

Book 4: Alternative Investments, Portfolio Construction, and Ethical and Professional Standards

SchweserNotes™ 2027

Level I CFA®

SCHWESERNOTES™ 2027 LEVEL I CFA® BOOK 4: ALTERNATIVE INVESTMENTS, PORTFOLIO
CONSTRUCTION, AND ETHICAL AND PROFESSIONAL STANDARDS

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LEARNING OUTCOME STATEMENTS (LOS)

80. Alternative Investment Features, Methods, and Structures

The candidate should be able to:

- a. describe features and categories of alternative investments. (page 1)
- b. compare direct investment, co-investment, and fund investment methods for alternative investments. (page 3)
- c. describe investment ownership and compensation structures commonly used in alternative investments. (page 4)

81. Alternative Investment Performance and Returns

The candidate should be able to:

- a. describe the performance appraisal of alternative investments. (page 11)
- b. calculate and interpret alternative investment returns both before and after fees. (page 14)

82. Investments in Private Capital: Equity and Debt

The candidate should be able to:

- a. explain features of private equity and its investment characteristics. (page 23)
- b. explain features of private debt and its investment characteristics. (page 26)
- c. describe the diversification benefits that private capital can provide. (page 27)

83. Real Estate and Infrastructure

The candidate should be able to:

- a. explain features and characteristics of real estate. (page 31)
- b. explain the investment characteristics of real estate investments. (page 33)
- c. explain features and characteristics of infrastructure. (page 34)
- d. explain the investment characteristics of infrastructure investments. (page 35)

84. Natural Resources

The candidate should be able to:

- a. explain features of raw land, timberland, and farmland and their investment characteristics. (page 39)
- b. describe features of commodities and their investment characteristics. (page 40)
- c. analyze sources of risk, return, and diversification among natural resource investments. (page 41)

85. Hedge Funds

The candidate should be able to:

- a. explain investment features of hedge funds and contrast them with other asset classes. (page 45)
- b. describe investment forms and vehicles used in hedge fund investments. (page 48)
- c. analyze sources of risk, return, and diversification among hedge fund investments. (page 49)

86. Introduction to Digital Assets

The candidate should be able to:

- a. describe financial applications of distributed ledger technology. (page 53)
- b. explain investment features of digital assets and contrast them with other asset classes. (page 57)
- c. describe investment forms and vehicles used in digital asset investments. (page 58)
- d. analyze sources of risk, return, and diversification among digital asset investments. (page 60)

87. Portfolio Risk and Return: Part I

The candidate should be able to:

- a. describe characteristics of the major asset classes that investors consider in forming portfolios. (page 69)
- b. explain risk aversion and its implications for portfolio selection. (page 70)
- c. explain the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line. (page 71)
- d. calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data. (page 75)
- e. calculate and interpret portfolio standard deviation. (page 77)
- f. describe the effect on a portfolio's risk of investing in assets that are less than perfectly correlated. (page 79)
- g. describe and interpret the minimum-variance and efficient frontiers of risky assets and the global minimum-variance portfolio. (page 81)

88. Portfolio Risk and Return: Part II

The candidate should be able to:

- a. describe the implications of combining a risk-free asset with a portfolio of risky assets. (page 87)
- b. explain the capital allocation line (CAL) and the capital market line (CML). (page 88)
- c. explain systematic and nonsystematic risk, including why an investor should not expect to receive additional return for bearing nonsystematic risk. (page 91)
- d. explain return generating models (including the market model) and their uses. (page 93)
- e. calculate and interpret beta. (page 95)
- f. explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML). (page 97)
- g. calculate and interpret the expected return of an asset using the CAPM. (page 97)
- h. describe and demonstrate applications of the CAPM and the SML. (page 101)
- i. calculate and interpret the Sharpe ratio, Treynor ratio, M^2 , and Jensen's alpha. (page 103)

89. Portfolio Management: An Overview

The candidate should be able to:

- a. describe the portfolio approach to investing. (page 113)
- b. describe the steps in the portfolio management process. (page 114)
- c. describe types of investors and distinctive characteristics and needs of each. (page 115)
- d. describe defined contribution and defined benefit pension plans. (page 116)
- e. describe aspects of the asset management industry. (page 118)
- f. describe mutual funds and compare them with other pooled investment products. (page 119)

90. Basics of Portfolio Planning and Construction

The candidate should be able to:

