Learning Module 3: Portfolio Management: An Overview

LOS 3a: describe the portfolio approach to investing

Investors have to ensure their investments **achieve their future needs**. A **portfolio approach** to investment decision-making is important regardless of future financial goals. It enables an investor to create a **diversified** investment portfolio.

Portfolio Diversification

The benefits of a diversified portfolio are best summarized by the anecdotal wisdom of “don’t put all your eggs in one basket.” If a portfolio is too heavily allocated to one individual security, and that security fails for some reason, an investment portfolio can be reduced to zero. Diversification allows investors to spread some of the downside risk associated with any one investment position without necessarily decreasing the expected rate of return.

Reducing Risk

Diversified portfolios have a lower portfolio risk or volatility (as measured by standard deviation) than any individual position within the portfolio. Due to the statistical relationship or interactions between individual portfolio positions (correlation), the overall volatility is lowered by including multiple positions within a portfolio.

Composition Matters

Each security has a historical risk and return profile. By combining securities within a portfolio, we can produce a risk and return profile for the portfolio itself. Through examination of different portfolios – allocating different percentages to the underlying securities – we can determine the portfolio composition that produces the best risk-return profile.

Downside Protection

Portfolio diversification is not an absolute failsafe for investors. A diversified portfolio may not protect an investor from losses during market turmoil. The reduction in risk as a result of portfolio diversification comes about due to the uncorrelated nature of individual portfolio holdings. However, this correlation is not fixed. As was the case during the 2007-2008 financial crisis, previously uncorrelated assets can become correlated when markets are stressed. This is known as contagion, and in 2008, global assets experienced price declines. This proved that portfolio diversification is not as effective as the mathematical models had previously suggested.

The Modern Portfolio Theory

Although adopting a portfolio approach to investing seems intuitive, there is a theory behind it. The diversification concept follows the work of Harry Markowitz's 1952 publication and is known as Modern Portfolio Theory (MPT). The principle concept is that investors should not only hold portfolios but also focus on the relationship among the individual securities within the portfolio. MPT has its limitation but continues to be a cornerstone for portfolio managers.

Question

A portfolio approach to investing provides which of the following benefits?

A. The highest investment returns.

B. Protection against investment losses.

C. A reduction in risk during normal market conditions.

Solution

The correct answer is C.

A diversified portfolio reduces risk without compromising investment returns. However, it does not completely protect an investor against investment losses during times of market turmoil.

LOS 3b: describe the steps in the portfolio management process

Upon determining the type of investment client and their financial goals, a portfolio manager takes a series of steps to ensure the client meets their goals and needs.

1. The Planning Step

Once a portfolio manager has established a client's objectives and constraints, they must develop an investment policy statement (IPS). This written document spells out all the investment objectives and constraints that apply to a client's portfolio. It may also contain a reference to a benchmark. A benchmark can be used to assess investment performance and evaluate whether the objectives have, indeed, been achieved.

2. The Execution Step

The execution step has three stages – asset allocation, security analysis, and portfolio construction.

Asset Allocation

The analyst or portfolio manager determines the economic and capital market expectations for various available asset classes. This analysis may be top-down. In this instance, it starts with a consideration of the macroeconomics or industry environment and an evaluation of the asset classes expected to perform well given the environment. Alternatively, the analysis may be bottom-up. Instead of looking at macroeconomics or industry data, this analysis focuses on company-specific factors. A decision will then be taken on the allocation of assets to the available asset classes. Asset classes can include equities, bonds, cash, real estate, commodities, hedge funds, and private equity.

Security Analysis

An analyst can combine top-down and bottom-up views in selecting individual securities to assess the level of returns and risk. This informs the assignment of a valuation to securities being considered for portfolio inclusion.

Portfolio Construction

A diversified portfolio can be constructed using the investment policy statement (IPS), the desired asset allocation, and security analysis. Besides achieving investment performance, risk management is critical in the portfolio construction process. The IPS will outline a client's risk tolerance, and the portfolio manager must ensure the portfolio is aligned with this risk profile. Once the portfolio manager has chosen securities to buy and the quantities in which to buy them, the transactions will be executed. Often, a specialized trade execution team or external stockbroker executes these transactions.

3. The Feedback Step

After a portfolio manager has constructed a portfolio has been constructed, they need to review and monitor it at an appropriate interval.

Portfolio Monitoring and Rebalancing

Portfolio rebalancing occurs when a portfolio has shifted from the targeted asset allocation due to market movements. If the top-down or bottom-up views change, an individual security or asset class may need to be changed. A change in a client's circumstances may prompt a revision of the IPS and the portfolio.

Portfolio Measurement and Reporting

Portfolio performance must be evaluated to establish whether the client's objectives have been met. Portfolio performance may be assessed in relation to the benchmark set out in the IPS. Following analysis of the performance, it may be determined that the client's objectives have changed. This realization will be factored into the planning and execution steps.

Question

Select the correct sequence of portfolio management steps.

A. Equity valuation, portfolio performance assessment, trade execution.

B. IPS creation, portfolio rebalancing, top-down analysis.

C. IPS creation, portfolio construction, monitoring, and rebalancing.

Solution

The correct answer is **C**.

