R51 Basics of Portfolio Planning and Construction

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1. Introduction

This reading addresses the following topics:

- What is an investment policy statement (IPS) and what does it contain?
- The portfolio construction process.
- How is asset allocation done for a client?

2. Portfolio Planning, the IPS and Its Major Components

2.1 The Investment Policy Statement

Portfolio planning can be defined as a program developed in advance of constructing a portfolio that is expected to satisfy the client's investment objectives. The written document governing this process is the investment policy statement (IPS). It defines a plan for investment success given the client's situation and requirements. The IPS should be reviewed on a regular basis.

2.2 Major Components of an IPS

The major components of an IPS are:

- Introduction: Describes the investment objectives, circumstances, and state of client.
- Statement of Purpose: Covers the scope of the IPS.
- Statement of Duties and Responsibilities: Applies to investment manager, client, and other parties involved.
- Procedures: Methodologies to tackle various circumstances and updating the IPS.
- Investment Objectives: Desired rate of return and the amount of risk the client is willing to take.
- Investment Constraints: Liquidity, legal, taxes, time horizon, and other unique constraints.
- Investment Guidelines: Specifies permitted classes, selection of asset classes, use of leverage, asset allocation, and rebalancing, etc.
- Evaluation of performance: Specifies the benchmark portfolio to compare investment results with, the frequency of evaluation, and other related information.
- Appendices: Contains information on specific guidelines like permitted deviations, strategic asset allocation, rebalancing strategies, statement of policy concerning hedging risks such as currency risk and interest rate risk, etc.

3. IPS Risk and Return Objectives

Risk Objectives

A client's risk tolerance is generally expressed qualitatively as high, moderate, or low. Two factors determine the overall risk tolerance: ability and willingness to take risk:

- Ability to take risk is based on wealth, time horizon, and expected income. etc. It is relatively easy to determine. Risk tolerance is usually expressed in both terms: ability

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and willingness. For example, a salaried person close to retirement with modest savings has low ability to take risk.

- Willingness to take risk is more subjective and is based on the client's psychology. For example, a client who has recently lost his job may not be willing to take a risk, even though he has the ability to do so, as job loss has a huge psychological impact.

Risk Tolerance

The interactions between willingness to take risk and ability to take risk are shown in the table below:

	Ability to Bear Risk	
Willingness to Take Risk	**Below Average**	**Above Average**
Below Average	Below-average risk tolerance	Resolution needed
Above Average	Resolution needed	Above-average risk tolerance

Source: CFAI

When the ability to take risk and willingness to take risk are consistent, selecting an appropriate level of risk is easy. If the investor's willingness to take risk is high, but his ability to take risk is low, the low ability will dominate and the advisor should select a low risk level. If the investor's willingness to take risk is low, but his ability to take risk is high, the advisor should attempt to educate the investor and clear any misconceptions about investment risk. If the investor is still not willing to take more risk, the advisor should select a low risk level.

For some clients, the risk objective might be defined quantitatively. Quantitative risk objectives can be expressed in absolute or relative terms.

- Absolute risk objective example: Portfolio should not suffer more than a 5% loss in any 12-month period. Practically, this could be stated as: with 95% probability, portfolio should not lose more than 5% value in any 12-month period. Absolute risk measures are not related to market performance. They are expressed in terms of standard deviation, variance, or value at risk.
- Relative risk objective example: The risk objective is expressed relative to a benchmark. For example, return should be within 4% of the S&P 500 index return.

Example

Your client has a portfolio worth 10 million. He cannot handle losing more than 1 million over the next 12 months. Is this an absolute or relative risk objective? How can this be stated in practical terms?

Solution:

This is an absolute risk objective. In practical terms, it can be stated as: with 95% probability, portfolio should not lose more than 10% in the next 12 months.

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Example

Another client specifies a risk objective of achieving returns within 4% of the BSE 100. Is this an absolute or relative risk objective? Identify a measure for quantifying the risk objective.

Solution:

This is a relative risk objective as it is relative to BSE 100 (market) performance. A measure for tracking a relative risk objective is tracking the risk.

3.1 Return Objectives

Return objectives can be stated on an absolute or a relative basis.