- a. describe the reasons for a written investment policy statement (IPS). (page 127)
- b. describe the major components of an IPS. (page 127)
- c. describe risk and return objectives and how they may be developed for a client. (page 128)
- d. explain the difference between the willingness and the ability (capacity) to take risk in analyzing an investor's financial risk tolerance. (page 129)
- e. describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique circumstances and their implications for the choice of portfolio assets. (page 129)
- f. explain the specification of asset classes in relation to asset allocation. (page 131)
- g. describe the principles of portfolio construction and the role of asset allocation in relation to the IPS. (page 132)
- h. describe how environmental, social, and governance (ESG) considerations may be integrated into portfolio planning and construction. (page 134)

91. The Behavioral Biases of Individuals

The candidate should be able to:

- a. compare and contrast cognitive errors and emotional biases. (page 141)
- b. discuss commonly recognized behavioral biases and their implications for financial decision making. (page 142)
- c. describe how behavioral biases of investors can lead to market characteristics that may not be explained by traditional finance. (page 150)

92. Introduction to Risk Management

The candidate should be able to:

- a. define risk management. (page 157)
- b. describe features of a risk management framework. (page 158)
- c. define risk governance and describe elements of effective risk governance. (page 158)
- d. explain how risk tolerance affects risk management. (page 158)
- e. describe risk budgeting and its role in risk governance. (page 159)
- f. identify financial and non-financial sources of risk and describe how they may interact. (page 159)
- g. describe methods for measuring and modifying risk exposures and factors to consider in choosing among the methods. (page 160)

93. Ethics and Trust in the Investment Profession

The candidate should be able to:

- a. explain ethics. (page 169)
- b. describe the role of a code of ethics in defining a profession. (page 169)
- c. describe professions and how they establish trust. (page 170)
- d. describe the need for high ethical standards in investment management. (page 170)
- e. explain professionalism in investment management. (page 171)
- f. identify challenges to ethical behavior. (page 171)
- g. compare and contrast ethical standards with legal standards. (page 172)
- h. describe a framework for ethical decision making. (page 172)

94. Code of Ethics and Standards of Professional Conduct

The candidate should be able to:

- a. describe the structure of the CFA Institute Professional Conduct Program and the process for the enforcement of the Code and Standards. (page 177)
- b. identify the six components of the Code of Ethics and the seven Standards of Professional Conduct. (page 178)
- c. explain the ethical responsibilities required by the Code and Standards, including the sub-sections of each Standard. (page 179)

95. Guidance for Standard I: Professionalism

The candidate should be able to:

- a. demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity. (page 185)
- b. recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct. (page 185)
- c. identify conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. (page 185)

96. Guidance for Standard II: Integrity of Capital Markets

The candidate should be able to:

- a. demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity. (page 193)
- b. recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct. (page 193)
- c. identify conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. (page 193)

97. Guidance for Standard III: Duties to Clients

The candidate should be able to:

- a. demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity. (page 197)
- b. recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct. (page 197)
- c. identify conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. (page 197)

98. Guidance for Standard IV: Duties to Employers

The candidate should be able to:

- a. demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity. (page 205)
- b. recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct. (page 205)
- c. identify conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. (page 205)

99. Guidance for Standard V: Investment Analysis, Recommendations, and Actions

The candidate should be able to:

- a. demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity. (page 211)
- b. recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct. (page 211)
- c. identify conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. (page 211)

100. Guidance for Standard VI: Conflicts of Interest

The candidate should be able to:

- a. demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity. (page 217)
- b. recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct. (page 217)
- c. identify conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. (page 217)

101. Guidance for Standard VII: Responsibilities as a CFA Institute Member or CFA Candidate

The candidate should be able to:

- a. demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity. (page 223)
- b. recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct. (page 223)
- c. identify conduct that conforms to the Code and Standards and conduct that violates the Code and Standards. (page 223)

102. Application of the Code and Standards: Level I

The candidate should be able to:

- a. evaluate practices, policies, and conduct relative to the CFA Institute Code of Ethics and Standards of Professional Conduct. (page 227)
- b. explain how the practices, policies, and conduct do or do not violate the CFA Institute Code of Ethics and Standards of Professional Conduct. (page 227)

READING 80

Alternative Investment Features, Methods, and Structures

MODULE 80.1: ALTERNATIVE INVESTMENT STRUCTURES

LOS 80.a: Describe features and categories of alternative investments.