The portfolio management process must begin with the creation of an investment policy statement in the planning step. This is followed by analysis and portfolio construction in the execution step. Finally, rebalance, performance measurement, and monitoring are carried out in the feedback step.

LOS 3c: describe types of investors and distinctive characteristics and needs of each

The needs of investment clients vary widely, but we can group investors into two broad categories – **individual** and **institutional** investors. Different investors will have varying investment time horizons, tolerance for portfolio risk, income, and liquidity needs.

Individual Investors

Individual investors may be investing either for short-term or long-term goals. A short-term investment goal may be their children's education or the purchase of a house. Long-term investment goals revolve around providing income for retirement. The implication is that some investors are focused on capital growth and look for those investments with the potential for capital appreciation, while retirees will want income-producing assets. The structuring of a portfolio for an investor will also be dependent on their financial circumstances, such as home ownership, employment prospects, and other financial obligations.

Institutional Investors

There are many different types of institutional investors. Indeed, institutional assets constitute a major portion of the investment market. Pension funds, endowments, charities, banks, insurance companies, investment funds, and Sovereign Wealth Funds (SWF) are all classified as institutional investors. These institutional investors also have different financial objectives.

Endowments and Foundations

The typical objective of an endowment or foundation is to maintain the real (inflation-adjusted) capital value of the fund in perpetuity as well as generate income to provide financial support for its beneficiaries.

Banks

Banks hold deposits and make loans which can lead to excess reserves – in this case, a bank holds more deposits than the loans it has extended. Banks can invest these reserves, which typically have to be held in conservative and liquid assets like fixed-income and money market instruments. The bank's objective is to earn a rate of return in excess of the rate of interest it pays on its deposits.

Insurance Companies

Insurance companies receive premiums from the insurance policies they write. They need to invest these premiums to ensure sufficient funds are available to pay for insurance claims when these arise. As such, their investments are also often conservative in nature and cognizant of the investment time frame over which claims may arise.

Investment Companies

Investment companies manage mutual funds, which are pooled investment vehicles. Mutual funds are seen as an efficient way for individual investors to gain access to a diversified portfolio and benefit from the skills of a professional investment manager. Mutual funds are managed according to the limits and restrictions of their investment mandates.

Sovereign Wealth Funds

SWFs are government-owned investment funds. Some governments operate with the objective of investing the revenues from the country's natural resources (e.g., oil) for the benefit of future generations. On the other hand, others manage state assets.

Question

Excess reserves held by banking institutions are usually invested in:

A. Emerging market equities and other high-growth stocks.

B. Money-market and fixed-income instruments.

C. Real estate and other tangible assets.

Solution

The correct answer is **B**.

Banks invest their excess reserves in conservative and liquid assets such as fixed-income and money-market instruments.

LOS 3d: describe defined contribution and defined benefit pension plans

Employees of both private and public companies often save and invest for retirement via defined contribution (DC) pension plans in which they assume the investment risk. In the case of a defined benefit (DB) pension plan, the responsibility and investment risk fall on the employer. It is up to the employer to provide the defined benefits to employees on retirement.

Defined Contribution Pension Plan

A Defined Contribution (DC) pension plan is an investment vehicle in which the amounts invested, or the contributions that the employee makes to the plan, are defined or specified, but the benefits are not predetermined. The objective of the pension plan is to accumulate wealth by investing a portion of wages while working to provide income during retirement. Unlike a Defined Benefit (DB) pension plan, where the retirement benefits are predetermined based on factors such as salary and years of service, a DC plan places the investment risk on the employee. The employee is responsible for ensuring that their contributions and investment growth are sufficient to provide the desired income upon retirement. The final retirement income in a DC plan depends on the contributions made, investment performance, and the choices made by the employee regarding investment options within the plan.

Defined Benefit Pension Plan

In a DB pension plan, the employer has an obligation to provide certain benefits to employees when they retire. The future benefit is specified or defined. The investment management of DB plans has to consider the timing of its future liabilities or cash flows by assessing the age of its plan members. If, for example, a DB pension plan has a lot of young members, the investment time horizon of the plan may be quite long. The plan investment manager may try to match the cash flow requirements of the plan with cash-flow-producing assets such as bonds. This checks the capacity of portfolio assets to offset portfolio liabilities.

Question

Which of the following *best* describes the investment risk of a DB pension plan?

A. The employer assumes the investment risk.

B. The employee assumes the investment risk.

C. The employer and the employee share the investment risk.

Solution

The correct answer is **A**.

In a DB pension plan, the employer must ensure there are sufficient assets to match the future defined benefits payable to employees upon retirement.

LOS 3e: describe aspects of the asset management industry

Buy-Side vs. Sell-side

Asset managers are typically deemed to be on the buy-side. This ideally means that they buy the products of sell-side firms. Buy-side firms include asset managers, hedge funds, institutional investors, and retail investors. On the other hand, sell-side firms include investment and commercial banks, stockbrokers, and market makers.