- Absolute: Absolute return is the return a portfolio must achieve over a certain period of time. For example, a client wants to achieve a return of 9% or inflation-adjusted (real) return of 2%. The objective is to deliver a positive return over time, irrespective of how good or bad the market performance is. No index or benchmark is used to measure the performance. Many strategies may be employed to generate absolute return, the success of which depends on the skills of the manager.
- Relative: A relative return objective will be stated relative to a benchmark. Examples: return 3% greater than 12-month LIBOR or return equal to the S&P500 index return.

The return objective can be stated before or after fees, and pre- or post-tax. The fee structure must be clear and understood by both the parties, i.e., the investment manager and the client. If there is a required return that must be met for the client to meet a specific goal, such as down payment of $100,000 for a house next year or $20,000 for college education for a child next year, then it must be mentioned.

Stated risk and return must be compatible. For example, it would be unrealistic to expect a very high return with low risk tolerance.

Example

Your client is 35 and wishes to retire in 30 years. His salary meets current and expected future expenses. He has 100,000 in savings of which he wants to put aside 10,000 as an emergency fund to be held in cash. You estimate that 300,000 in today's money will be sufficient to fund your client's retirement income needs. Expected inflation is 2% over the next 30 years. How much money must your client have in nominal terms to fund his retirement? What is the required return objective?

Solution:

First, let us calculate how much money the client must have in nominal terms after 30 years, at his retirement. You can solve it two ways:

Using the formula: 300,000 to grow at 2% for 30 years = $300{,}000 * (1.02)^{30} = 543{,}408$

Using a financial calculator: N = 30, I/Y = 2, PV = -300,000, PMT = 0, CPT FV. FV = 543,408

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To calculate the return objective, we have the following data.

The client is investing 90,000 now after keeping aside 10,000 for emergency in cash. This 90,000 must grow to 543,408.47 in 30 years. To compute the interest rate, we enter the following values in the calculator:

FV = -543,408.47, PV = 90,000, N = 30, PMT = 0, CPT I/Y. Interest rate = 6.18%

Note: If the client is saving a particular amount every year, then key in that number for PMT.

4. IPS Constraints

The five major investment constraints are:

- Liquidity requirements**:**
  - The ability to convert invested assets into cash without suffering significant price erosion.
  - Cash requirement varies from client to client and may require a certain portion of assets to be invested in highly liquid investments.
- Legal and Regulatory**:**
  - Restrictions on investments and percentage allocation in certain assets for investors, like insurance firms, trusts, etc.
- Time Horizon**:**
  - The longer the time horizon, the greater is the ability to take risk and the lower are the liquidity needs in the portfolio.
- Tax Concerns**:**
  - Investors tax status, jurisdiction of investments, and the tax treatment of various types of investment accounts should be considered.
- Unique Circumstances**:**
  - Factors influenced by religion, ethical preferences, government policies, or investor circumstances (including beliefs and values).

Instructor's Note:

You can use the acronym 'LLTTU' to remember these five constraints.

IPS may also include policy regarding **responsible investing** which takes into account environmental, social, and governance (ESG) factors. The six main ESG investment approaches are:

- Negative screening: Excluding certain sectors or companies or practices from a fund or portfolio on the basis of specific ESG criteria.
- Positive screening: Including certain sectors, companies, or practices in a fund or portfolio on the basis of specific ESG criteria.
- ESG integration: Refers to the practice of including *material* ESG factors in the investment process.
- Thematic investing: This strategy picks investments based on a theme or single

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factor, such as energy efficiency or climate change.

- Engagement/active ownership: This strategy involves achieving targeted social or environmental objectives along with measurable financial returns by using shareholder power to influence corporate behavior.
- Impact investing: Investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return.

These ESG investment approaches can impact the portfolio manager's investment universe and may also require the manager to put in place a process to systematically incorporate ESG factors into the portfolio.