Alternative investments comprise various types of investments that do not fall under the heading of **traditional investments**, which refers to long-only investments in cash or publicly traded stocks and bonds.

Types of alternative investment structures include hedge funds, private equity funds, and various types of real estate investments. Alternative investments typically are actively managed and may include investments in commodities, infrastructure, and illiquid securities.

The perceived benefits of including alternative investments in portfolios are risk reduction from diversification (due to low correlations of alternative investments with traditional investments) and possible higher returns from holding illiquid securities, and from markets for some alternative investments possibly being less efficient than those for traditional investments.

Compared with traditional investments, alternative investments typically exhibit the following features:

- More specialized knowledge required of investment managers
- Relatively low correlations with returns of traditional investments
- Less liquidity of assets held
- Longer time horizons for investors
- Larger size of investment commitments

As a result of these unique features, alternative investments exhibit the following characteristics:

- Investment structures that facilitate direct investment by managers
- Information asymmetry between fund managers and investors, which funds typically address by means of incentive-based fee structures
- Difficulty in appraising performance, such as more problematic and less available historical returns and volatility data

Although correlations of returns on alternative investments with returns on traditional investments may be low on average, these correlations may increase significantly during periods of economic stress.

We will examine several types of alternative investments in detail in separate readings in this topic area. We may classify alternative investments into three broad categories of private capital, real assets, and hedge funds.

1. **Private capital** includes private equity and private debt:
 - As the name suggests, **private equity** funds invest in the equity of companies that are not publicly traded, or in the equity of publicly traded firms that the funds intend to take private. These firms are often in the mature or decline stages of their industry life cycle. **Leveraged buyout (LBO)** funds use borrowed money to purchase equity in established companies and comprise most private equity investment funds. **Venture capital** funds invest in young, unproven companies at the start-up or early stages in their life cycles.
 - **Private debt** funds may make loans directly to companies, lend to early-stage firms (**venture debt**), or invest in the debt of firms that are struggling to make their debt payments or have entered bankruptcy (**distressed debt**).
2. **Real assets** include real estate, infrastructure, natural resources, and other assets such as digital assets:
 - **Real estate** investments include residential or commercial properties, as well as real estate-backed debt. These investments are held in various structures, including full or leveraged ownership of individual properties, individual real estate-backed loans, private and publicly traded securities backed by pools of properties or mortgages, and limited partnerships.
 - **Natural resources** include commodities, farmland, and timberland. To gain exposure to **commodities**, investors can own physical commodities, commodity derivatives, or the equity of commodity-producing firms. Some funds seek exposure to the returns on various commodity indices, often by holding derivatives contracts (futures) that are expected to track a specific commodity index. **Farmland** can produce income from leasing the land out for farming or from raising crops or livestock for harvest and sale. **Timberland** investment involves purchasing forested land and harvesting trees to generate cash flows.
 - **Infrastructure** refers to long-lived assets that provide public services. These include economic infrastructure assets (e.g., roads, airports, and utility grids) and social infrastructure assets (e.g., schools and hospitals). While often financed and constructed by government entities, infrastructure investments have more recently been undertaken by **public-private partnerships**, with

each holding a significant stake in the infrastructure assets. Various deal structures are employed, and the asset may revert to public ownership at some future date.

- Other types of real assets include collectibles such as art, intangible assets such as patents, and **digital assets** such as cryptocurrencies.
3. **Hedge funds** are investment companies typically open only to qualified investors. These funds may use leverage, hold long and short positions, use derivatives, and invest in illiquid assets. Managers of hedge funds use many different strategies in attempting to generate investment gains. They do not necessarily hedge risk, as the name might imply.

LOS 80.b: Compare direct investment, co-investment, and fund investment methods for alternative investments.

Fund investing refers to investing in a pool of assets alongside other investors, using a fund manager who selects and manages a pool of investments using an agreed-upon strategy. In this case, the individual investors do not control the selection of assets for investment or their subsequent management and sale. The manager typically receives a percentage of the investable funds (management fee) as well as a percentage of the investment gains (incentive fee).

Compared to funds that invest in traditional asset classes, alternative investment funds typically require investors to commit larger amounts of capital for longer periods, provide less information on positions held and returns earned, and charge higher management fees. A fund's **term sheet** describes its investment policy, fee structure, and requirements for investors to participate.