Types of Asset Managers

Active vs. Passive Managers

Active managers represent around 80% of the asset management industry. Through fundamental and quantitative research, they attempt to outperform benchmarks, such as the S&P 500. On the contrary, passive management simply tries to replicate the returns of a market index.

Traditional vs. Alternative Asset Managers

Traditional management usually focuses on long stocks and bonds to create diversified client portfolios. In contrast, alternative management uses leverage, derivatives, long-short strategies, etc., to either outperform a predetermined index or to create a return that is uncorrelated to the market.

Lately, there has been a blurred line between traditional and alternative management. Many traditional managers have introduced higher-margin alternative products to clients.

Ownership Structure

Most asset managers are privately-owned firms. However, some publicly-traded asset management firms also exist. These often offer services such as insurance and/or banking services.

Asset Management Industry Trends

Growth of Passive Management

Passive management is gaining currency in the asset management industry. The two key reasons for this are the low fees charged for passively-managed funds and the fact that active managers are having a hard time beating indices in increasingly-efficient markets.

Big Data

Nowadays, algorithms are much faster at analyzing earnings and economic news than humans. This opens the door to short-term trading. In fact, many asset managers are now using machine-learning techniques to help process data.

In order to generate alpha, asset managers are trying to discover data with predictive potential faster than fellow market participants.

Robo-Advisors

In 2017, robo-advisers managed an estimated USD 180 billion in assets. The main advantages of robo-advisors are that:

- They seem to attract a **younger crowd** of investors.
- They charge **lower fees** because of the scalability of the technology.
- They provide a **low barrier to entry** to other firms, such as tech firms, to enter the lucrative asset-management industry.

LOS 3f: describe mutual funds and compare them with other pooled investment products

Separately Managed Accounts

SMAs, also referred to as managed accounts, wrap accounts, or individually managed accounts, are portfolios managed exclusively for the investor according to their investment, tax preferences, and requirements. The investor owns the underlying assets directly, unlike a mutual fund. Due to the individually tailored nature of SMAs, the minimum investment amount is significantly higher than that of a mutual fund, and institutional investors use them.

Many investors choose to participate in a pooled investment vehicle rather than assemble a portfolio of securities by themselves. There are several types of pooled investment vehicles. Mutual and exchange-traded funds (ETFs) tend to have low minimums, while hedge funds and private equity funds may require large investment amounts.

Pooled Investments

Mutual Funds

The value of a mutual fund is referred to as the Net Asset Value (NAV). It is computed based on the closing price of the fund's underlying securities. Each investor owns a number of shares in the fund, which represents a pro-rata claim on the value of the mutual fund.

Open-end Fund

An open-end mutual fund will accept new investor inflows and issue new investors shares in the mutual fund priced at the NAV of the fund at the time of investment. Investors can also sell their mutual fund shares at the prevailing NAV. Therefore, the total number of shares at the disposal of the mutual fund will change depending on its net inflows or outflows.

The portfolio manager of an open-end fund has to manage the cash inflows and outflows. They may, in fact, have to liquidate fund assets to meet redemption requests. Otherwise, they may feel pressure stemming from the demand for more investment opportunities when there are large inflows to the fund. The structure makes it easy for the mutual fund to grow in size by attracting investor assets.

Closed-end Fund

A closed-end fund will not create new shares when a new investor wants to buy shares. Instead, an existing investor will have to sell their shares to the new investor. The total number of shares in issue is fixed. Transactions do not necessarily occur at the NAV of the fund but may be at a premium or discount to NAV.

The portfolio manager of a closed-end fund does not have to manage the cash inflows and outflows. Closed-end funds tend to attract fewer investor assets and only make up a small portion of the mutual fund universe.

Load and No-load Funds

Mutual funds can also be classified as load or no-load funds. A load fund charges investors a sales charge fee to buy, hold or sell shares in the fund. Retail brokers usually sell these funds. The brokers may receive a portion of the fee as a commission. These types of funds are increasingly becoming less popular.

A no-load fund does not charge a transaction-based fee but an annual fee based on a percentage of the fund's NAV.

Types of Mutual Funds

Mutual funds are broadly classified according to the type of underlying assets they invest in.

Money Market Funds

Money market funds are often seen as substitutes for bank deposits. However, they are not insured in the same way. Therefore, there is some degree of risk over a bank deposit. Money market funds are either taxable or tax-free. Taxable money market funds invest in short-term corporate and federal government debt. Tax-free funds invest in short-term state and local government debt.

Bond Mutual Funds

Bond mutual funds invest in individual bonds and, occasionally, preference shares. A key difference between bond funds and money market funds is the maturity of the underlying bonds. Money market funds may hold positions with an overnight maturity. They rarely last longer than 90 days. A bond fund holds positions with maturities between 1 and 30 years. They also hold bonds of various credit ratings.

Stock Mutual Funds

Stock or equity mutual funds have the most assets under management globally. They can either be actively or passively managed. A passive fund is designed to track a particular index through a buy-and-hold strategy. On the other hand, an actively managed fund comprises equity securities selected by the portfolio manager seeking outperformance. The fees on actively managed funds are higher than those on passive funds and tend to be traded more actively. This more active trading has a tax implication. It attracts higher taxes relative to an index fund.

