

PORTFOLIO MANAGEMENT: AN OVERVIEW

PORTFOLIO MANAGEMENTPROCESS

Describe the portfolio approach to investing.

The **portfolio perspective** refers to evaluating individual investments by their contribution to the risk and return of an investor's portfolio. The alternative to taking a portfolio perspective is to examine the risk and return of individual investments in isolation. An investor who holds all his wealth in a single stock because he believes it to be the best stock available is not taking the portfolio perspective—his portfolio is very risky compared to holding a diversified portfolio of stocks. Modern portfolio theory concludes that the extra risk from holding only a single security is not rewarded with higher expected investment returns. Conversely, diversification allows an investor to reduce portfolio risk without necessarily reducing the portfolio's expected return.

In the early 1950s, the research of Professor Harry Markowitz provided a framework for measuring the risk-reduction benefits of diversification. Using the standard deviation of returns as the measure of investment risk, he investigated how combining risky securities into a portfolio affected the portfolio's risk and expected return. One important conclusion of his model is that unless the returns of the risky assets are perfectly positively correlated, risk is reduced by diversifying across assets.

In the 1960s, professors Treynor, Sharpe, Mossin, and Lintner independently extended this work into what has become known as modern portfolio theory (MPT). MPT results in equilibrium expected returns for securities and portfolios that are a linear function of each security's or portfolio's market risk (the risk that cannot be reduced by diversification).

One measure of the benefits of diversification is the **diversification ratio**. It is calculated as the ratio of the risk of an equally weighted portfolio of n securities (measured by its standard deviation of returns) to the risk of a single security selected at random from the

n securities. If the average standard deviation of returns for the n stocks is 25%, and the standard deviation of returns for an equally weighted portfolio of the n stocks is 18%, the diversification ratio is $18 / 25 = 0.72$. If the standard deviation of returns for an equally weighted portfolio is 25%, there are no diversification benefits and the diversification ratio equals one. A *lower* diversification ratio indicates a *greater* risk-reduction benefit from diversification.

While the diversification ratio provides a quick measure of the potential benefits of diversification, an equal-weighted portfolio is not necessarily the portfolio that provides the greatest reduction in risk. Computer optimization can calculate the portfolio weights that will produce the lowest portfolio risk (standard deviation of returns) for a given group of securities.

Portfolio diversification works best when financial markets are operating normally; diversification provides less reduction of risk during market turmoil, such as the credit contagion of 2008. During periods of financial crisis, correlations tend to increase, which reduces the benefits of diversification.

Describe the steps in the portfolio management process.

There are three major steps in the portfolio management process:

Step 1: The **planning step** begins with an analysis of the investor's risk tolerance, return objectives, time horizon, tax exposure, liquidity needs, income needs, and any unique circumstances or investor preferences.

This analysis results in an **investment policy statement** (IPS) that details the investor's investment objectives and constraints. It should also specify an objective benchmark (such as an index return) against which the success of the portfolio management process will be measured. The IPS should be updated at least every few years and any time the investor's objectives or constraints change significantly.

Step 2: The **execution step** involves an analysis of the risk and return characteristics of

various asset classes to determine how funds will be allocated to the various asset types. Often, in what is referred to as a *top-down* analysis, a portfolio manager will examine current economic conditions and forecasts of such macroeconomic variables as GDP growth, inflation, and interest rates, in order to identify the asset classes that are most attractive. The resulting portfolio is typically diversified across such asset classes as cash, fixed-income securities, publicly traded equities, hedge funds, private equity, and real estate, as well as commodities and other real assets.

Once the asset class allocations are determined, portfolio managers may attempt to identify the most attractive securities within the asset class. Security analysts use model valuations for securities to identify those that appear undervalued in what is termed *bottom-up* security analysis.

Step 3: The **feedback step** is the final step. Over time, investor circumstances will change, risk and return characteristics of asset classes will change, and the actual weights of the assets in the portfolio will change with asset prices. The portfolio manager must monitor these changes and **rebalance** the portfolio periodically in response, adjusting the allocations to the various asset classes back to their desired

percentages. The manager must also measure portfolio performance and evaluate it relative to the return on the benchmark portfolio identified in the IPS.

