2025 CFA®
Exam Prep

SchweserNotes™
Portfolio Construction and Performance Measurement

Level III Book 2

KAPLAN SCHWESER

Book 2: Portfolio Construction and Performance Measurement

SchweserNotes™ 2025

Level III CFA®

SCHWESERNOTES™ 2025 LEVEL III CFA® BOOK 2: PORTFOLIO CONSTRUCTION AND PERFORMANCE MEASUREMENT

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Learning Outcome Statements (LOS)

6. Overview of Equity Portfolio Management

The candidate should be able to:

a. describe the roles of equities in the overall portfolio.
b. describe how an equity manager's investment universe can be segmented.
c. describe the types of income and costs associated with owning and managing an equity portfolio and their potential effects on portfolio performance.
d. describe the potential benefits of shareholder engagement and the role an equity manager might play in shareholder engagement.
e. describe rationales for equity investment across the active management spectrum.
f. discuss considerations in choosing a benchmark for an equity portfolio.

7. Overview of Fixed-Income Portfolio Management

The candidate should be able to:

a. discuss roles of fixed-income securities in portfolios and how fixed-income mandates may be classified.
b. describe fixed-income portfolio measures of risk and return as well as correlation characteristics.
c. describe bond market liquidity, including the differences among market sub-sectors, and discuss the effect of liquidity on fixed-income portfolio management.
d. describe and interpret a model for fixed-income returns.
e. discuss the use of leverage, alternative methods for leveraging, and risks that leverage creates in fixed-income portfolios.
f. discuss differences in managing fixed-income portfolios for taxable and tax-exempt investors.
g. describe liability-driven investing.
h. describe the strategy of cash flow matching.
i. describe construction, benefits, limitations, and risk–return characteristics of a laddered bond portfolio.

8. Asset Allocation to Alternative Investments

The candidate should be able to:

a. explain the roles that alternative investments play in multi-asset portfolios.
b. compare alternative investments and bonds as risk mitigators in relation to a long equity position.
c. compare traditional and risk-based approaches to defining the investment opportunity set, including alternative investments.
d. discuss investment considerations that are important in allocating to different types of alternative investments.
e. discuss suitability considerations in allocating to alternative investments.
f. discuss approaches to asset allocation to alternative investments.
g. discuss the importance of liquidity planning in allocating to alternative investments.
h. discuss considerations in monitoring alternative investment programs.

9. An Overview of Private Wealth Management

The candidate should be able to:

a. discuss the different types of individual wealth and how wealth is created and distributed globally.
b. evaluate how changes in human capital, financial capital, and economic net worth across the financial stages of an individual's life influence their financial decision making.
c. justify how returns, risks, objectives, and constraints for individuals relate to their human and financial capital.
d. evaluate how various types of taxes imposed on individual investors and the impact of inflation influence investment decisions.
e. discuss the differences between private and institutional clients and formulate an appropriate Investment Policy Statement for private clients.

10. Portfolio Management for Institutional Investors

The candidate should be able to:

a. discuss common characteristics of institutional investors as a group.
b. discuss investment policy of institutional investors.
c. discuss the stakeholders in the portfolio, the liabilities, the investment time horizons, and the liquidity needs of different types of institutional investors.
d. describe the focus of legal, regulatory, and tax constraints affecting different types of institutional investors.
e. evaluate risk considerations of private defined benefit (DB) pension plans in relation to 1) plan funded status, 2) sponsor financial strength, 3) interactions between the sponsor's business and the fund's investments, 4) plan design, and 5) workforce characteristics.
f. evaluate the investment policy statement of an institutional investor.
g. evaluate the investment portfolio of a private DB plan, sovereign wealth fund, university endowment, and private foundation.
h. describe considerations affecting the balance sheet management of banks and insurers.

11. Trading Costs and Electronic Markets

The candidate should be able to:

a. explain the components of execution costs, including explicit and implicit costs.
b. calculate and interpret effective spreads and VWAP transaction cost estimates.
c. describe the implementation shortfall approach to transaction cost measurement.
d. describe factors driving the development of electronic trading systems.
e. describe market fragmentation.
f. identify and contrast the types of electronic traders.
g. describe characteristics and uses of electronic trading systems.
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i. describe the risks associated with electronic trading and how regulators mitigate them.
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The candidate should be able to:

a. discuss financial risks associated with the portfolio strategy of an institutional investor.
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c. analyze and evaluate the financial and non-financial risk exposures in the portfolio strategy of an institutional investor.
d. discuss various methods to manage the risks that arise on long-term direct investments of an institutional investor.
e. evaluate strengths and weaknesses of an enterprise risk management system and recommend improvements.
e. evaluate strengths and weaknesses of an enterprise risk management system and recommend improvements.

13. Portfolio Performance Evaluation

The candidate should be able to:

a. explain the following components of portfolio evaluation and their interrelationships: performance measurement, performance attribution, and performance appraisal.
b. describe attributes of an effective attribution process.
c. contrast return attribution and risk attribution; contrast macro and micro return attribution.
d. describe returns-based, holdings-based, and transactions-based performance attribution, including advantages and disadvantages of each.
e. interpret the sources of portfolio returns using a specified attribution approach.
f. interpret the output from fixed-income attribution analyses.
g. discuss considerations in selecting a risk attribution approach.
h. identify and interpret investment results attributable to the asset owner versus those attributable to the investment manager.
i. discuss uses of liability-based benchmarks.
j. describe types of asset-based benchmarks.
k. discuss tests of benchmark quality.

l. describe the impact of benchmark misspecification on attribution and appraisal analysis.
m. describe problems that arise in benchmarking alternative investments.
n. calculate and interpret the Sortino ratio, the appraisal ratio, upside/downside capture ratios, maximum drawdown, and drawdown duration.
o. describe limitations of appraisal measures and related metrics.
p. evaluate the skill of an investment manager.

14. Investment Manager Selection

The candidate should be able to:

a. describe the components of a manager selection process, including due diligence.
b. contrast Type I and Type II errors in manager hiring and continuation decisions.
c. describe uses of returns-based and holdings-based style analysis in investment manager selection.
d. describe uses of the upside capture ratio, downside capture ratio, maximum drawdown, drawdown duration, and up/down capture in evaluating managers.
e. evaluate a manager's investment philosophy and investment decision-making process.
f. discuss how behavioral factors affect investment team decision making, and recommend techniques for mitigating their effects.
g. evaluate the costs and benefits of pooled investment vehicles and separate accounts.
h. compare types of investment manager contracts, including their major provisions and advantages and disadvantages.
i. describe the three basic forms of performance-based fees.
j. analyze and interpret a sample performance-based fee schedule.