Hybrid or Balanced Funds

Hybrid or balanced funds invest in both equities and bonds. These funds are gaining popularity as lifecycle funds that target a particular retirement date become more sought after. A lifecycle fund tilts the mix of equities and bonds as the time for retirement draws near.

Other Pooled Investments

In addition to mutual funds, other pooled investments, such as Exchange-Traded Funds (ETFs),

separately managed accounts (SMAs), hedge funds, buyout funds, and venture capital funds, are available to investors.

Exchange-traded Funds

ETFs track a basket of securities decided upon by the sponsor. The sponsor interacts with institutional investors who deposit the securities basket with the sponsor and receive creation units in the ETF in return. These units can then be sold to the public by the institutional investor. The institutional investor can also return their units to the plan sponsor in exchange for the securities basket. This creation and redemption mechanism helps ensure the ETF units are priced close to the NAV.

When an investor buys an index fund, the investor buys the shares directly from the fund. However, when an investor buys an ETF, the investor buys the units (shares) from other investors in the same way one buys trading equity securities. ETFs are priced throughout the trading day, and the purchase of an ETF share in the open market may not be conducted at the NAV but at a price that represents investor demand at the time. Under normal market conditions, this is usually close to the NAV.

ETF expenses tend to be lower than index funds, but brokerage is incurred when transacting. Dividends that arise in an ETF are paid out directly to the shareholders. Index funds and mutual funds tend to reinvest dividends.

The minimum investment amount for ETFs tends to be smaller than that for mutual funds, and investors may choose to buy a single share of the ETF.

Hedge Funds

Hedge fund strategies tend to be more complex than those of mutual funds. They can make use of leverage and extensive derivative positions. Many hedge funds are more loosely regulated than mutual funds. However, to be exempted from regulations, they may not market themselves to the general public.

The minimum investment amounts are usually high – millions of dollars – and hedge funds may impose liquidity restrictions. This means that investors have to commit to retaining and maintaining their investments for a particular period of time.

Buyout and Venture Capital Funds

Both buyout and venture capital funds invest in equity positions. Buyout funds aim to buy all the shares of a public company, thereby occasioning the privatization of the company. Often, large amounts of debt are issued in order to buy all the shares. This is known as a leveraged buyout (LBO). The intention is to use the company's cash flow to pay down the debt and restructure the company. This makes the restructured operation suitable for an initial public offering (IPO) or sale to another company, thus providing an exit to investors.

Venture capital (VC) funds do not buy established companies but finance companies in a start-up phase. In addition to financing, VC funds offer close oversight and management input. As with buyout funds, the intention is to list or sell the funded company in a finite and relatively short time to create an exit for investors.

Question

Which option correctly represents the characteristics of ETFs and index funds?

A. Index funds are priced throughout the trading day like equity securities.

B. When investors purchase an ETF, they pay a brokerage fee.

C. ETFs are always priced at the net asset value (NAV) at which investors transact at the closing price a day.

Solution

The correct answer is **B**.

ETFs trade like equity securities throughout the trading day. When buying ETF shares, investors pay a brokerage amount.

Option C is incorrect. ETFs are usually priced close to NAV but may be priced at a premium or discount, given market forces (supply and demand).

Option A is incorrect. Index funds are priced at NAV, do not attract brokerage fees, and are transacted at the closing price on the day.

Learning Module 4: Basics of Portfolio Planning & Construction

LOS 4a: describe the reasons for a written investment policy statement (IPS)

Before constructing a client's portfolio, an advisor should understand the client's goals, resources, circumstances, and constraints. Portfolio planning is the process of constructing a portfolio to meet a client's investment objectives. The written document governing this process is the Investment Policy Statement (IPS).

The IPS

The IPS is the communication between a client and their advisor that outlines the plan for achieving investment success. Prior to formulating the IPS, the advisor will work with the client to articulate the client's risk tolerance and specific circumstances. Typical constraints center on liquidity requirements, time horizons, regulatory requirements, tax status, and other unique needs.

In the case of institutional clients, IPS formulation may involve asset-liability management studies, identification of liquidity requirements and a range of tax and legal matters, or governance arrangements in the case of an endowment or pension plan. It may also set out the institution's approach to corporate governance and how shareholder voting will be approached and conducted.

A well-structured IPS is a document that the advisor refers to when exploring the feasibility of a particular investment. In some countries, an IPS is, in fact, a legal or regulatory requirement. The document should also be reviewed regularly to keep it in tune with client-based dynamics. This way, it will maintain its relevance and continue to be appropriate for the client's objectives.

Question

Which statement best describes the reasons for an Investment Policy Statement?

A. The IPS ensures there is clear communication between the client and their advisor in regard to the client's investment objectives.

B. The IPS allows for transparency on the fees levied by the advisor for investment work.

C. The IPS spells out the assets the advisor should buy and sell on behalf of the client.

Solution

The correct answer is **A**.

The Investment Policy Statement is the written document governing the portfolio planning process. It ensures the client's investment objectives and constraints are clearly communicated.

LOS 4b: describe the major components of an IPS

There is no standard format to the Investment Policy Statement, but most conform to a basic structure. The two key sections are the investment objectives and the investment constraints.

