure, and re-IPO. Significant debt used.
2. **VC** — provides financing to start-ups.
3. Both take an **active role in management**.

4 **Exit is critical** since all investments are illiquid.

QUIZ 2 · CHECKPOINT

Test Your Understanding: Industry & Products

Q6. Which statement about open-end mutual funds is *most accurate*?

Q7. Compared with an index mutual fund, an ETF typically offers:

Q8. Active managers represent approximately what share of industry AUM and revenue?

Q9. In a separately managed account (SMA), the client:

Q10. Hedge funds differ from mutual funds in that they typically:

LOS D · DB VS DC IN PRACTICE

Pension Portfolio Construction

WORKED EXAMPLE **Lifecycle Glide Path**

GIVEN

Target-date fund maps age to asset allocation. Age 25 to 65 window.

ALLOCATION

AGE	EQUITIES	BONDS
25	90%	10%
65	10%	90%

Smooth reallocation is called the **glide path**.

RATIONALE

Young investors have long horizons ⇒ can tolerate equity volatility for higher expected growth. As horizon shortens, shift toward fixed-income to preserve accumulated wealth. This directly maps the dominance rules (Rule 1 and Rule 2) to lifecycle investing.

DB vs. DC — Who Bears Risk?

In **DB**, the employer promises a fixed benefit formula (e.g., 2% × years of service × wage average). Plan must invest to meet that obligation — **investment risk = employer**.

In **DC**, only the contribution is promised. Retirement wealth depends on contributions + returns — **investment risk = employee**.

QUIZ 3 · CHECKPOINT

Test Your Mastery

Q11. The portfolio approach holds that securities should be selected based on their:

Q12. Which best describes the three steps of the portfolio management process (in order)?

Q13. An endowment with a perpetual life and spending rule would typically have:

Q14. Which of the following is *most likely* classified as an "alternative" rather than "traditional" asset management activity?

Q15. The *glide path* in a target-date retirement fund refers to:

MODULE COMPLETE

Your Scorecard

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LM03 Key Takeaways

Portfolio Approach & Process

1. Evaluate securities by **contribution** to the whole portfolio, not in isolation.
2. **Two dominance rules** + "portfolio mgmt primarily reduces risk".
3. **Diversification ratio** = $\sigma_{port}/\sigma_{avg}$. Lower = more benefit. Correlations rise in crises.
4. **Process**: Planning (KYC + IPS) → Execution (asset allocation, security analysis, construction) → Feedback (monitor + rebalance + report).

Investors & Pensions

5. Individuals vary; DB pensions: long horizon / low liquidity / high risk tolerance; banks: short/high/low; endowments: perpetual/low/moderate-to-high.
6. **DB**: pre-specified benefit; employer bears risk. **DC**: specified contribution; employee bears risk.

Industry & Products

7. Industry AUM ≈ $79.2T. Active: majority AUM, ~43% revenue. Passive: ~20% AUM, ~6% revenue.
8. **Mutual funds**: open-end (NAV trades) vs. closed-end (exchange, premium/discount). Load vs. no-load.
9. **ETFs**: lower MER, exchange-traded, can short, continuous pricing, dividend payouts (tax-advantaged).

10. **SMAs**: non-pooled; client owns assets. **Hedge Funds**: accredited only; mgmt + performance fees.
11. **LBO / VC**: active management, illiquid, exit-critical.

Last-Minute Exam Checklist

Dominance: same return ⇒ lower σ wins; same σ ⇒ higher return wins

Diversification Ratio: $\sigma_{port}/\sigma_{avg}$; lower = better

Process: Planning → Execution → Feedback

IPS: objectives + constraints + benchmark; revised as needed

DB vs DC: employer vs employee bears risk

Open vs Closed-end: NAV issue/redeem vs fixed-share exchange-traded

Smart beta: rules-based factor exposure — hybrid passive/active

Step 1 of 15