15. Overview of the Global Investment Performance Standards

The candidate should be able to:

a. discuss the objectives and scope of the GIPS standards and their benefits to prospective clients and investors, as well as investment managers.
b. explain the fundamentals of compliance with the GIPS standards, including the definition of the firm and the firm's definition of discretion.
c. discuss requirements of the GIPS standards with respect to return calculation methodologies, including the treatment of external cash flows, cash and cash equivalents, and expenses and fees.
d. explain the recommended valuation hierarchy of the GIPS standards.
e. explain requirements of the GIPS standards with respect to composite return calculations, including methods for asset-weighting portfolio returns.
f. explain the meaning of "discretionary" in the context of composite construction and, given a description of the relevant facts, determine whether a portfolio is likely to be considered discretionary.
g. explain the role of investment mandates, objectives, or strategies in the construction of composites.
h. explain requirements of the GIPS standards with respect to composite construction, including switching portfolios among composites, the timing of the inclusion of new portfolios in composites, and the timing of the exclusion of terminated portfolios from composites.
i. explain requirements of the GIPS standards with respect to presentation and reporting.
j. explain the conditions under which the performance of a past firm or affiliation may be linked to or used to represent the historical performance of a new or acquiring firm.
k. discuss the purpose, scope, and process of verification.

READING 6

OVERVIEW OF EQUITY PORTFOLIO MANAGEMENT

EXAM FOCUS

This reading provides candidates with an overview of equity portfolio management. Candidates are expected to know the roles of equities in their clients' portfolios. Candidates also need to be familiar with their clients' constraints, which may include ESG considerations. In addition, we present the three main approaches on how an equity manager's investment universe may be segmented. This reading continues with a discussion regarding the types of income and costs associated with managing an equity portfolio and how these costs may affect portfolio performance. Next, we will turn our attention to the potential benefits of shareholder engagement. Shareholder engagement refers to shareholders and managers seeking to influence the companies they invest in through calls and/or shareholder voting. Lastly, this reading focuses on the considerations in choosing the proper benchmark to evaluate portfolio performance.

MODULE 6.1: EQUITY INVESTMENT ROLES

Video covering this content is available online.

LOS 6.a: Describe the roles of equities in the overall portfolio.

Within the overall investment portfolio, equity securities play several beneficial roles. These roles include capital appreciation, dividend income, diversification, and the potential to hedge inflation.

Capital Appreciation

The main driver of long-term equity returns is capital (or price) appreciation. Capital appreciation results from investing in companies that are experiencing growth in cash flows, revenues, and/or earnings. These companies range from small technology companies that are focused on growth opportunities to large, well-established companies that are focused on value-added acquisitions and minimizing costs.

In the last 50 years, equity returns on average have been higher than bonds and bills. In general, equities tend to outperform other major asset classes during periods of strong economic growth, and underperform during periods of weak economic growth.

Dividend income: This is an important component of equity return. When companies generate excess cash flows, they can decide to either reinvest those cash flows in value-

added projects or distribute them to investors in the form of *dividends*. Well-established companies often pay dividends to investors and those dividends may increase over time. However, dividend payments are not guaranteed to increase or even continue into the future. Typical recent annual dividend yields have been 1%–3%. Dividend yield tends to be more stable than return due to price change.

Diversification: Equity securities offer diversification benefits due to less than perfect (i.e., less than +1.0) correlation with other asset classes. When assets are less than perfectly correlated, portfolio standard deviation will be lower than the weighted sum of the individual asset standard deviations.

However, the risk reduction is not constant. During a financial crisis correlations tend to increase, limiting the diversification benefit. In addition, asset class standard deviations could increase, further reducing the expected reduction in portfolio risk.

Inflation hedge: In some cases, individual equities or equity sectors may provide a hedge against inflation. A company that can charge its customers more when input costs increase (due to inflation), can provide an inflation hedge by increasing to cash flow and earnings as prices increase. Commodity-producing companies (e.g., oil producer) may also benefit directly from commodity price increases.

The general record for equities as an inflation hedge is mixed. Studies generally show positive correlation between equity real returns and inflation, but the relationship varies over time and by country. Other studies show that equities and inflation become negatively correlated during periods of hyperinflation. In addition, equity prices are typically a leading economic indicator while inflation is a lagging economic indicator; also suggesting a less than perfect correlation between equity return and inflation.

Client Investment Considerations

The decision to include equities or the kinds of equities to include in a portfolio also depends on client investment considerations as outlined in the investment policy statement (IPS). Clients with a high risk tolerance may prefer growth-oriented companies, while clients with a low risk tolerance may prefer stable, well-established companies that pay dividends.

Client constraints may include environmental, social, and governance (ESG) considerations and religious beliefs. Portfolio managers can address these constraints by using the following:

- **Negative screening** (i.e., exclusionary screening), which excludes companies or sectors that do not meet client standards. For example, a client may wish to exclude investments in the oil and gas industry.
- **Positive screening** (i.e., best-in-class screening), which seeks to uncover companies or sectors that rank most favorably with clients. For example, a client may wish to overweight companies that exhibit strong governance practices.

Most recently, ESG integration has become the dominate sustainable investment strategy. In addition to maximizing financial performance, many investors are now looking to achieve a more qualitative aspect to their portfolio by aligning their

investment choices to their values while at the same time aiming for a sustainable world and making a positive contribution to society. In all aspects of the investment process, asset managers can use ESG integration to analyze security valuation, determine expected returns, conduct risk analysis, and construct a complete sustainable portfolio.

Other approaches to ESG investing include thematic investing and impact investing. **Thematic investing** screens equities based on a specific theme, such as climate change. **Impact investing** aims to meet an investor's objectives by becoming more actively engaged with company matters and/or directly investing in company projects with the explicit intention of generating a positive social and environmental impact alongside a financial return.

Equity Investment Segmentation

LOS 6.b: Describe how an equity manager's investment universe can be segmented.