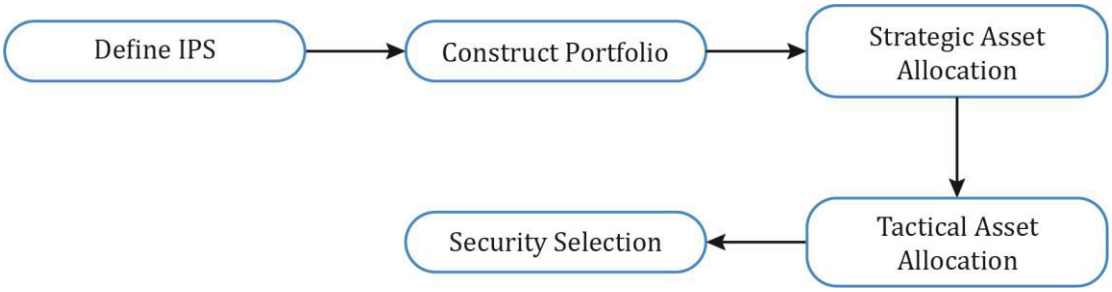
5. Gathering Client Information

It is important for portfolio managers and investment advisers to know their clients. They must find out all the facts about the client at the start of the relationship. This includes collecting information about the client's current circumstances, spending requirements, return objectives, goals, etc. Some of the important data gathered include:

- Family situation: Married or not, if the spouse works, any additional dependents, number of children and their education plans, etc.
- Employment situation: Client's salary, sources of income, industry the client is working in, stability of job, etc.
- Financial information: Level of savings, other investments such as real estate, etc. Adequate information on financial position will help in evaluating the client's risk tolerance.

6. Portfolio Construction and Capital Market Expectations

We have defined the IPS with return and risk objectives, and five constraints. Now, using the points in the IPS as a guideline, we need to construct the portfolio.



Portfolio construction consists of three steps:

- Strategic asset allocation
- Tactical asset allocation
- Security selection

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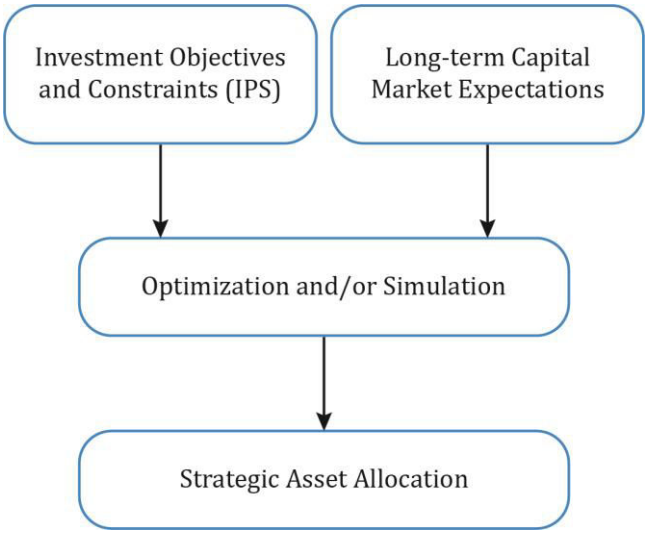
6.1 Capital Market Expectations

Capital market expectations are the investor's expectations about the return and risk of various asset classes. Capital market expectations include the return for each asset class an investor may invest in (e.g., stock market, bond market, alternative investments, real estate, etc.), the standard deviation of returns for each asset class (risk), and the correlation between the asset classes.

7. The Strategic Asset Allocation

The long-term capital market expectations and investor's risk-return objectives are combined into a strategic asset allocation. This is accomplished through optimization and/or simulation on computer systems.



Strategic asset allocation is a strategy to allot a certain percentage of the portfolio, each to different IPS-permissible asset classes, in order to achieve the client's long-term goals. Using this method, the portfolio manager decides how much of the client's money should be invested in equities, bonds, or any other asset class to meet the client's long-term goals. Strategic asset allocation is important because:

- Most of a portfolio's returns come from its systematic risk as nonsystematic risk is diversified away.
- The returns of assets in an asset class reflect exposure to certain systematic factors. This information can be used to select asset classes that match an investor's risk and return objectives.

How are asset classes defined?

The classification of asset classes is somewhat subjective. Furthermore, an asset class can be divided into sub-asset classes as illustrated below.