With **co-investing**, an investor contributes to a pool of investment funds (as with fund investing) but also has the right to invest, directly alongside the fund manager, in some of the assets in which the manager invests. Compared to fund investing, co-investing can reduce overall fees while benefiting from the manager's expertise. Co-investing also can provide an investor with an opportunity to gain the skills and experience to pursue direct investing. For a fund manager, permitting co-investment may increase the availability of investment funds and expand the scope and diversification of the fund's investments.

Direct investing refers to an investor that purchases assets itself, rather than pooling its funds with others or using a specialized outside manager. Larger, more knowledgeable investors may purchase private companies or real estate directly. For example, a sovereign wealth fund may have its own specialized managers to invest in real estate, agricultural land, or companies in the venture stage.

Direct investing has advantages in that there are no fees to outside managers, and the investor has more control over investment choices. Disadvantages include the possibility of less diversification across investments, higher minimum investment amounts, and greater investor expertise required to evaluate deals and perform their own due diligence.

LOS 80.c: Describe investment ownership and compensation structures commonly used in alternative investments.

Alternative investments are often structured as **limited partnerships**. In a limited partnership, the **general partner (GP)** is the fund manager and makes all the investment decisions. The **limited partners (LPs)** are the investors, who own a partnership share proportional to their investment amounts. The LPs typically have no say in how the fund is managed and no liability beyond their investment in the partnership. The GP takes on the liabilities of the partnership, including the repayment of any partnership debt. Partnerships typically set a maximum number of LPs that may participate.

LPs commit to an investment amount, and in some cases, they only contribute a portion of that initially, providing the remaining funds over time as required by the GP (as fund investments are made). General partnerships are less regulated than publicly traded companies, and limited partnership shares are typically only available to **accredited investors**—those with sufficient wealth to bear significant risk and enough investment sophistication to understand the risks.

The rules and operational details that govern a partnership are contained in the **limited partnership agreement**. Special terms that apply to one limited partner but not to others can be stated in **side letters**. For example, an LP might negotiate an **excusal right** to withhold a capital contribution that the GP would otherwise require. Some limited partners may require that special terms offered to other LPs also be offered to them. This is known as a **most-favored-nation clause** in a side letter.

While most alternative investment limited partnership holdings are illiquid, a fund may be structured as a **master limited partnership (MLP)** that can be publicly traded. Master limited partnerships are most common in funds that specialize in natural resources or real estate.

Fee Structures

The total fees paid by investors in alternative investment funds often consist of a **management fee**, typically between 1% and 2% of the fund's assets, and a **performance fee** or **incentive fee** (sometimes referred to as **carried interest**).

The fund manager earns the management fee, regardless of investment performance. For hedge funds, the management fees are calculated as a percentage of assets under management (AUM), typically the net asset value of the fund's investments. For private equity funds, the management fee is calculated as a percentage of **committed capital**, not invested capital. Committed capital is typically not all invested immediately; rather, it is "drawn down" (invested) as securities are identified and added to the portfolio. Committed capital is usually drawn down over three to five years, but the drawdown period is at the discretion of the fund manager. Committed capital that has not yet been drawn down is referred to as **dry powder**. The reason for basing management fees on committed capital is that otherwise, the fund manager would have an incentive to invest capital quickly instead of selectively.

Performance fees (also referred to as incentive fees) are a portion of profits on fund investments. Most often, the partnership agreement will specify a **hurdle rate** (or **preferred return**) that must be met or exceeded before any performance fees are paid. Hurdle rates can be defined in two ways: either “hard” or “soft.” If a **soft hurdle rate** is met, performance fees are a percentage of the total increase in the value of each partner’s investment. With a **hard hurdle rate**, performance fees are based only on gains above the hurdle rate.

For example, consider a fund with a hurdle rate of 8% that has produced a return of 12% for the year. We will use a performance fee structure of 20% of gains. If the 8% is a soft hurdle rate, the performance fee will be 20% of the entire 12%, or 2.4%. If the 8% is a hard hurdle rate, the performance fee will be 20% of the gains above the hurdle rate ($12\% - 8\% = 4\%$), which would be 0.8%.

Typically, performance fees are paid at the end of each year based on the increase in the value of fund investments, after management fees and other charges, which may include consulting and monitoring fees that are charged to individual portfolio companies.