Typical IPS Structure

The IPS document usually follows the structure below:

- Introduction
    - Description of the client
- Statement of Purpose
    - Purpose of the IPS
- Statement of Duties and Responsibilities
    - Duties and responsibilities of all parties - client, advisor, custodians
- Procedures
    - The steps that will be undertaken to keep the IPS updated and procedures to be followed in response to various contingencies
- Investment Objectives
    - The client's investment objectives
- Investment Constraints
    - The client's investment constraints
- Investment Guidelines
    - Information on how the investment policy should be executed and includes the permissibility and exclusion of assets
- Evaluation and Review
    - Guidance on obtaining feedback for investment results

- Appendices
    - Strategic asset allocation (SAA) – also known as the policy portfolio, provides the baseline portfolio allocation
    - Rebalancing policy

Question

Which section of the investment policy statement is likely to contain information on leverage limits, maximum derivative exposure, and the exclusion of stocks from a particular industry?

A. The procedures section.

B. The investment guidelines.

C. The evaluation and review section.

Solution

The correct answer is **B**.

The investment guidelines section contains information on how the investment policy should be executed and includes the permissibility and exclusion of assets.

LOS 4c: describe risk and return objectives and how they may be developed for a client

The investment objectives and investment constraints are arguably the key components of the IPS. The two elements outline the risk and return objectives. Return objectives and expectations must be consistent with the risk objectives and constraints that apply to a portfolio.

Risk Objectives

The IPS should clearly state a client's risk tolerance. Risk objectives are the specifications for portfolio risk and can be stated as absolute or relative measures using quantitative metrics. Absolute metrics may be around the probability of loss of portfolio capital over a particular time frame, whereas relative risk objectives would key off a particular benchmark, such as the S&P 500 or LIBOR, to measure risk. For institutional clients, the benchmark may be linked to some kind of liability the institution has. For instance, a pension plan must be able to meet its payment obligations when they are due. When a policy portfolio has been specified, the risk objective may be for the portfolio to remain within a certain bandwidth around that policy allocation.

A client's overall risk tolerance is a function of their ability to bear risk and their willingness to take on risk. When there is consistency between risk willingness and ability, the investment task is made easier. Where the two are in conflict, the advisor should seek to explain the conflict and its implications. However, they should not aim to try and change the client's willingness to take a risk if the decision is not a result of misperception. The prudent approach is to reach a conclusion about risk tolerance that is the lower of the two factors – ability and willingness.

Return Objectives

Return objectives may be stated on an absolute or relative basis. An absolute return objective may state the desired returns in nominal or real terms while a relative return objective could be an outperformance, relative to an index or even a peer group. However, a good benchmark should be investable and have the capacity to make return objectives relative to peers or other

managers and institutions less appropriate.

The return objective should be clearly classified either as before or after fees and pre or post-tax. The return objective must be consistent with the client's risk objective and appropriate with respect to the market and economic environment.

Question

Which of the following best demonstrates an absolute risk objective and a relative return objective?

A. Target a maximum annual portfolio volatility of 1.5x the S&P 500 and returns of ±4% of the S&P 500 annual return.

B. Target a maximum portfolio drawdown of 10% with 95% confidence and annual returns of 12%.

C. Target a maximum portfolio loss of $100 000 with 95% confidence and annual returns within 2% of the MSCI World Index.

Solution

The correct answer is **C**.

An absolute objective does not key off a benchmark or index whereas a relative objective is with respect to a benchmark, index or peer group.

LOS 4d: distinguish between the willingness and the ability (capacity) to take risk in analyzing an investor’s financial risk tolerance

Financial risk tolerance is made up of two components: the ability to take on risk and the willingness to take on risk. The two may not always be in alignment. While an investor may have the ability to take on risk, they may be extremely risk-averse and unwilling to expose themselves to any potential loss.

Ability to Take on Risk

The ability to bear risk is measured in terms of time horizon, expected income, and level of wealth, relative to obligations. An investor with a longer time horizon has a greater ability to bear risk since there is more scope to recover losses over the time horizon. Similarly, an investor with large wealth relative to its liabilities will typically be able to withstand greater risk. For example, a very wealthy investor who can sustain their lifestyle even in the event of a portfolio loss has the ability to take on a lot of investment risk. Likewise, a pension plan with a large surplus of assets over its liabilities can take on more risk than a plan which has an investment deficit.

Willingness to Take on Risk

Willingness to take on risk has a psychological component. Even though there is no universally accepted method for measuring willingness to take on risk, a discussion with the client and the use of psychometric questionnaires could be useful yardsticks.

Conflict between Ability and Willingness

The willingness to take on risk has to be consistent with the ability to take on risk. There may be instances within an institutional environment where there is a conflict between the willingness and ability to take on risk. For instance, in a well-funded pension plan, the trustees and

beneficiaries may wish to adopt a low-risk investment approach while the plan sponsor wants to invest more aggressively. In such a situation, the trustees must always act in the best interests of the beneficiaries.