Describe types of investors and distinctive characteristics and needs of each.

Individual investors save and invest for a variety of reasons, including purchasing a house or educating their children. In many countries, special accounts allow citizens to invest for retirement and to defer any taxes on investment income and gains until the funds are withdrawn. Defined contribution pension plans are popular vehicles for these investments. Pension plans are described later in this topic review.

Many types of **institutions** have large investment portfolios. An **endowment** is a fund that is dedicated to providing financial support on an ongoing basis for a specific purpose. For example, in the United States, many universities have large endowment funds to support their programs. A **foundation** is a fund established for charitable purposes to support specific types of activities or to fund research related to a particular disease. A typical foundation's investment objective is to fund the activity or research on a continuing basis without decreasing the real (inflation adjusted) value of the portfolio assets. Foundations and endowments typically have long investment horizons, high risk tolerance, and, aside from their planned spending needs, little need for additional liquidity.

The investment objective of a **bank**, simply put, is to earn more on the bank's loans and investments than the bank pays for deposits of various types. Banks seek to keep risk low and need adequate liquidity to meet investor withdrawals as they occur.

Insurance companies invest customer premiums with the objective of funding customer claims as they occur. Life insurance companies have a relatively long-term investment horizon, while property and casualty (P&C) insurers have a shorter investment horizon because claims are expected to arise sooner than for life insurers.

Investment companies manage the pooled funds of many investors. **Mutual funds** manage these pooled funds in particular styles (e.g., index investing, growth investing, bond investing) and restrict their investments to particular subcategories of investments (e.g., large-firm stocks, energy stocks, speculative bonds) or particular regions (emerging market stocks, international bonds, Asian-firm stocks).

Sovereign wealth funds refer to pools of assets owned by a government. For example, the Abu Dhabi Investment Authority, a sovereign wealth fund in the United Arab Emirates funded by Abu Dhabi government surpluses, has approximately USD 700 billion in assets.¹

Figure provides a summary of the risk tolerance, investment horizon, liquidity needs, and income objectives for different types of investors.

Figure Characteristics of Different Types of Investors

Investor	Risk Tolerance	Investment Horizon	Liquidity Needs
Individuals	Depends on individual	Depends on individual	Depends on individual
Banks	Low	Short	High
Endowments	High	Long	Low
Insurance	Low	Long—life Short—P&C	High
Mutual funds	Depends on fund	Depends on fund	High
Defined benefit pensions	High	Long	Low



Video covering this content is available online.

Describe defined contribution and defined benefit pension plans.

A **defined contribution pension plan** is a retirement plan in which the firm contributes a sum each period to the employee's retirement account. The firm's contribution can be based on any number of factors, including years of service, the employee's age, compensation, profitability, or even a percentage of the employee's contribution. In any event, the firm makes no promise to the employee regarding the future value of the plan assets. The investment decisions are left to the employee, who assumes all of the investment risk.

In a **defined benefit pension plan**, the firm promises to make periodic payments to employees after retirement. The benefit is usually based on the employee's years of service and the employee's compensation at, or near, retirement. For example, an employee might earn a retirement benefit of 2% of her final salary for each year of service. Consequently, an employee with 20 years of service and a final salary of \$100,000, would receive \$40,000 ($\$100,000 \text{ final salary} \times 2\% \times 20 \text{ years of service}$) each year upon retirement until death. Because the employee's future benefit is defined, the employer assumes the investment risk. The employer makes contributions to a fund established to provide the promised future benefits. Poor investment performance will increase the amount of required employer contributions to the fund.

ASSET MANAGEMENT AND POOLED INVESTMENTS

Describe aspects of the asset management industry.

The asset management industry comprises firms that manage investments for clients. Asset management firms include both independent managers and divisions of larger financial services companies. They are referred to as **buy-side firms**, in contrast with

sell-side firms such as broker-dealers and investment banks.