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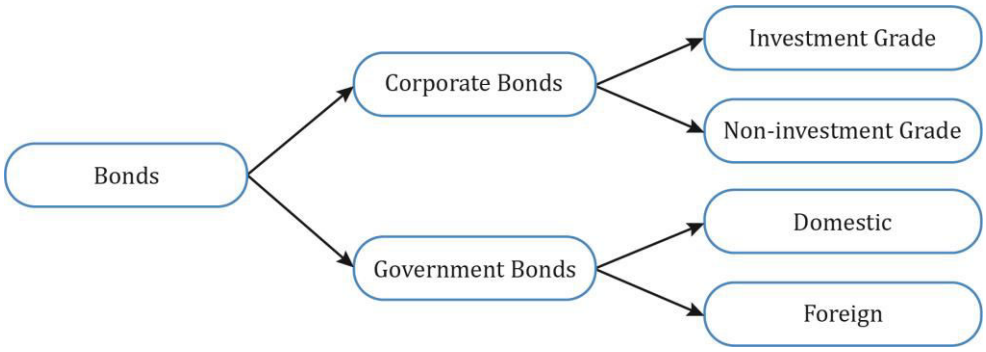

Criteria to define asset classes:

- All assets in an asset class must be homogeneous, and not correlated to other asset classes.
- Correlations of assets with an asset class should be high.
- Risk and return expectations of assets within an asset class must be similar.
- All the asset classes combined should account for the universe of all investable assets.

When defining the SAA, it is important to consider the asset class correlation matrix. When the correlation between asset classes is low, the diversification benefit will be high. This concept has been discussed in detail in earlier readings.

Example

Given the matrix below, identify which asset class is most sharply distinguished from equities.

Historical correlation (May 31, 2005 to April 30, 2009)

	Equities	**Fixed Income**	**Hedge**	**Real Estate**	**Private Equity**	**Commodities**	**Currencies**
Equities	1.00						
Fixed Income	-0.35	1.00					
Hedge	0.64	-0.35	1.00				
Real Estate	0.88	-0.21	0.58	1.00			
Private Equity	0.88	-0.30	0.65	0.92	1.00		
Commodities	0.38	-0.37	0.60	0.29	0.45	1.00	
Currencies	0.18	0.16	0.19	0.16	0.16	0.26	1.00

Source: FT Alphaville

Solution:

The question asks us to identify the asset class with the lowest correlation with equities. As you can see from the table, fixed income has the lowest correlation with equities while real estate and private equity have the highest correlation with equities.

Once the asset allocation is done, it is possible for this asset allocation to drift from the target allocation with time. For example, let us assume the target asset allocation is 60 percent in stocks and 40 percent in bonds. If equities do well the following year, the asset allocation

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drifts to 90 percent in equities and 10 percent in bonds. This calls for rebalancing the portfolio as the drift is substantial. By rebalancing, we mean sell equities and buy bonds to bring the portfolio back to the target asset allocation. The amount of allowable drift and rebalancing policy should be defined in the IPS appendix. This material will be covered in detail at Level III.

8. Steps toward an Actual Portfolio and Alternative Portfolio Organizing Principles

Portfolio construction involves the following steps:

1. **Define IPS:**
    a. Capture the investor's requirements and constraints.
2. **Determine the strategic asset allocation:**
    a. Define the investable asset classes for the portfolio and gather historical data on their risk, return, and correlation.
    b. Combine the IPS and the risk/return profile of various portfolios, derived from the above step, to decide on a strategic asset allocation for the portfolio. Until this step, investment decisions are entirely passive, i.e., returns are primarily generated by investing in asset class indexes.
    c. The SAA is a means of providing the investor with exposure to the systematic risks of asset classes in proportions that meet the risk and return objectives. It drives a significant percentage of the overall return.
3. **Tactical asset allocation:**
    a. This is the first step of active management where asset classes are selected.
    b. Determine whether there are any short-term opportunities that warrant a deviation from the strategic asset allocation.
    c. The weights of asset classes are altered from the strategic allocation weights.
    d. For example, a top-down analysis shows that given the economic cycle, commodities may outperform. Based on this premise, you alter the weight for the commodity asset class.
4. **Security selection:**
    a. This is second step of active management, where particular securities are selected.
    b. Identify the relatively strong securities within the favored asset class.
    c. Increase the weights of these securities from the weights used in index construction, to outperform the benchmark.
    d. For example, in your analysis you decide to go overweight on the base metals securities.

Some additional terms you should know:

- Risk budgeting: The process of deciding on the amount of risk to assume in a portfolio (the overall risk budget) and subdividing that risk over the sources of investment

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return (e.g., strategic asset allocation, tactical asset allocation, and security selection).