The three main **segmentation** approaches include size and style, geography, and economic activity. Using these approaches provides a better understanding of how equity investments integrate into the overall portfolio and enhance diversification benefits.

Size and Style

- Size, typically measured by market capitalization, can be categorized by large-cap, mid-cap, or small-cap companies.
- Style can be categorized by growth or value companies, or a mix of these two styles (sometimes referred to as *blend* or *core*). Investment style can be determined by analyzing company metrics, such as price-to-earnings ratios, price-to-book ratios, dividend yield, and earnings and/or book value growth.

A style box can be used to rank (or *score*) companies or portfolios among these metrics. An example is shown in Figure 6.1.

Figure 6.1: Equity Investment Style Box

		Style		
		Value	Blend	Growth
Size	Large	Large-cap value	Large-cap blend	Large-cap growth
	Medium	Mid-cap value	Mid-cap blend	Mid-cap growth
	Small	Small-cap value	Small-cap blend	Small-cap growth

It may be beneficial for portfolio managers to analyze exactly where each company falls within the nine size/style boxes (e.g., create a scatterplot of each investment within an equity index). For example, when comparing two equities within the large-cap value box, a scatterplot may reveal that one of these companies has a higher market cap and is solidly valued while the other may be closer to medium-cap and a blend

investment style. Managers can also break the nine boxes into additional equity style classifications such as micro-cap growth.

Advantages to segmenting by size and style include:

- Portfolio managers can better address client investment considerations in terms of risk and return characteristics.
- The potential for greater diversification benefits by investing across different sectors or industries.
- The ability to construct relevant benchmarks for funds that invest in a specific size/style category.
- The ability to analyze how company characteristics change over time. For example, as a small-cap growth company matures it may move into the mid-cap or large-cap categories and shift towards blended from pure growth.

The last advantage is also a disadvantage in that the categories are not stable over time.

Geography

This approach categorizes international markets by stage of economic development, such as developed markets, emerging markets, and frontier markets. Examples for each economic development stage include the following:

- *Developed markets*: United States, United Kingdom, Germany, Australia, and Japan.
- *Emerging markets*: Brazil, Russia, India, China, and South Africa.
- *Frontier markets*: Iceland, Estonia, Nigeria, Jordan, and Vietnam.

The main advantage to geographic segmentation is that investors with significant domestic market exposure can better understand how to diversify across international markets. One disadvantage to this approach is that investing in international equity markets may subject investors to currency risk. Another disadvantage is an overestimation of the diversification benefit. For example, a domestic investor from a developed market purchases stock in large companies in a foreign market to diversify. But the companies may have already diversified their business internationally and may even derive much of their income from the investor's country.

Economic Activity

This approach groups companies into sectors or industries by applying either a market-oriented or a production-oriented approach. A *market-oriented approach* segments companies by markets served, how products are used by consumers, and how cash flows are generated. A *production-oriented approach* segments companies by products manufactured and inputs required during the production process. Note that applying either approach may lead to slightly different classifications. For example, a market-oriented approach may classify a coal company in the energy sector, while a production-oriented approach may classify that same company in the basic materials sector.

The four primary classification structures for segmenting companies by economic activity are:

- Global Industry Classification Standard (GICS).
- Industrial Classification Benchmark (ICB).
- Thomson Reuters Business Classification (TRBC).
- Russell Global Sectors Classification (RGS).

The GICS applies a market-oriented approach, while the remaining structures apply a production-oriented approach. Each of these structures starts with a broad sector/industry classification and then divides further by subsector/sub-industry. As an example, consider the segmentation method shown in Figure 6.2 for the GICS Consumer Staples sector.

Figure 6.2: GICS Classification Example

Sector	Consumer Staples
Industry Group	Food, Beverage, and Tobacco
Industry	Beverages
Sub-Industry	Soft Drinks

PROFESSOR'S NOTE

The four classification structures differ on their application of sector versus industry. For example, GICS, TRBC, and RGS refer to their top level as sectors and then subdivide into industries. In contrast, ICB starts with industries and then subdivides into sectors.

An advantage to economic activity segmentation is that it allows portfolio managers to analyze, compare, and construct performance benchmarks based on specific sectors/industries. In addition, diversification benefits are enhanced when investments span different sectors/industries. The main disadvantage to this approach is that some companies, especially larger firms, may have business operations that are not easily assigned to one specific sector or industry.

Equity Indices and Benchmarks

Equity market indices and equity portfolio benchmarks can be constructed based on a combination of size/style and geographic segmentation. For example, the MSCI Europe Large Cap Value Index and the MSCI China Small Cap Index combine elements from both size/style and geographic classifications. Economic activity can also be used to subdivide equity indices by sector or industry. For example, the MSCI World Energy Index and the S&P Global Natural Resources Index track global companies categorized by sector/industry. Equity indices can also track unique client considerations, such as ESG practices.

MODULE QUIZ 6.1

1. Equities typically offer diversification benefits when combined with other major asset classes in a portfolio. **Discuss** *two* reasons an economic crisis may affect the risk

reduction achieved through diversification.

2. Assume an investor is segmenting the equity investment universe by economic activity. **Describe** *two* advantages for applying this segmentation approach.

MODULE 6.2: PORTFOLIO INCOME AND COSTS, SHAREHOLDER ENGAGEMENT, PASSIVE/ACTIVE MANAGEMENT

Video covering this content is available online.

LOS 6.c: Describe the types of income and costs associated with owning and managing an equity portfolio and their potential effects on portfolio performance.

There are several ways to earn (current) income from an equity portfolio.

Dividend income is the most obvious and often the largest. One additional consideration is how the dividends are taxed; they may be subject to income and/or withholding tax. Note that investors with a growth-oriented focus are less likely to seek portfolio income from dividends.

Some companies pay an **optional stock dividend**, which allows investors to choose between cash payments or stock dividends (i.e., new shares). This "option" between cash and stock dividends has value for the investor and can even be sold to another investor to immediately monetize the "option." On occasion some companies pay a **special dividend**, a one-time cash payment to investors (as opposed to the more typical periodic regular dividend).

Securities lending is another way to generate current income. Securities lending is often part of short selling. A short sale is the sale of a security that is not owned. To make the short sale, the seller must typically borrow the security in order to deliver it to the buyer when the short sale is made. The lender of the security is typically paid a fee and may also receive collateral or cash on which they can also earn a return. The lender also receives back the security lent at a future date. Securities lending is not unusual in index funds, large institutional portfolios such as pension funds, and endowments.