Full-service asset managers are those that offer a variety of investment styles and asset classes. **Specialist asset managers** may focus on a particular investment style or a particular asset class. A **multi-boutique firm** is a holding company that includes a number of different specialist asset managers.

A key distinction is between firms that use active management and those that use passive management. **Active management** attempts to outperform a chosen benchmark through manager skill, for example by using fundamental or technical analysis. **Passive management** attempts to replicate the performance of a chosen benchmark index. This may include traditional broad market index tracking or a **smart beta** approach that focuses on exposure to a particular market risk factor.

Passive management represents about one-fifth of assets under management. Its share of industry revenue is even smaller because fees for passive management are lower than fees for active management.

Asset management firms may also be classified as traditional or alternative, based on the asset classes they manage. Traditional asset managers focus on equities and fixed-income

securities. Alternative asset managers focus on asset classes such as private equity, hedge funds, real estate, or commodities. Profit margins tend to be higher for the alternative asset classes. As a result, many traditional asset managers have been moving into this area, somewhat blurring the distinction between these types of firms.

Some trends in the asset management industry are worth noting:

- The market share for passive management has been growing over time. This is due in part to the lower fees passive managers charge investors, and in part to questions about whether active managers are actually able to add value over time on a risk-adjusted basis, especially in developed markets that are believed to be relatively efficient.
- The amount of data available to asset managers has grown exponentially in recent years. This has encouraged them to invest in information technology and third-party services to process these data, attempting to capitalize on information quickly to make investment decisions.
- **Robo-advisors** are a technology that can offer investors advice and recommendations based on their investment requirements and constraints, using a computer algorithm. These advisors increasingly appeal to younger investors and those with smaller portfolios than have typically been served by asset management firms. They have also lowered the barriers to entry into the asset management industry for firms such as insurance companies.

Describe mutual funds and compare them with other pooled investment products.

Mutual funds are one form of **pooled investments** (i.e., a single portfolio that contains investment funds from multiple investors). Each investor owns shares representing ownership of a portion of the overall portfolio. The total net value of the assets in the fund (pool) divided by the number of such shares issued is referred to as the **net asset value** (NAV) of each share.

With an **open-end fund**, investors can buy newly issued shares at the NAV. Newly invested cash is invested by the mutual fund managers in additional portfolio securities. Investors can **redeem** their shares (sell them back to the fund) at NAV as well. All mutual funds charge a fee for the ongoing management of the portfolio assets, which is expressed as a percentage of the net asset value of the fund. **No-load funds** do not charge additional fees for purchasing shares (up-front fees) or for redeeming shares (redemption fees). **Load funds** charge either up-front fees, redemption fees, or both.

Closed-end funds are professionally managed pools of investor money that do not take new investments into the fund or redeem investor shares. The shares of a closed-end fund trade like equity shares (on exchanges or over-the-counter). As with open-end funds, the portfolio management firm charges ongoing management fees.

Types of Mutual Funds

Money market funds invest in short-term debt securities and provide interest income with very low risk of changes in share value. Fund NAVs are typically set to one currency unit, but there have been instances over recent years in which the NAV of some funds declined when the securities they held dropped dramatically in value. Funds are differentiated by the types of money market securities they purchase and their average maturities.

Bond mutual funds invest in fixed-income securities. They are differentiated by bond maturities, credit ratings, issuers, and types. Examples include government bond funds, tax-exempt bond funds, high-yield (lower rated corporate) bond funds, and global bond funds.

A great variety of **stock mutual funds** are available to investors. **Index funds** are **passively managed**; that is, the portfolio is constructed to match the performance of a particular index, such as the Standard & Poor's 500 Index. **Actively managed** funds refer to funds where the management selects individual securities with the goal of producing returns greater than those of their benchmark indexes. Annual management fees are higher for actively managed funds, and actively managed funds have higher turnover of portfolio securities (the percentage of investments that are changed during the year). This leads to greater tax liabilities compared to passively managed index funds.