- Passive versus active investing: Passive investing is a strategy in which investors invest based on a pre-defined benchmark. One example would be an investment in a fund that tracks the S&P 500. Active investing is a strategy to identify (buy) underpriced and (sell) overpriced stocks. The objective is to earn a return higher than the benchmark.
- Rebalancing policy**:** The process of restoring a portfolio's original exposures to systematic risk factors is defined in the rebalancing policy.

8.1 New Developments in Portfolio Management

Two new developments in portfolio management are:

- Increasing use of ETFs in combination with robo-advice by retail investors: ETFs provide a fast, inexpensive, and liquid exposure to asset classes. Robo-advice has also further reduced the costs for retail investors to create well-diversified portfolios.
- Use of risk parity investing approach: Another new development with respect to portfolio planning and construction is the use of risk parity investing, whereby, asset classes are weighted according to risk contribution.

9. ESG Considerations in Portfolio Planning and Construction

ESG implementation approaches require a set of instructions for investment managers regarding selection of securities, the exercise of shareholder rights and the selection of investment strategies.

ESG implementation approaches affects both strategic asset allocation and the portfolio construction process. They may have a negative impact on expected risk and return of a portfolio as it may limit the manager's investment universe and the manner in which investment management firms operate. Nonetheless, ESG investing continues to see strong adoptions. Responsible investing proponents argue that the potential improvements in governance and avoidance of material risks will enhance returns. Academic research on the impact of ESG factors on portfolio returns remains mixed.

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Summary

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

The IPS is the starting point of the portfolio management process. Before constructing a portfolio or choosing assets for a client, it is important to understand the client's objectives. How much risk is he willing to take, how much can he actually take, how much return does he expect from the portfolio, what are his current circumstances? It defines a plan for investment success given the client's situation and requirements.

LO.b: Describe the major components of an IPS.

The major components of an IPS are:

- Introduction: Describes the investment objectives, circumstances, and state of the client.
- Statement of Purpose: Covers the scope of the IPS.
- Statement of Duties and Responsibilities: Applies to investment manager, client, and other parties involved.
- Procedures: Methodologies to tackle various circumstances and updating the IPS.
- Investment Objectives: The desired rate of return and the amount of risk the client is willing to take.
- Investment Constraints: Liquidity, legal, taxes, time horizon, and other unique constraints.
- Investment Guidelines: Specify permitted asset classes, selection of asset classes, use of leverage, asset allocation, and rebalancing etc.
- Evaluation of performance: Specifies the benchmark portfolio to compare investment results with, the frequency of evaluation, and other related information.
- Appendices: Contain information on specific guidelines like permitted deviations, strategic asset allocation, rebalancing strategies, etc.

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

Risk objective might be defined quantitatively. Quantitative risk objectives can be expressed in absolute or relative terms.

- Absolute risk objective example: The portfolio should not suffer more than a 5% loss in any 12-month period. Practically, this could be stated as: with 95% probability, the portfolio should not lose more than 5% value in any 12-month period. The absolute risk measures are not related to market performance. They are expressed in terms of standard deviation, variance, or value at risk.
- Relative risk objective example: Return should be within 4% of the S&P 500 index return. The risk objective is expressed relative to a benchmark.

Return objectives can be stated on an absolute or a relative basis.

- Absolute: Absolute return is the return a portfolio must achieve over a certain period of time.

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- Relative: A relative return objective will be stated relative to a benchmark.

LO.d: Explain the difference between the willingness and the ability (capacity) to take risks in analyzing an investor's financial risk tolerance.

Two factors determine the overall risk tolerance: ability and willingness to take risk:

- Ability to take risk is based on wealth, time horizon, expected income, etc. It is relatively easy to determine. For example, a salaried person close to retirement, with modest savings, has a low ability to take risks.
- Willingness to take risk is more subjective and is based on the client's psychology. For example, a client who has recently lost his job may not be willing to take risks, even though he has the ability to do so, as job loss has a huge psychological impact.

LO.e: Describe the investment constraints of liquidity, time horizon, tax concerns, legal, and regulatory factors, and unique circumstances and their implications for the choice of portfolio assets.

The five major investment constraints are:

- Time Horizon:
  - The longer the time horizon, the greater is the ability to take risk and the lower are the liquidity needs in the portfolio.
- Tax Concerns:
  - The investor's tax status, jurisdiction of investments, and tax treatment of various types of investment accounts should be considered.
- Liquidity requirements:
  - The ability to convert invested assets into cash without suffering significant price erosion.
  - Cash requirement varies from client to client and may require a certain portion of the assets to be invested in highly liquid investments.
- Legal and Regulatory:
  - Restrictions on investments and percentage allocation in certain assets for investors like insurance firms, trusts, etc.
- Unique Circumstances:
  - Factors influenced by religion, ethical preferences, government policies, or investor circumstances.