A **catch-up clause** in a partnership agreement is based on a hurdle rate and is similar in its effect to a soft hurdle rate. Consider a fund with returns of 14%, a hurdle rate of 8%, and a 20% performance fee. A catch-up clause would result in the first 8% of gains going to the LPs and the next 2% going to the GP, allowing the GP to “catch up” to receiving 20% of the first 10% of gains. After the catchup, further gains are split 80/20 between the LPs and the GP.

Another feature that is often included is a **high-water mark**, which means no performance fee is paid on gains that only offset prior losses. Thus, performance fees are only paid to the extent that the current value of an investor’s account is above the highest net-of-fees value previously recorded (at the end of a payment period). This feature ensures that investors will not be charged performance fees twice on the same gains in their portfolio values. Because investors invest in a fund at different times, they each may have a different high-water mark value.

A partnership’s **waterfall** refers to the way in which payments are allocated to the GP and the LPs as profits and losses are realized on deals. With a **deal-by-deal waterfall** (or **American waterfall**), profits are distributed as each fund investment is sold and shared according to the partnership agreement. This favors the GP because performance fees are paid before 100% of the LPs’ original investment plus the hurdle rate is returned to them. With a **whole-of-fund waterfall** (or **European waterfall**), the LPs receive all distributions until they have received 100% of their initial investment plus the hurdle rate (typically after all fund investments have been sold).

A **clawback provision** stipulates that if the GP accrues or receives incentive payments on gains that are subsequently reversed as the partnership exits deals, the LPs can recover previous (excess) incentive payments. With a deal-by-deal waterfall, successful deals might be exited initially, while losses are realized later. A clawback provision would allow the LPs to recover these performance fees to the extent that the subsequent losses negate prior gains on which performance fees had been paid.



MODULE QUIZ 80.1

1. Compared with alternative investments, traditional investments tend to:
 - A. be less liquid.
 - B. have lower fees.
 - C. require more specialized knowledge.
2. An investor who wants to gain exposure to alternative investments but does not have the in-house expertise to perform due diligence on individual deals is *most likely* to engage in:
 - A. co-investing.
 - B. fund investing.
 - C. direct investing.
3. Management fees for a private capital fund are determined as a percentage of:
 - A. invested capital.
 - B. committed capital.
 - C. assets under management.
4. For an investor in a private equity fund, the *least* advantageous of the following limited partnership terms is a(n):
 - A. clawback provision.
 - B. European-style waterfall provision.
 - C. American-style waterfall provision.

KEY CONCEPTS

LOS 80.a

Alternative investments comprise various types of investments that do not fall under the heading of traditional investments. Categories of alternative investments include the following:

- Hedge funds
- Private capital (private equity and private debt)
- Real assets (real estate, natural resources, and infrastructure)

Alternative investments have relatively low correlations with returns of traditional investments. Compared with traditional investments, alternative investments typically require more specialized knowledge of investment managers. Assets held tend to be less liquid, making alternative investments appropriate for investors who have long time horizons and can commit large amounts of capital.

LOS 80.b

Fund investing refers to pooling assets along with other investors, using a fund manager that selects and manages investments according to an agreed-upon strategy.

Co-investing refers to fund investing that includes the right to invest additional capital directly alongside the fund manager.

Direct investing refers to purchasing assets independently, rather than pooling funds with others or using a specialized outside manager.

LOS 80.c

Many alternative investments are structured as limited partnerships, in which the GP is the fund manager and the LPs are the investors. They are less regulated than publicly traded companies and are typically only available to accredited investors. LPs may commit to an investment amount and, in some cases, contribute only a portion of that initially, providing the remaining funds over time as required by the GP.

Fees in alternative investment funds often consist of a management fee and a performance fee. For hedge funds, management fees are a percentage of assets under management. For private capital, management fees are a percentage of committed capital rather than capital invested.

Performance fees are a portion of profits on fund investments. Typically, a hurdle rate must be exceeded before performance fees are paid. With a soft hurdle rate, performance fees are based on the total increase in the value of each partner's investment. With a hard hurdle rate, performance fees are based only on gains above the hurdle rate. A high-water mark is a provision that no performance fees are paid on gains that only offset prior losses.

A waterfall refers to the way payments are allocated to the GP and the LPs. With a deal-by-deal or American waterfall, profits are distributed as each fund investment is sold. With a whole-of-fund or European waterfall, the LPs receive all distributions until they have received 100% of their initial investment plus the hurdle rate.

With a clawback provision, if the GP receives incentive payments on gains that are subsequently reversed, the LPs can recover excess incentive payments.