Security or **stock lending** does introduce additional issues. Short selling (like any sale) tends to drive down the security's price, which is not particularly beneficial to the lender (who still owns) the security. This is more likely to concern an active manager who expects their holdings to outperform, as opposed to a passive index fund manager. The lender must also be concerned with the quality of the borrower and the borrower's ability to return the securities. The borrower must also compensate the lender for any dividend payments that occur during the period of the loan. The lender generally loses the right to vote the shares during the period of the loan.

Lenders typically collect a small fee, in the range of 0.2%–0.5% annually for developed markets. This fee can increase substantially for emerging market stock loans or stocks that are in high demand for borrowing, known as *specials*. As mentioned, lenders can also earn extra income by reinvesting the borrower's posted cash collateral. However,

this reinvestment would be subject to various risks, such as market, credit, and operational risk. The reinvestment is likely to incur costs such as administration costs to keep track of everything.

Additional income strategies include:

- Writing options (i.e., selling options) to earn option premiums. A **covered call** strategy involves writing a call option on a stock owned. The writer then loses the upside of the security if the price increases above the strike price. Another option strategy is a **cash-covered put** (also known as a cash-secured put). This involves selling a put option on stock and setting aside sufficient cash equivalents to pay for the stock if the put option buyer exercises their right. The risk to the seller is the put buyer will only exercise the right if the stock declines in value.
- **Dividend capture** where an investor buys a stock right before its ex-dividend date, holds that stock through the ex-dividend date (entitling the investor to receive the dividend payment), and then sells the stock. The strategy is premised on and will be profitable if the stock price declines by less than the amount of the dividend. Theory says the stock should decline by the dividend amount but stock movements may differ from expectations given market forces (e.g., supply and demand) and/or income tax considerations.

Equity portfolios also incur fees and costs. These include:

- **Management** and **performance (incentive)** fees.
- **Administration** fees.
- **Marketing** and **distribution** fees.
- **Trading** costs.
- **Investment strategy** costs.

Management fees (i.e., ad valorem fees) compensate the manager and pay research and analysis, computer hardware and software, compliance, and processing trades. These fees are typically based on a percentage of assets under management and are due at regular time intervals (e.g., annually). The management fees vary and are usually higher for actively managed portfolios due to higher levels of investment analysis and portfolio turnover. The management fees are usually presented as a standard schedule of fees although they can be negotiated.

Some managers also earn **performance fees** (i.e., **incentive fees**) when the portfolio outperforms a stated return objective. These fees are more common for hedge funds and alternative managers. For example, suppose a portfolio exceeds a threshold return, the manager may earn a performance fee in the range of 10%–20% based on any capital appreciation above the threshold. Incentive fees are often one sided; the manager shares in outperformance but is not penalized for underperformance.

To protect an investor from paying for performance twice, there may be a **high-water mark**. For example, assume a hedge fund earns a performance fee for outperforming its return objective and then the portfolio declines in value. The manager will only earn an incentive fee on future appreciation above the previous level that was already compensated for.

PROFESSOR'S NOTE

We are about to briefly discuss various types of fees and costs associated with equity (and other) assets. Managers may charge one management fee that covers all of these. In other cases the manager may break out some or all of these and present them as separate fees. Other managers may not provide some of these services and a separate third party provides and charges for them. The bottom line is that services are not free and must be paid for. The way the bill is presented varies and investors need to consider all the costs in total.

Portfolios may be subject to **administration fees** associated with corporate activities, such as measuring risk/return and voting on company issues. The manager may include these services in the basic management fee; however, if these functions are conducted by external parties, administration fees will likely be separate from management fees. Additional administrative type fees include the following:

- *Custody fees*: charged for having a custodian hold assets independent of the portfolio manager.
- *Depository fees*: charged to assist custodians with segregating portfolio assets and for verifying portfolio compliance with investment limits, such as leverage and cash requirements.
- *Registration fees*: charged for registering ownership of mutual fund shares.

Some firms also charge separate **marketing** and **distribution** fees to cover:

- Employing marketing, sales, and client services teams.
- Advertising investment products and services.
- Sponsoring and presenting at relevant conferences.
- Developing and distributing marketing materials (e.g., brochures).
- Fees from online platforms that offer multiple fund options (i.e., platform fees).
- Sales commissions from financial intermediary services (e.g., financial planners or brokers).

Trading costs (i.e., transaction costs) refer to costs associated with buying and selling securities. These transaction costs can be either explicit or implicit. *Explicit costs* include broker commissions, stock exchange fees, and taxes. *Implicit costs* include bid-ask spreads, price impact from the transaction, and delay costs (i.e., slippage costs) from not completing an entire trade due to illiquidity.

Investment strategy costs are an implicit cost related to the chosen investment strategy. As mentioned earlier, actively managed funds that require more investment analysis and transactions will have higher fees/costs than passively managed funds. However passive funds like index funds may be subject to hidden costs from *predatory trading*. This additional cost stems from predatory traders purchasing (selling) shares that are soon to be added (removed) from an equity index. These transactions will create price impact costs for the fund and a profit for the predatory trader.

Strategies may demand or provide liquidity. For example, momentum strategies tend to demand liquidity by buying shares in an increasing market and selling shares in a

decreasing market. This is likely to create high market impact costs. Contrarian strategies are the opposite and tend to supply liquidity by buying shares in a decreasing market and selling shares in an increasing market. This is likely to create low market impact costs. Passive index replication strategies are likely to fall in the middle.

Shareholder Engagement

LOS 6.d: Describe the potential benefits of shareholder engagement and the role an equity manager might play in shareholder engagement.

Shareholder engagement refers to investors and managers interacting with companies in ways to potentially favorably impact the stock price. Engagement also benefits the company with improved corporate governance. Engagement includes participating in calls with the company and/or voting on corporate issues at general meetings (i.e., general assemblies). Such meetings may discuss:

- *Corporate strategy*: Company objectives, constraints, growth opportunities, and resources. Additional items may include company research, culture, products, competitive environment, and sustainability. Prioritizing stakeholder interests and balancing short-term obligations with long-term goals may also be items of interest for shareholders.
- *Capital allocation*: Selection process for new projects that add value, and strategy for potential mergers and acquisitions. Shareholders may also be interested in capital expenditures, use of leverage, payment of dividends, and equity financing.
- *Corporate governance*: Internal controls and functions of the company's audit and risk committees. Additional items include how the company manages regulatory and political risks.
- *Compensation structures*: Top management remuneration, incentives, and alignment with shareholder interests. Larger shareholders may influence future compensation structures.
- *Composition of the board of directors*: The board's experience, competence, diversity, culture, and effectiveness. Additional items include succession planning to address departing board members.