Other Forms of Pooled Investments

Exchange-traded funds (ETFs) are similar to closed-end funds in that purchases and sales are made in the market rather than with the fund itself. There are important differences, however. While closed-end funds are often actively managed, ETFs are most often invested to match a particular index (passively managed). With closed-end funds, the market price of shares can differ significantly from their NAV due to imbalances between investor supply and demand for shares at any point in time. Special redemption provisions for ETFs are designed to keep their market prices very close to their NAVs.

ETFs can be sold short, purchased on margin, and traded at intraday prices, whereas open-end funds are typically sold and redeemed only daily, based on the share NAV calculated with closing asset prices. Investors in ETFs must pay brokerage commissions when they trade, and there is a spread between the bid price at which market makers will buy shares and the ask price at which market makers will sell shares. With most ETFs, investors receive any dividend income on portfolio stocks in cash, while open-end funds offer the alternative of reinvesting dividends in additional fund shares. One final difference is that ETFs may produce less capital gains liability compared to open-end index funds. This is because investor sales of ETF shares do not require the fund to sell any securities. If an open-end fund has significant redemptions that cause it to sell appreciated portfolio shares, shareholders incur a capital gains tax liability.

A **separately managed account** is a portfolio that is owned by a single investor and managed according to that investor's needs and preferences. No shares are issued, as the single investor owns the entire account.

Hedge funds are pools of investor funds that are not regulated to the extent that mutual funds are. Hedge funds are limited in the number of investors who can invest in the fund and are often sold only to qualified investors who have a minimum amount of overall portfolio wealth. Minimum investments can be quite high, often between \$250,000 and \$1 million.

Private equity and **venture capital** funds invest in portfolios of companies, often with the intention to sell them later in public offerings. Managers of funds may take active roles in managing the companies in which they invest.

BASICS OF PORTFOLIO PLANNING AND CONSTRUCTION

Describe the reasons for a written investment policy statement (IPS).

An investment manager is very unlikely to produce a good result for a client without understanding that client's needs, circumstances, and constraints.

A written **investment policy statement** will typically begin with the investor's goals in terms of risk and return. These should be determined jointly, as the goals of high returns and low risk (while quite popular) are likely to be mutually exclusive in practice.

Investor expectations in terms of returns must be compatible with investor's tolerance for risk (uncertainty about portfolio performance).

Describe the major components of an IPS.

The major components of an IPS typically address the following:

- *Description of Client* circumstances, situation, and investment objectives.
- *Statement of the Purpose* of the IPS.
- *Statement of Duties and Responsibilities* of investment manager, custodian of assets, and the client.
- *Procedures* to update IPS and to respond to various possible situations.
- *Investment Objectives* derived from communications with the client.
- *Investment Constraints* that must be considered in the plan.

- *Investment Guidelines* such as how the policy will be executed, asset types permitted, and leverage to be used.
- *Evaluation of Performance*, the benchmark portfolio for evaluating investment performance, and other information on evaluation of investment results.
- *Appendices* containing information on strategic (baseline) asset allocation and permitted deviations from policy portfolio allocations, as well as how and when the portfolio allocations should be rebalanced.

In any case, the IPS will, at a minimum, contain a clear statement of client circumstances and constraints, an investment strategy based on these, and some benchmark against which to evaluate the account performance.

Describe risk and return objectives and how they may be developed for a client.

The **risk objectives** in an IPS may take several forms. An **absolute risk objective** might be to “have no decrease in portfolio value during any 12-month period” or to “not decrease in value by more than 2% at any point over any 12-month period.” Low absolute percentage risk objectives such as these may result in portfolios made up of securities that offer guaranteed returns (e.g., U.S. Treasury bills).

Absolute risk objectives can also be stated in terms of the probability of specific portfolio results, either percentage losses or dollar losses, rather than strict limits on portfolio results. Examples are as follows:

- “No greater than a 5% probability of returns below –5% in any 12-month period.”
- “No greater than a 4% probability of a loss of more than \$20,000 over any 12-month period.”

An absolute return objective may be stated in nominal terms, such as “an overall return of at least 6% per annum,” or in real returns, such as “a return of 3% more than the annual inflation rate each year.”