LO.f: Explain the specification of asset classes in relation to asset allocation.

The classification of asset classes is somewhat subjective. Furthermore, an asset class can be divided into sub-asset classes as illustrated below.

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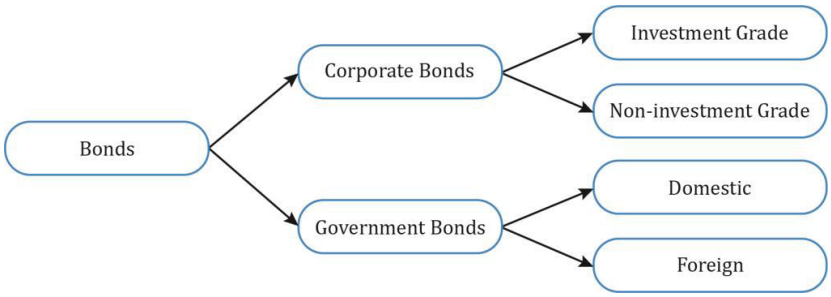
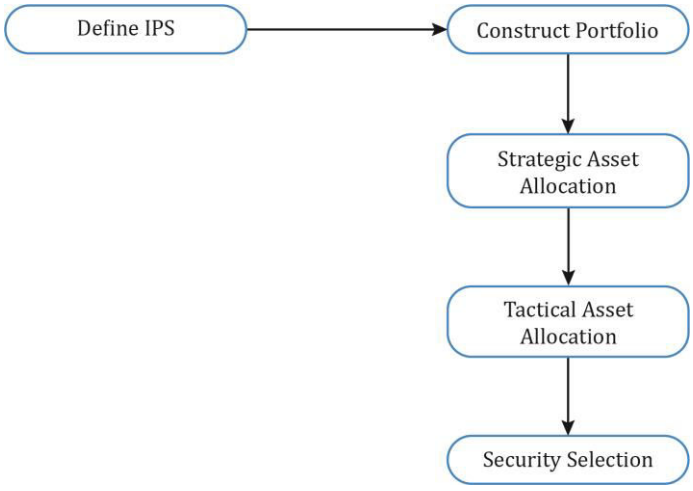


- All assets in an asset class must be homogeneous, and not correlated to other asset classes.
- Correlations of assets with an asset class should be high.
- Risk and return expectations of assets within an asset class must be similar.
- All the asset classes combined should account for the universe of all investable assets.

LO.g: Discuss the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Using the points in the IPS as a guideline, a portfolio is constructed.



Strategic asset allocation is a strategy to allocate a certain percentage of the portfolio to each of the different asset classes in order to achieve the client's long-term goals. Using this method, the portfolio manager decides how much of the client's money should be invested in equities, bonds, or any other asset class to meet the client's long-term goals.

Tactical asset allocation is an active investment strategy that attempts to profit from short-term mispricing. The strategy involves deviating from the intended weights of asset classes in the short-term.

Security selection is the process of determining which securities to include in a portfolio so that the portfolio generates a return higher than the benchmark.

LO.h: Describe how environmental, social, and governance (ESG) considerations may

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be integrated into portfolio planning and construction.

IPS may also include policy regarding responsible investing which takes into account environmental, social, and governance (ESG) factors. The six main ESG investment approaches are:

- Negative screening
- Positive screening
- ESG integration
- Thematic investing
- Engagement/active ownership
- Impact investing

The ESG implementation approaches may have a negative impact on expected risk and return of a portfolio as it may limit the manager's investment universe and the manner in which investment management firms operate. Nonetheless, ESG investing continues to see strong adoptions. Responsible investing proponents argue that the potential improvements in governance and avoidance of material risks will enhance returns.

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Practice Questions

1. Which of the following is *least likely* to be a reason for having a written investment policy statement?
   A. Having a written IPS ensures the client's risk and return objectives can be achieved.
   B. The IPS may be required by regulation.
   C. Having a written IPS is part of the best practice for a portfolio manager.