Shareholder engagement is not free because it requires an investment of time and resources.

- Active managers are more likely to do so in order to influence the company in ways they expect will improve performance.
- Passive managers are more likely to focus on minimizing these costs for themselves and for the companies they invest in.
- Larger investors can more easily absorb these costs as they spread the costs over a large amount of assets.
- Successful engagement benefits all shareholders, including "free riders." Free riders do not engage but reap the same benefit from any increase in the stock price.

- Engagement can also be used to address nonfinancial concerns (e.g., ESG issues), though such benefits may be harder to quantify.
- Other stakeholders such as employees, customers, creditors, regulators, and governments are also impacted by shareholder engagement outcomes. After engagement activities, these stakeholders may have more or less influence on a given company. For example, decisions to reduce company costs may impact employee compensation. The act of shareholder engagement can also be influenced by external factors, such as academic research or media coverage.

Beyond the issues of time, cost, and free riders; shareholder engagement has other limitations. Engagement may:

- Focus on short-term goals such as increasing cash flows or stock prices at the expense of the company's long-term goals.
- Lead to the acquisition of material, nonpublic information; increasing the risk of insider trading.
- Create potential conflicts of interest. For instance, an engaged portfolio manager may support company management because the management also invests in the manager's fund.

Equity managers play a key role in engagement and may assign specific employees responsibility for this task. Firms may also consult with outside experts for advice on shareholder voting and monitoring corporate governance issues. Some countries set legal and regulatory requirements and require firms to establish written documentation for how to meet these obligations.

Activist investing takes engagement even further. Activist investors may:

- Propose shareholder resolutions and launch media campaigns to influence the vote.
- Seek representation on the company's board of directors.
- Launch proxy fights to achieve their goals. A proxy fight means seeking to persuade other shareholders to support their proposals.

Active/Passive Management for Equity Portfolios

LOS 6.e: Describe rationales for equity investment across the active management spectrum.

Passive investors seek to replicate an equity market index or benchmark. Active managers seek to outperform the benchmark and add value. While the distinction seems clear, the reality is strategies may blur this distinction, such as closely track the index with limited deviations allowed to add some value. Active investing is riskier as the manager could also underperform the benchmark. Rationales for shifting to active management include:

- Confidence the manager has the expert knowledge and skill to add value.
- Client preferences—unless enough investors are interested, the manager will not be able to attract enough funds to cover the costs of active investing. Growth strategies

are often seen as more likely to benefit from active management while value style may be more passive.

  - Managers must also manage the investor's expectations for what to reasonably expect from the strategy; investors with unreasonable expectations are more likely to become dissatisfied.
  - However, strategies that become too popular can also be a problem. Too much capital flowing in may make it harder to find opportunities to add value.
  - Managers must also select an appropriate benchmark that investors will be interested in. The benchmark should contain a broad range of underlying equities with sufficient liquidity to support active management. Narrow limited benchmarks don't give the manager much room to deviate and are likely to support a more passive approach.
- Mandates from clients to invest in certain companies (e.g., ESG considerations) may require a more active approach as the manager may need to use screening and other techniques to meet the mandates.

The results of active management are less certain and the costs are higher. Active management is also subject to other potential risks:

- *Reputation risk* results from violations of rules, regulations, client agreements, or moral principles.
- *Key person risk* results from individuals who are essential to the success of the fund leaving the investment firm.
- *Higher portfolio turnover* which can lead to higher tax burdens. Active funds could be structured to limit tax consequences, but the techniques used to do this can themselves be costly and risky. Managers who use such techniques need additional knowledge to navigate the applicable tax regulations, which of course vary by country and situation.

MODULE QUIZ 6.2

1. **Explain** why actively managed portfolios are typically subject to higher fees and costs than passively managed portfolios.
2. **Explain** how shareholder engagement can benefit investors who are not actively involved in company issues.
3. **Identify** two disadvantages of shareholder engagement activities.
4. A client is concerned with low fees, seeks substantial value added versus their benchmark, has numerous ESG restrictions, and has selected a narrowly defined benchmark made up of large companies. Based on the client's concerns, **explain** *two* reasons the client should favor a passive approach and *two* reasons the client should favor an active approach.
5. Compared to passively managed funds, active funds tend to have higher research and trading costs. **Identify** and **describe** *two* additional types of risk for active

managers and investors.

MODULE 6.3: BENCHMARK SELECTION

Video covering this content is available online.

LOS 6.f: Discuss considerations in choosing a benchmark for an equity portfolio.

An equity index used as a benchmark for equity investment strategies must be (1) rules-based, (2) transparent, and (3) investable.

Rules-based: The rules for including and excluding stocks in the portfolio, the weighting scheme, and the rebalancing frequency must be consistent, objective, and predictable so investors can replicate the investment performance of the index.

Transparent: The rules underlying the index are public, clearly stated, and understandable to investors.

Investable: Investors can replicate the return and risk performance of the index.

Considerations when choosing a benchmark include (1) determining the desired market and risk exposures, and (2) identifying the methods used in constructing and maintaining the benchmark index.

Market and Risk Exposures

The choice of portfolio exposure includes the choice of which markets to invest in as well as the various risks the portfolio will be exposed to. Overall, these choices are determined by the investor's risk and return objectives and portfolio constraints identified in the investment policy statement.

Some examples of **market exposure** choices are:

- Choosing between broad market exposure and focused exposure to certain sectors.
- Choosing between domestic or international exposure.
- Choosing among developed, emerging, or frontier markets.

The **risk factor exposure** of an equity portfolio refers to the expected sensitivity of portfolio returns to various risk factors. Examples of risk factors used in portfolio construction include market risk (beta), firm size, style (e.g., growth vs. value), and prior returns (momentum). Other factors considered include the liquidity, volatility, and firm "quality." We examine portfolio risk factors in greater detail later in this review.