Relative risk objectives relate to a specific benchmark and can also be strict, such as, “Returns will not be less than 12-month euro LIBOR over any 12-month period,” or stated in terms of probability, such as, “No greater than a 5% probability of returns more than 4% below the return on the MSCI World Index over any 12-month period.”

Return objectives can be relative to a benchmark portfolio return, such as, “Exceed the return on the S&P 500 Index by 2% per annum.” For a bank, the return objective may be relative to the bank’s cost of funds (deposit rate). While it is possible for an institution to use returns on peer portfolios, such as an endowment with a stated objective to be in the top quartile of endowment fund returns, peer performance benchmarks suffer from not being *investable* portfolios. There is no way to match this investment return by portfolio construction before the fact.

In any event, the account manager must make sure that the stated risk and return objectives are compatible, given the reality of expected investment results and uncertainty over time.

Explain the difference between the willingness and the ability (capacity) to take risk in analyzing an investor’s financial risk tolerance.

An investor's **ability to bear risk** depends on financial circumstances. Longer investment horizons (20 years rather than 2 years), greater assets versus liabilities (more wealth), more insurance against unexpected occurrences, and a secure job all suggest a greater ability to bear investment risk in terms of uncertainty about periodic investment performance.

An investor's **willingness to bear risk** is based primarily on the investor's attitudes and beliefs about investments (various asset types). The assessment of an investor's attitude about risk is quite subjective and is sometimes done with a short questionnaire that attempts to categorize the investor's risk aversion or risk tolerance.

When the adviser's assessments of an investor's ability and willingness to take investment risk are compatible, there is no real problem selecting an appropriate level of investment risk. If the investor's willingness to take on investment risk is high but the investor's ability to take on risk is low, the low ability to take on investment risk will prevail in the adviser's assessment.

In situations where ability is high but willingness is low, the adviser may attempt to educate the investor about investment risk and correct any misconceptions that may be contributing to the investor's low stated willingness to take on investment risk. However, the adviser's job is not to change the investor's personality characteristics that contribute to a low willingness to take on investment risk. The approach will most likely be to conform to the lower of the investor's ability or willingness to bear risk, as constructing a portfolio with a level of risk that the client is clearly uncomfortable with will not likely lead to a good outcome in the investor's view.

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.

Investment constraints include the investor's liquidity needs, time horizon, tax considerations, legal and regulatory constraints, and unique needs and preferences.

Liquidity: Liquidity refers to the ability to turn investment assets into spendable cash in a short period of time without having to make significant price concessions to do so. Investor needs for money to pay tuition, to pay for a parent's assisted living expenses, or to fund other possible spending needs may all require that some liquid assets be held. As we noted in an earlier topic review discussing property and casualty insurance companies, claims arrive unpredictably to some extent and therefore their portfolios must hold a significant proportion of liquid (or maturing) securities in order to be prepared to honor these claims. Illiquid investments in hedge funds and private equity funds, which typically are not traded and have restrictions on redemptions, are not suitable for an investor who may unexpectedly need access to the funds.

Time horizon: In general, the longer an investor's time horizon, the more risk and less liquidity the investor can accept in the portfolio. While the expected returns on a broad equities portfolio may not be too risky for an investor with a 20-year investment horizon, they likely are too risky for an investor who must fund a large purchase at the end of this year. For such an investor, government securities or a bank certificate of deposit may be the most appropriate investments because of their low risk and high liquidity at the time when the funds will be needed.

Tax situation: Besides an individual's overall tax rate, the tax treatment of various types of investment accounts is also a consideration in portfolio construction. For a fully taxable account, investors subject to higher tax rates may prefer tax-free bonds (U.S.) to taxable bonds or prefer equities that are expected to produce capital gains, which are often taxed at a lower rate than other types of income. A focus on expected after-tax returns over time in relation to risk should correctly account for differences in tax treatments as well as investors' overall tax rates.