2. Jane Hall has an investment policy statement that states the return objective of outperforming the NYSE composite index by 200 basis points. Such a return objective is best characterized as having a(n):
   A. arbitrage-based return objective.
   B. relative return objective.
   C. absolute return objective.

3. Which of the following is *best* described as a relative risk objective?
   A. The fund will not lose more than $3 million in the coming 12-month period.
   B. The fund would not underperform the FTSE by more than 400 basis points.
   C. Value at risk will not exceed $5 million.

4. Alex Smith is a 34-years-old male with a secure job that pays USD 300,000 annually, which is three times his family annual expense needs. He has no outstanding debt payments and owns his own house. There are no foreseeable major cash outflows in the future. Despite this, Smith is reluctant to invest in the stock market because he believes that stock market returns are very volatile. Based on this information, which of the following statements is *most accurate*?
   A. Smith has a low ability to take risk but a high willingness to take risk.
   B. Smith has a high ability to take risk but a low willingness to take risk.
   C. Smith has a high ability to take risk and a high willingness to take risk.

5. Which of the following is *least likely* to be discussed in the constraints section of an investment policy statement (IPS)?
   A. Tax Concerns.
   B. The level of risk aversion.
   C. Liquidity.

6. With regards to strategic asset allocation, assets within a specific asset class are *most likely* to have:
   A. high correlations with other asset classes.
   B. high paired correlations.

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C. low paired correlations.

7. Adam Clarke, a portfolio manager has just gathered the investment requirements of a client. He has now decided to allot percentages of the portfolio to the different asset classes in order to achieve the client's long-term goals. This decision is *most likely* an example of:
   A. strategic asset allocation.
   B. rebalancing.
   C. tactical asset allocation.

8. Investing a majority of the portfolio passively and a minority of the portfolio actively is *best* described as:
   A. the top-down approach.
   B. the core-satellite approach.
   C. the bottom-up approach.

9. Which of the following is *most likely* correct regarding ESG investing?
   A. Integrating ESG factors in the investment process increases the portfolio return.
   B. Shareholder engagement is one of the methods for implementing ESG policy in the portfolio construction and investment process.
   C. The ESG factors are kept external to the portfolio planning and construction.

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Solutions

1. A is correct. A written IPS is consistent with best practices to be followed by a portfolio manager. Depending on the circumstances, a written IPS or its equivalent may be required by law. A written IPS however doesn't ensure that risk and return objectives will in fact be achieved.

2. B is correct. Since the return objective specifies a target return relative to a benchmark the NYSE Composite Index, the objective is best described as a relative return objective.

3. B is correct. Since the risk objective makes reference to the FTSE Index, the objective is best described as a relative risk objective. Value at risk (VaR) establishes a minimum value of loss expected during a specified time period at a given level of probability and, hence, option C is a type of absolute risk objective. A statement of the maximum allowed absolute loss of $3 million is also an absolute risk objective.

4. B is correct. Given the high income and savings, Alex's ability to take risk is high. However, his attitude towards the stock market and fear of losing money indicates that his willingness to take risk is low. Measuring willingness to take risk is not as objective as measuring the ability. Ability to take risk is based on relatively objective traits such as expected income, time horizon, and existing wealth relative to liabilities. Here, Alex has a high ability to take risk but his willingness is low.

5. B is correct. The five constraints registered in an investment policy statement are - Liquidity, Legal, Time horizon, Tax, and Unique circumstances.

6. B is correct. Asset classes are so defined that the paired correlations of assets should be relatively high within an asset class and low with assets of different asset classes. This is done with the intention of achieving better diversification.

7. A is correct. After having determined the investor objectives and constraints, a strategic asset allocation is developed which specifies the percentage allocations to the included asset classes. Tactical asset allocation attempts to take advantage of temporary conditions in the market. Hence, the weights of portfolio assets are deviated for a short duration from the predetermined levels arrived at in the SAA.

8. B is correct. In core-satellite approach of constructing a portfolio, a majority of the assets are invested passively or in a low-risk asset, while minority is invested in the high-risk and actively managed assets.

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9. B is correct. ESG implementation approaches may have a negative impact on expected risk and return of a portfolio as it may limit the manager's investment universe and the manner in which investment management firms operate. Nonetheless, ESG investing approaches are also associated with improved governance in the companies. ESG factors can be integrated to the portfolio planning and construction.

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