Further, in case of such a conflict, the advisor should not aim to change the client's willingness to take on risk, assuming that risk aversion is not due to misinterpretation or miscalculation. The prudent approach is to find a risk tolerance level that is lower than the ability and willingness to assume risk.

Question

Given the following client scenario, which option best describes the ability to take on risk and willingness to take on risk?

The client has a high-paying executive position in a large multi-national company. The client's lifestyle is relatively conservative, and as a result, the client has accumulated $5 million in savings and has paid off the mortgage over a property. The client will reach retirement age in 15 years. The client believes that "cash is king" and the financial markets are "just a gamble."

A. Ability: low; Willingness: high.

B. Ability: high; Willingness: low.

C. Ability: low; Willingness: low.

Solution

The correct answer is **B**.

The client's wealth is relatively substantial and exceeds their lifestyle requirement and financial obligations. The earnings are expected to continue for 15 years, a fairly long time horizon and as such, the ability to bear risk is high.

However, the client demonstrates a low willingness to take on investment risk perceiving the financial markets to be "a gamble." Therefore the willingness to take on risk is low.

LOS 4e: 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

In addition to return and risk objectives, the IPS has to be cognizant of other investment constraints, such as liquidity requirements, the investment time horizon, tax concerns, legal and regulatory factors, and unique circumstances.

Liquidity

The IPS should detail the likely withdrawal of funds from the portfolio. For institutions, there could be rules around this, like spending requirements in the case of endowment funds. When a client has a known liquidity requirement, the portfolio manager should allocate a portion of the portfolio to cover this liability by ensuring that the allocated assets can quickly be converted to cash whenever the obligation needs to be met. Allocating to a bond that has a maturity profile that matches the liability time horizon is an often-used strategy.

Time Horizon

The IPS should state the time horizon over which the client is investing. Illiquid or risky assets may be unsuitable for an investor with a short time horizon since they may not have sufficient time to recover from investment losses.

Tax Concerns

Different investors will have different tax status. The tax status should be stated in the IPS. Often, tax regimes will treat capital gains and income differently. Capital gains may be subject to a lower tax rate payable only when they are realized rather than when they are received. In this instance, there is a time value of money benefit to deferring tax. A taxable investor may, for example, wish to hold a portfolio that emphasizes capital gains over dividend income. A tax-

exempt investor, on the other hand, may be relatively indifferent to the two.

Legal and Regulatory Factors

The IPS should outline any applicable legal or regulatory restrictions. In some countries, pension funds are subject to restrictions on their portfolio composition. In the case of individuals, they may have access to privileged information on a particular listed company by virtue of directorship and, as such, are restricted from trading on that company ahead of the release of company financial results.

Unique Circumstances

The IPS should also cover any unique circumstances that are applicable. A client may have religious or ethical objections to investing in particular stocks or sectors. These types of considerations are often referred to as ESG (environment, social, governance) factors, and investing in accordance with ESG factors is referred to as SRI (socially responsible investing).

Question

A client is a director of a publicly listed pharmaceutical company and has stock options in the company that will vest over 10 years. Which of the following best reflects where this should be noted in the constraints?

A. Liquidity and tax concerns.

B. Unique circumstance and legal and regulatory factors.

C. Time horizon and liquidity.

Solution

The correct answer is **B**.

The IPS will needs to contain detail on the legal and regulatory restrictions that apply to directors (who have access to privileged information) of publicly listed companies in reference to dealing in shares of those companies.

Also, an over-exposure to a particular stock by virtue of stock options should be noted in the unique circumstances section as the portfolio construction may seek to down weight or avoid any additional exposure to this sector.

LOS 4f: explain the specification of asset classes in relation to asset allocation

Once the IPS has been specified, the advisor can construct the portfolio. The asset classes need to be defined, and a strategic asset allocation (SAA) formulated. The SAA is the first step and is the set of exposures to permissible asset classes that are expected to achieve the investment objectives subject to the investment constraints.

Capital Market Expectations

The investor expectations on the risk and return prospects of various asset classes are known as capital market expectations. Traditionally, these are quantified in terms of expected returns, the standard deviations of those returns, and the correlation between pairs of asset classes. The expected return consists of a risk-free rate and one or more risk premiums associated with the asset class. Expected returns can be derived in a variety of ways by using historical estimates, economic analysis, or valuation models.

Strategic Asset Allocation

Traditionally, investors have distinguished cash, equities, bonds, and real estate as the major asset classes. This list has recently been expanded to include private equity, hedge funds, commodities, and sometimes, assets such as art and intellectual property rights. These "newer" asset classes sometimes get grouped together as alternative investments.

Since the SAA is built up by asset class, defining the asset classes is an important first step. An investor may choose to have a very granular approach. For instance, they may split bonds into government and corporate bonds. Besides, they may cluster corporate bonds into investment and non-investment grade bonds. Finally, they may split government bonds into domestic and foreign bonds. This creates four different bond categories for which return-risk expectations and correlations with other assets can be expressed. A similar exercise could be conducted on equities. This could, for example, entail differentiating between foreign and domestic, small-cap

and large-cap, or developed and emerging market equities.