Some types of investment accounts, such as retirement accounts, may be tax exempt or tax deferred. Investors with such accounts may choose to put securities that generate fully taxed income, such as corporate bond interest, in accounts that are tax deferred, while seeking long-term capital gains, tax-exempt interest income, and dividend income (in jurisdictions where dividends receive preferential tax treatment) in their personal accounts, which have no tax deferral benefit.

Legal and regulatory: In addition to financial market regulations that apply to all investors, more specific legal and regulatory constraints may apply to particular investors. Trust, corporate, and qualified investment accounts may all be restricted by law from investing in particular types of securities and assets. There may also be restrictions on percentage allocations to specific types of investments in such accounts. Corporate officers and directors face legal restrictions on trading in the securities of their firms that the account manager should be aware of.

Unique circumstances: Each investor, whether individual or institutional, may have specific preferences or restrictions on which securities and assets may be purchased for the account. Some of these may be nonfinancial considerations, which are commonly categorized as **responsible investing**. Ethical preferences, such as prohibiting investment in securities issued by tobacco or firearms producers, are not uncommon. Restrictions on investments in companies or countries where human rights abuses are suspected or documented would also fall into this category. Religious preferences may preclude investment in securities that make explicit interest payments.

Unique investor preferences may also be based on diversification needs when the investor's income depends heavily on the prospects for one company or industry. An investor who has founded or runs a company may not want any investment in securities issued by a competitor to that company.

Explain the specification of asset classes in relation to asset allocation.

After having determined the investor objectives and constraints through the exercise of creating an IPS, a **strategic asset allocation** is developed which specifies the percentage allocations to the included asset classes. In choosing which asset classes to consider when developing the strategic asset allocation for the account, the correlations of returns

within an asset class should be relatively high, indicating that the assets within the class are similar in their investment performance. On the other hand, it is low correlations of returns *between* asset classes that leads to risk reduction through portfolio diversification.

Historically, only the broad categories of equities, bonds, cash, and real estate were considered. More recently, a group of several investable asset classes, referred to collectively as alternative investments, has gained more prominence. Alternative investment asset classes include hedge funds of various types, private equity funds, managed or passively constructed commodity funds, artwork, and intellectual property rights.

We can further divide equities by whether the issuing companies are domestic or foreign, large or small, or whether they are traded in emerging or developed markets. An example of specifying asset classes is world equities. A U.S. investor may want to divide world equities into different regions.

With bonds, we can divide the overall universe of bonds into asset classes based on maturities or on criteria such as whether they are foreign or domestic, government or corporate, or investment grade or speculative (high yield). Overall, the asset classes considered should approximate the universe of permissible investments specified in the IPS.

Once the universe of asset classes has been specified, the investment manager will collect data on the returns, standard deviation of returns, and correlations of returns with those of other asset classes for each asset class.

Figure illustrates the strategic asset allocation for a pension fund.

Strategic Asset Allocation

The Vermont Pension Investment Committee manages more than \$4 billion in retirement assets for various teachers and state and municipal employees in that state. VPIC's investment policy specifies the following strategic asset allocation:

Asset Class	Target
Growth assets	
Passive global equities	24%
Active global equities	5%
Large cap U.S. equities	4%
Small-/mid-cap U.S. equities	3%
Non-U.S. developed market equities	5%
International small-cap equities	2%
Private equity	10%
Core plus fixed income	6%
Emerging market debt	4%
Private debt	5%
Non-core real estate	3%
Total growth assets	71%
Downturn hedging assets	
Core fixed income	14%
Short-term quality credit	5%
Total downturn hedging	19%
Inflation hedging assets	
Core real estate	5%
U.S. TIPS	3%
Infrastructure/farmland	2%
Total inflation hedging	10%

Source: State of Vermont, Office of the State Treasurer.

Target allocation as of March 25, 2019.

www.vermonttreasurer.gov/content/pension

Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Once the portfolio manager has identified the investable asset classes for the portfolio and the risk, return, and correlation characteristics of each asset class, an *efficient frontier*, analogous to one constructed from individual securities, can be constructed using a computer program. By combining the return and risk objectives from the IPS with the actual risk and return properties of the many portfolios along the efficient frontier, the manager can identify that portfolio which best meets the risk and return requirements of the investor. The asset allocation for the efficient portfolio selected is then the strategic asset allocation for the portfolio.