Identifying the Methods Used in Constructing and Maintaining an Index

The construction of an index starts with the method of identifying stocks for inclusion; this method can be **exhaustive** (every stock in a defined universe; e.g., the CRSP U.S. Total Market Index) or **selective** (a subset of stocks within a universe; e.g., the S&P 500 Index or the Dow Jones Industrial Average [DJIA]).

Methods of index-weighting include: (1) market-cap weighting, (2) price weighting, (3) equal weighting, and (4) fundamental weighting.

Market-cap weighting refers to weighting each portfolio stock by its total market capitalization as a percentage of the total capitalization of all the stocks in the index. The market portfolio in the CAPM and many indexes, such as the S&P 500 Index, are market-cap weighted. The most common market-cap weighting method in practice is based on each stock's free-floating shares (i.e., outstanding shares that are not closely held and, therefore, available for trading by market participants).

Price weighting refers to weighting each portfolio stock by its price. This can be achieved with a portfolio that holds an equal number of shares of each index stock, which gives stocks with higher share prices larger index weights. The DJIA is an example of a price-weighted index.

Equal weighting refers to investing equal amounts in each portfolio stock. Equal weighting reduces concentration risk, especially compared to market-cap weighting for the large-cap segment where capitalizations vary widely. For example, the weight of the five largest firms in the S&P 500 Index in 2018 was greater than the weight of the 250 smallest firms in the index. Equal weighting also reduces changes in sector exposures as market prices change compared to market-cap weighting. Equal weighting is factor-indifferent; it randomizes factor mispricing and, because of its small-cap bias relative to market-cap weighting, returns are more volatile than for market-cap weighting. Equal weighting can produce marginally better returns before transaction costs when stock prices vary around their intrinsic values.

Fundamental weighting refers to weighting index stocks by their proportions of the total index value of a fundamental factor, such as sales, income, or dividends. For example, a stock of a firm that pays 3% of all the dividends paid by index companies will have a 3% weight in a dividend-weighted index.

Stock concentration is a key concern in the selection of the appropriate index. Concentration can be captured using the concept of "effective number of stocks," which can be measured using the **Herfindahl-Hirschman index (HHI)**. HHI is the sum of the squared weights of the individual stocks in the portfolio:

$$\text{HHI} = \sum_{i=1}^{n} w_i^2$$

where:

n = number of stocks in the portfolio

w_i = weight of stock i

HHI ranges from $\frac{1}{n}$ (an equally weighted portfolio) to 1 (a single stock portfolio), so as HHI increases, concentration risk increases.

The *effective number* of stocks is the reciprocal of the HHI:

$$\text{effective number of stocks} = \frac{1}{\text{HHI}}$$

For example, a market-cap weighted index with 500 stocks might have an HHI of 0.01 and, therefore, an effective number of stocks of $\frac{1}{0.01} = 100$. The fact that 100 is less than

the number of stocks in the portfolio reflects the disproportionate effect of the largest capitalization stocks in the index. An *equal weighted* index of 500 stocks would have an HHI of 0.002 and an effective number of stocks of $\frac{1}{0.002} = 500$.

Rebalancing is the process of adjusting portfolio weights as index weightings change. For an equal weighted index, portfolio weights are no longer equal as soon as prices change. Price-weighted index weights change in response to stock splits and stock dividends. Market-cap-weighted portfolio weights require rebalancing when index firms issue new shares or repurchase shares in a significant amount. Rebalancing incurs trading costs (and possibly tax costs) and will decrease returns. To reduce such costs, rebalancing is often done only periodically, often quarterly.

Reconstitution is the process of removing and replacing stocks that no longer fit the desired market exposure of an index. For example, if a small-cap stock's capitalization increases, it may become a mid-cap stock and have to be removed from and possibly replaced in a small-cap index. Reconstitution will also reduce index portfolio returns as trading costs are incurred.

Two practices are used to reduce trading costs associated with migration of a stock between indexes on reconstitution dates. **Buffering** refers to the practice of establishing a threshold level for the change in a firm's capitalization rank that must be met before moving it from one index to another on a reconstitution date. Consider a large-cap index comprising the stocks of the 200 largest firms in a market and a mid-cap index of the next 300 stocks in capitalization rank. If a firm in the mid-cap index increases in capitalization so that it is one of the largest 200 firms, it is not actually moved into the large-cap index until its rank increases beyond the *buffer zone*—for example, until it has reached the size rank of 150 or higher at the next reconstitution date.

An alternative method of reducing the transaction costs of stock migration among indexes is termed **packeting**. With packeting, when a mid-cap company's capitalization increases so that it qualifies as large-cap stock, half of the portfolio position is moved to the large-cap index on the reconstitution date. If the stock still meets the criteria for inclusion in the large-cap index at the next reconstitution date, the remainder of the position is moved from the mid-cap to the large-cap index.

MODULE QUIZ 6.3

1. Which of the following is a necessary characteristic for an equity index to have in order to use it as a benchmark for an equity portfolio?
   A. Selective.
   B. Investable.
   C. Flexible.

KEY CONCEPTS

LOS 6.a

The roles of equities in a portfolio include capital appreciation, dividend income, diversification benefits, and the potential to hedge inflation.

The allocation to equity must be consistent with the client's investment objectives and constraints. For investors with environmental, social, and governance (ESG) considerations, portfolio managers may apply negative or positive screening approaches to select appropriate companies or use thematic or impact investing techniques.

LOS 6.b

The equity investment universe can be segmented by:

- Size (market capitalization) and style (growth, value, or blended).
- Geographic segmentation (which includes developed markets, emerging markets, and frontier markets).
- Economic activity segmentation by sectors or industries. Classification can be based on a market-oriented or a production-oriented approach.
- Or combinations of the previous can be used.

LOS 6.c

Income can be generated from:

- Dividends, mostly in the form of regular dividends received.
- Lending securities for a fee and earning funds on cash collateral received.
- Writing options for the premium received.
- Dividend capture through buying a stock just before and selling it just after it goes ex-dividend.

Managers typically charge regular and some charge performance-based management fees. Some managers cover all services in the management fee. Others also charge additional fees for specific additional services, or coordinate with third-party providers who provide and charge fees for specific services. The bottom line is to determine the total fees regardless of how they are broken down.