When defining an asset class, a number of criteria apply:

- Homogeneity within the asset class: the risk, return, and correlation within the asset class should be high while providing diversification relative to other asset classes.
- Mutual exclusivity.
- Representation of the investable universe.

The SAA for risk-averse investors will have a large allocation to government bonds and cash. In contrast, those investors with more ability and willingness to take on risk will have a greater allocation to equities and alternative assets. The SAA is a result of the capital market expectations of the defined asset classes and the investor objectives and constraints contained in the IPS.

Question

Which option most likely represents the SAA for a pension fund investor?

A. Developed market equities = 15%; emerging market equities = 35%; commodities = 25%; real estate = 10%; government bonds = 5%; corporate bonds = 5%; cash = 5%

B. Developed market equities = 35%; emerging market equities = 5%; commodities = 5%; real estate = 10%; government bonds = 25%; corporate bonds = 15%; cash = 5%

C. Developed market equities = 25%; emerging market equities = 25%; commodities = 20%; real estate = 15%; government bonds = 5%; corporate bonds = 5%; cash = 5%

Solution

The correct answer is **B**.

Pension fund investors tend to have a large allocation of government and corporate bonds. They also tend to have a lower allocation of more volatile asset classes, such as emerging market equities.

LOS 4g: describe the principles of portfolio construction and the role of asset allocation in relation to the IPS

Once the IPS containing the investment objectives and investment constraints has been determined along with the risk budget and the classification of asset classes, a portfolio needs to be constructed with the aim of meeting those objectives. The expected returns, standard deviations, and correlations between asset classes can be used to generate an optimal portfolio on a top-down basis. Alternative frameworks for portfolio construction, such as the core-satellite approach, can also be considered.

Optimal Portfolio

Rational investors will seek to maximize the risk-return tradeoff on their investment portfolio. Their risk-return objectives can be described as a utility function in which utility increases with higher expected returns and lower risk. The portfolio represents a particular asset allocation. The asset allocation that provides the highest expected utility is the one that is optimal for the investor, given their risk aversion.

Capital market expectations specified as the expected returns, standard deviations, and correlations between assets translate into an efficient frontier of portfolios. A multi-asset portfolio's expected return is given as follows:

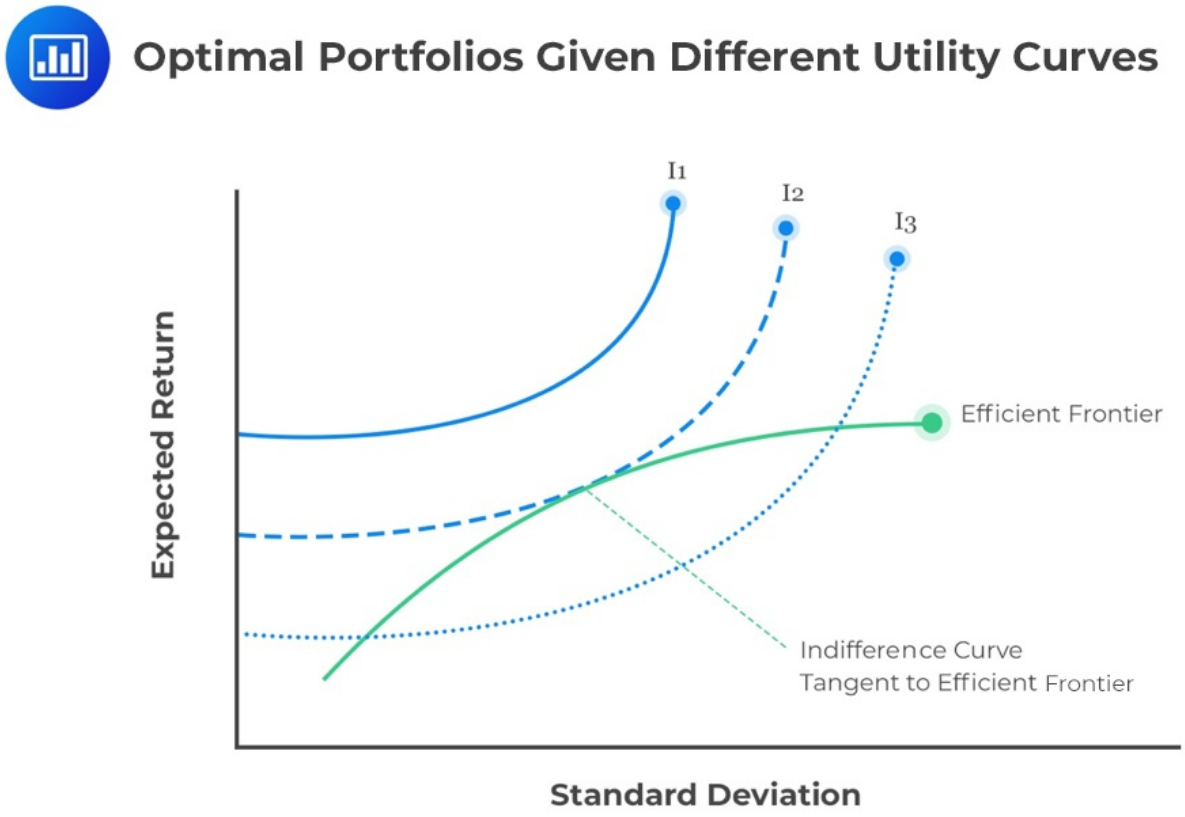
- $E(R_p) = \sum_{i=1}^{n} w_i E(R_i)$ where w_i = weight of the asset class i in the portfolio