So far, we have not concerned ourselves with deviations from strategic asset allocations or with selection of individual securities within individual asset classes. These activities are referred to as active (versus passive) portfolio management strategies. A manager who varies from strategic asset allocation weights in order to take advantage of perceived short-term opportunities is adding **tactical asset allocation** to the portfolio strategy. **Security selection** refers to deviations from index weights on individual securities within an asset class. For example, a portfolio manager might overweight

energy stocks and underweight financial stocks, relative to the index weights for U.S. large-cap equities as an asset class. For some asset classes, such as hedge funds, individual real estate properties, and artwork, investable indexes are not available. For these asset classes, selection of individual assets is required by the nature of the asset class.

While each of these active strategies may produce higher returns, they each also increase the risk of the portfolio compared to a passive portfolio of asset class indexes. A practice known as **risk budgeting** sets an overall risk limit for the portfolio and budgets (allocates) a portion of the permitted risk to the systematic risk of the strategic asset allocation, the risk from tactical asset allocation, and the risk from security selection.

Active portfolio management has two specific issues to consider.

1. An investor may have multiple managers actively managing to the same benchmark for the same asset class (or may have significant benchmark overlap). In this case, one manager may overweight an index stock while another may underweight the same stock. Taken together, there is no net active management risk, although each manager has reported active management risk. Overall, the risk budget is underutilized as there is less net active management than gross active management.
2. When all managers are actively managing portfolios relative to an index, trading may be excessive overall. This extra trading could have negative tax consequences, specifically potentially higher capital gains taxes, compared to an overall efficient tax strategy.

One way to address these issues is to use a **core-satellite approach**. The core-satellite approach invests the majority, or core, portion of the portfolio in passively managed indexes and invests a smaller, or satellite, portion in active strategies. This approach reduces the likelihood of excessive trading and offsetting active positions.

Clearly, the success of security selection will depend on the manager's skill and the opportunities (mispricings or inefficiencies) within a particular asset class. Similarly, the success of tactical asset allocation will depend both on the existence of short-term opportunities in specific asset classes and on the manager's ability to identify them.

Describe how environmental, social, and governance (ESG) considerations may be integrated into portfolio planning and construction.

In our Corporate Issuers review of "Introduction to Corporate Governance and Other ESG Considerations," we described several approaches to ESG investing. Briefly, these approaches include:

- **Negative screening**, excluding specific companies or industries based on ESG factors.
- **Positive screening**, investing in companies that have positive ESG practices.
- **Thematic investing**, selecting sectors or companies to promote specific ESG-related goals.
- **Impact investing**, selecting investments both to provide a return and to promote positive ESG practices.
- **Engagement/active ownership**, using share ownership as a platform to promote improved ESG practices at a company.

- **ESG integration**, considering ESG factors throughout the asset allocation and security selection process.

Here, we look at some issues these approaches raise for portfolio management.

If a portfolio's investment universe is constrained by negative screening, measuring its performance against a broad market index is unlikely to be appropriate. Indexes excluding companies or industries that investors with ESG concerns commonly avoid are available.

While many investors use positive screening, thematic, or impact investing approaches, choices of which specific companies to invest in and which ESG factors to focus on differ among investors. Thus, portfolios and performance benchmarks must be customized under these approaches, and they may require investment managers who specialize in these styles of investing.

For investment managers with clients who wish to engage in active ownership, it is important to clarify whether the clients intend to vote their shares themselves or direct the managers to vote the shares according to specified ESG factors.

Regardless of the approach chosen, investors should be aware that imposing constraints based on ESG factors will likely affect portfolio performance. How these constraints will affect portfolio performance in practice is uncertain. Both limiting the universe of investment choices and incurring the costs involved in considering ESG factors may decrease returns. On the other hand, investing in companies with good corporate governance practices and avoiding those that face ESG-related risks may increase portfolio returns.