Other costs to consider are:

- Transaction and trading costs, which may be explicit or implicit.
- Strategy costs—generally active strategies will have higher cost. Passive strategies may incur hidden costs such as predatory pricing when others anticipate and trade ahead of the passive investor.
- Liquidity demands—momentum strategies that buy in up or sell in down markets demand liquidity and typically pay high market impact costs. Contrarian strategies are the opposite.

LOS 6.d

Shareholder engagement refers to shareholders and managers seeking to influence the companies they invest in through calls and/or shareholder voting. Engagement benefits the company with improved corporate governance and may also benefit shareholders through higher stock price. Free riders who do not incur the costs of engagement also benefit.

Activist investors take this further and propose resolutions to be voted on and seek the support of others or engage in proxy fights to achieve their goals.

LOS 6.e

Equity portfolios are often characterized as being actively or passively managed. However, in practice, portfolios may exhibit characteristics from both investment strategies. Rationales for equity portfolios to span across the passive–active spectrum include manager confidence, client preferences, benchmark selection, client mandates, active management costs/risks, and taxes.

LOS 6.f

An equity index as a benchmark for equity investment strategies must be (1) rules-based, (2) transparent, and (3) investable.

Considerations in choosing a benchmark include (1) determine the desired market exposures, (2) be consistent with the client's objectives and constraints, and (3) identify the method used for constructing the index.

Constructing and maintaining an index involves the following:

- The weighting method to construct the index: (1) market-cap weighting, (2) price weighting, (3) equal weighting, or (4) fundamental weighting.
- Considering the level of stock concentration. The effective number of stocks can be determined as the reciprocal of the Herfindahl-Hirschman index (HHI).

$$\text{HHI} = \sum_{i=1}^{n} w_i^2$$

$$\text{effective number of stocks} = \frac{1}{\text{HHI}}$$

- The frequency of rebalancing (updating the weights of the stocks in the index) and reconstitution (removing and replacing stocks that no longer fit the index market exposure).

ANSWER KEY FOR MODULE QUIZZES

Module Quiz 6.1

1. Risk reduction is likely to be less than expected.
   - The correlations are likely to move upward towards 1.0.
   - The volatility of the assets is likely to increase.

   (LOS 6.a)

2. - It allows portfolio managers to analyze, compare, and construct performance benchmarks based on specific sectors or industries.
   - Diversification benefits are enhanced when investing across sectors or industries.

   (LOS 6.b)

Module Quiz 6.2

1. Such funds require more investment analysis and portfolio turnover than passively managed funds. (LOS 6.c)

2. They can earn a free ride, benefiting from the activities of others to increase the stock price without the time and cost of engagement. (LOS 6.d)

3. (1) The cost and time commitment from shareholders and management, (2) the desire to influence cash flows or stock prices in the short term, at the expense of long-term goals, (3) the potential for insider trading violations, and (4) the potential for conflicts of interest. (LOS 6.d)

4. Passive: (1) Passive managers can charge lower fees; (2) The narrowly *defined* benchmark of presumably efficient large cap stocks is not going to provide the opportunity for active managers to find ways to add value.

   Active: (1) Active management is required to meet the desired value added; (2) The ESG restrictions will require an active manager who uses various screening and other techniques to simultaneously meet this constraint *and* the overall objectives. This client sounds highly unrealistic in their objectives, but that was not the question asked. (LOS 6.e)

5. - Reputation risk results from violations to rules, regulations, client agreements, or moral principles.
   - Key person risk results from essential individuals leaving the investment firm.

   (LOS 6.e)

Module Quiz 6.3

1. **B** An equity index that is suitable as a benchmark should be rules-based, transparent, and investable. (LOS 6.f)

READING 7

OVERVIEW OF FIXED-INCOME PORTFOLIO MANAGEMENT

EXAM FOCUS

This reading expects candidates to understand the different roles of fixed-income securities in portfolios and the two types of fixed-income mandates (liability-based mandates and total return mandates), along with bond market liquidity. In addition, candidates must take the time to understand and practice the model for projecting or decomposing a bond's return. This reading also discusses liability-driven investing (LDI) and how to develop a fixed-income portfolio based on an investor's balance sheet. Lastly, candidates must understand the risks and techniques associated with LDI.

MODULE 7.1: ROLE OF FIXED INCOME

Video covering this content is available online.

LOS 7.a: Discuss roles of fixed-income securities in portfolios and how fixed-income mandates may be classified.

The fixed-income market is highly varied; it includes publicly traded securities such as bond and money market securities, as well as nonpublic instruments such as loans and private placement securities. The market also varies by maturity and credit quality segments. There are structure differences such as straight bonds without embedded options, instruments with embedded prepayment options, variable coupon structures, and inflation adjustment features.

As an asset class used in a portfolio, fixed income may provide:

1. *Diversification*. In general, fixed income has low correlation to equity markets. Adding an asset class to an existing portfolio with a correlation of less than +1 improves its risk-adjusted return through diversification benefits. The lower the correlation, the greater the diversification benefit. Specific correlation numbers vary by time period and type of instrument used. For 2000 to 2019, the correlations of various fixed-income indexes to the S&P 500 equity index ranged from –0.30 for 10-year U.S. Treasury bonds to +0.63 for U.S. high-yield (credit-risky) bonds.

   Diversification can be achieved internally within the fixed-income asset class, primarily due to changes in credit spreads causing divergence in the performance of investment-grade securities versus credit-risky high-yield (below investment-grade) securities.

These correlations are not always stable over time. A particular problem is flight to quality. During periods of market stress, all lower-quality and riskier assets, including high-yield bonds and equities, tend to decline together (correlation approaching +1) as investors sell these assets and buy high-quality developed-market government bonds for safety. Thus, correlation of these government bonds to riskier assets declines during periods of stress and may be negative.

The volatility of bond market returns can also vary over time, increasing significantly for high-yield bonds in times of market crisis.