The portfolio risk is given as follows:

- $\sigma_p = \sqrt{\sum_{i=1}^{n} w_{p,i} \sum_{j=1}^{n} w_{p,j} Cov(R_i, R_j)}$ where $Cov(R_i, R_j) = \rho_{i,j}\sigma_i\sigma_j$

Potential portfolios can be plotted to form an efficient frontier that represents the portfolio with minimal risk for each level of return. When return expectations for an asset class increase while volatility and correlation remain unchanged, the efficient frontier will move upward as each portfolio is able to generate higher returns for the same level of risk. The point at which the efficient frontier intersects the indifference curve with the highest utility represents the optimal

portfolio for the investor.



The Actual Portfolio

The SAA is the first step toward determining the investor portfolio. Oftentimes, risk budgeting is the second step. This is the process of deciding the overall risk budget of the portfolio and dividing that risk over the sources of investment return. Apart from the exposure to systematic risk factors as specified by the SAA, the portfolio returns also depend on tactical asset allocation (TAA) and security selection.

TAA is the decision to deliberately deviate from the SAA or policy weights with the objective of adding value based on near-term return forecasts for the asset classes. Likewise, security selection is the attempt to generate higher returns than the portfolio benchmark by selecting securities with a higher expected return. Deviating from policy weights or overweighting

particular securities creates additional return uncertainty, and the IPS should set limits for these activities.

Contrary to SAA, security selection is not rewarded with a long-run payoff to risk. It is a zero-sum game in which all investors compete against one another to identify a small number of mispriced securities. In total, the gross returns from all active investors tend to average out to the market return (the reward for taking on systematic risk), which implies that the active investor will match the market return. However, because of trading costs and active management fees, the average active manager will underperform the market net of costs. This does not mean there are no skillful active managers who consistently beat their benchmarks. Indeed, it does imply that all passive managers will beat the index. However, on average, this is the case.

As the portfolio changes due to the returns from various asset classes, the portfolio weights will gradually deviate from the policy weights. This process is referred to as drift, and the portfolio should be rebalanced back to policy weights. The rules that guide this process are referred to as the rebalancing policy.

Additional Portfolio Principles

Not all portfolios are constructed using a top-down framework. A top-down process requires a multitude of specialist asset managers to work for the same client within the same asset class. Each of these managers will manage risk relative to the client's benchmark. However, because these benchmarks may be similar or overlapping, the aggregate may result in an underutilization of the risk budget. Another drawback is the potential for overtrading, which tends to create capital gains and may be tax-inefficient.

A core-satellite methodology was developed to circumvent these issues, rather than a top-down approach. A large chunk of the portfolio is invested on a passive or low active basis (the core), while a smaller portion is managed more aggressively (the satellite). The aim of the satellite portion is to generate a high active return. The return objective is not necessarily benchmark-cognisant. The core has a low turnover to capture the long-term systematic risk premium in a

tax-optimal manner. A drawback of this approach is the difficulty of assigning the portfolio assets to portfolio managers who have various expected returns, risks, and correlations between those returns.

Question

Which statement best describes tactical asset allocation (TAA)?

A. TAA formulates the portfolio policy weights which provide exposure to systematic risk factors.

B. TAA allocates greater portions of the portfolio to those securities within the benchmark with higher expected returns.

C. TAA deliberately deviates from the SAA to generate additional returns on the basis of short-term asset class forecasts.

Solution

The correct answer is **C**.

Tactical asset allocation will tilt the portfolio to those asset classes expected to outperform in the short term.

On the other hand, strategic asset allocation is the policy portfolio designed to provide exposure to systematic risk factors generating portfolio returns that meet investment objectives.

LOS 4h: describe how environmental, social, and governance (ESG) considerations may be integrated into portfolio planning and construction.

Environmental, social, and governance factors are collectively referred to by the acronym “ESG”. ESG integration is the practice of considering environmental, social, and governance factors in the investment process. The integration can be implemented across all asset classes, including equities, fixed income, and alternative investments. ESG issues can be sub-divided into 3 main groups:

- Environmental issues: climate change, pollution, deforestation.
- Social issues: customer satisfaction, gender and diversity, and labor standards.
- Governance issues: bribery and corruption, executive compensation, lobbying.

Investors may exclude or engage with companies with strict consideration of these issues. Alternatively, investors may ask their asset managers to consider these issues in the investment process. For example, an investor might not want to buy polled-investment vehicles that own oil & gas and/or military equipment stocks.

Returns Associated With ESG Considerations

The effort and costs associated with limiting the investment universe as part of sustainable investment suggest a negative impact on investment returns. However, there are some benchmarks that reflect many commonly excluded companies or sectors.
Academic research has elicited mixed arguments on the impact of ESG factors on portfolio returns.