2. *Regular cash flow.* Most fixed income provides regular, predictable cash flow that investors can use to meet expected future obligations. This is convenient for an individual needing regular living expenses or specific periodic expenditures such as college tuition payments. Institutions such as insurance companies that must make periodic payments to policyholders could structure and dedicate a portfolio of bond assets to meet these payouts. Investors could also build a buy-and-hold laddered portfolio of bonds to provide regular cash flow. Buy and hold means no sales or trading are planned, and laddered means a somewhat equal amount of par comes due periodically. Implicit in this discussion is that there is no significant credit risk and that all payments will be made on the bonds.
3. *Inflation hedge.* While not the first thing most investors would think of, some types of bonds do provide forms of inflation protection. Standard fixed-coupon (nominal rate) bonds do not. For simplicity, assume the bonds are purchased at par so that initial yield is the coupon rate. The purchase yield and coupon reflect nominal compensation for an expected future rate of inflation and a real return above that rate of inflation. If inflation increases, the coupon cash flow is fixed and the investor suffers on an inflation-adjusted basis. Looked at another way, the yield a new investor would want increases and the price of the bond must decline.
   - Inflation-linked (also called real rate or real return) bonds provide direct protection for the effect of inflation. Like regular bonds, the coupon payment amount is the coupon rate × par. But unlike regular bonds, the par adjusts for inflation. If 1 million par is purchased and inflation is 5%, the par increases by 5% to 1.05 million. (For later comparison with floating-coupon bonds, assume the previous inflation rate was 3%, though this does not directly affect the calculations for the inflation-linked bond.) That leads the coupon payment amount to increase by 5% as well. For example, if the real rate were 0.5%, the first (annualized) coupon payment is 5,250 (1,050,000 × 0.005). This adjustment continues every period to compensate for cumulative inflation over the life of the bond. At expiration, inflation-adjusted par is paid to the investor. Thus, both coupon payments and par are inflation protected.
   - Floating-coupon (floating-rate) securities also provide inflation protection. The coupon rate is set by a formula such as the market reference rate (MRR) + 100 basis points. If inflation and MRR are initially 3.0% and 3.5%, the first (annual) coupon payment on 1 million par would be 45,000 [1,000,000 (0.035 + 0.01)]. If inflation then increases by 2% to 5.0%, it is likely MRR will also increase by 2% to 5.5% and the next coupon payment will increase to 65,000 [1,000,000 (0.055 +

0.01)]. No adjustment is made to the par amount. Thus, it is said the coupons are inflation protected but not the principal.

PROFESSOR'S NOTE

For some candidates, misunderstanding this information is easy. In theory, both inflation-linked and floating-coupon securities provide full inflation protection but do so in different ways. Imagine fixed-coupon nominal rate (NR), inflation-linked, and floating-coupon bonds from the same issuer with the same maturity. In a fully efficient market, all three would be priced to reflect the same consensus expectations for inflation and have the same expected return. (Because they respond to inflation risk differently, there could be small differences.) If the actual rates of inflation turn out to higher (lower) than initial consensus expectations, the actual returns for the inflation linked and floating coupon would be superior (inferior) to the NR bond. Between the inflation linked and floating coupon, one or the other may end up being best depending on the actual path of future inflation. Notice in the earlier example with inflation increasing from 3% to 5% the par and coupon payment amount for the inflation-linked bond increased by 5% while the par of the floating coupon was unchanged, but the coupon payment amount went from 45,000 to 65,000, an increase of 44.4%.

The bottom line is to accept the conclusions as presented in the reading; they are correct.

Fixed-Income Mandates

Fixed-income investment mandates can be classified into two major types: liability-based mandates and total return mandates.

Liability-based mandates are portfolio assets that are managed solely to meet expected future liability payouts. All asset cash flows are reinvested until paid out to meet the liabilities. This is often referred to as immunization. There are several forms and variations of **immunization**.

- **Cash-flow matching** is the simplest form of immunization. The assets are selected so that cash flows occur when and in the size needed to meet the liability payouts.
- **Duration matching** matches the duration of the assets and liabilities so the two will fluctuate in a similar way as interest rates change, such that their ending values will remain matched.
- **Contingent immunization (CI)** is a hybrid of active management and immunization. The portfolio is initially funded with more money than required to meet the future liability payouts. The present value of the assets (PVA) exceeds the present value of the liabilities (PVL). The difference is the surplus. As long as the surplus is positive, the portfolio can be managed in any way the manager believes will add value. If CI succeeds, the surplus will grow and the ultimate cost of CI will be less than that of initially immunizing. If the active management is unsuccessful and the surplus declines to zero, the portfolio must be immediately immunized and the ultimate cost of CI will be more than that of initial immunization but by a known amount.

- **Derivatives overlays**, involving the use of futures or swaps contracts, can be used to implement duration matching or contingent immunization strategies.

Total return mandates do not seek to fund future liabilities but may target an absolute rate of return or, more commonly, seek to equal or outperform (relative return versus) a benchmark. The key metrics to evaluate such portfolios are **active return** (portfolio return less return of the relevant benchmark, also called value added or alpha) and volatility of that active return (standard deviation of active return, also called **active risk**, **tracking error**, or **tracking risk**). Total return mandates include the following:

- **Pure indexing**, which attempts to replicate the performance of a bond index. It targets zero active return and risk. Unlike the equity market, the large number of individual bonds in most indexes and their potential lack of liquidity makes literal duplication of the index (holding every issue in the same weight as in the index) impractical. Most pure bond indexing instead seeks to exactly match all the risk factors of the index (such as duration, credit or quality, sectors, and prepayment risks) while still allowing the manager some leeway on the individual bonds selected. The turnover (trading) in the portfolio should be low and similar to the turnover in the index.
- **Enhanced indexing** allows some additional flexibility in constructing the portfolio and seeks to add some modest active return. Typically, duration (interest rate risk) is still matched to the index, but some risk mismatches such as modest over- or underweighting of sectors and quality are allowed. Slightly higher portfolio turnover is likely.
- **Active management** allows much larger deviations from the risk factors of the index and seeks greater active return. Duration can also be mismatched and portfolio turnover can be much higher.

Fixed-Income Portfolio Measures

LOS 7.b: Describe fixed-income portfolio measures of risk and return as well as correlation characteristics.

PROFESSOR'S NOTE

This section reviews some fundamental definitions of fixed-income risk and return measures, almost all of which have been met at previous levels of the CFA program. Remember the Level III exam will likely be less focused on the calculation of these measures than previous levels were and more focused on the interpretation and use of these measures in a portfolio management situation. Understanding what the measures are telling you is the key focus in this section.

Key bond risk and return measures are displayed here: