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The following is a review of the Private Wealth Management principles designed to address the learning outcome statements set forth by CFA Institute®. This topic is also covered in:

# MANAGING INDIVIDUAL INVESTOR PORTFOLIOS<sup>1</sup>

Study Session 4

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## EXAM FOCUS

Some topics to keep in mind in preparing for this year's exam are situational profiling, integrating capital market expectations, behavioral finance issues, and employing Monte Carlo simulations. You will create and/or evaluate an investment policy statement (IPS) for at least one individual investor on the exam.

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## RISK TOLERANCE

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**LOS 14.a: Discuss how source of wealth, measure of wealth, and stage of life affect individual investors' risk tolerance.**

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*Professor's Note: LOS 14.b, 14.l, and 14.m are in the Concept Checkers.*

*Situational profiling* places individuals into categories according to stage of life or economic circumstances. Due to an almost infinite number of individual circumstances, caution should be applied when categorizing individual investors within broad situational profiles. Situational profiling should be considered only a first step in understanding an individual's preferences, economic situation, goals, and desires. The starting points for situational profiling include investigating an investor's sources of wealth, measures of wealth, and stage of life.

## Sources of Wealth

The manner in which an investor acquired wealth is likely to affect the investor's stance on risk. The following is a discussion of two of the most common sources of wealth.

1. Wealth created by entrepreneurial activity.

Wealth created through entrepreneurial activity was actively created and probably indicates investor knowledge and experience with risk-taking decisions. More than likely, a successful entrepreneur is familiar with putting *everything on the line* and, thus, is willing to take risks when making investment decisions. However, the willingness to take risk may have to be balanced with ability to take risk. As a result, a thorough analysis of the client's ability to take risk may be required to assign an

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1. The terminology used throughout this topic review is industry convention as presented in Reading 14 of the 2009 CFA Level 3 exam curriculum.

appropriate level of risk tolerance. Educating the client in basic risk-return principles may be required to appropriately match ability with willingness to assume risk.



*Professor's Note: In Topic Review 17 you see how risk tolerance is dependent upon the entrepreneur's psychological attachment to the firm and the degree of control the entrepreneur has over the firm's operations.*

2. Wealth acquired through inheritance or one-time windfalls or wealth accumulated over long periods of secure employment.

Wealth acquired through inheritance or one-time windfalls or wealth accumulated over a long period of secure employment may indicate an individual who has *less* familiarity with risk-taking activity. Wealth that was received passively may indicate not only the recipient's inexperience with risk-taking decisions but also his unfamiliarity with consequences associated with risky decision making. Educating the client in basic risk-return principles may be required to appropriately match ability with willingness to assume risk.

## Measures of Wealth

The key to measuring wealth is that it is not the absolute size of the portfolio that matters but rather the perception an individual has regarding his wealth level. In general, a positive correlation exists between the perception of portfolio size and the level of risk tolerance (i.e., willingness to take risk). If an investor perceives his portfolio to be small, by whatever measure, a lower level of risk tolerance will be exhibited.

An additional factor regarding wealth measurement is its relative size to spending requirements dictated by an investor's lifestyle. If the portfolio generates a substantial amount of funds relative to those needed to support lifestyle activities, a higher level of risk may be tolerated (i.e., ability and willingness to tolerate risk).

## Stage of Life

In general, an inverse relationship exists between age and risk tolerance. Investors just starting out with young families or those early in their careers are assumed to have more opportunities to recover from market downturns than older investors. Younger investors can typically tolerate higher levels of risk, and their portfolios should reflect aggressive growth characteristics.

Investors in mid-career still have a long time horizon. They can tolerate risk, but their portfolios may become less aggressive and exhibit somewhat more conservative characteristics, especially as they approach retirement.

Investors approaching retirement age may soon not be able to rely on a steady source of income to offset negative portfolio effects. Investors in this later stage of life will probably exhibit a low tolerance to risk.



*Professor's Note: Keep in mind that individual characteristics can dramatically alter the generalities described. An individual who enters retirement with low needs relative to wealth, for example, may have the ability and willingness to tolerate much higher risk than would be expected by his place in the "stage of life" cycle. The relationship between age, wealth, and risk tolerance is discussed in Topic Review 19.*

## WARM-UP: TRADITIONAL ASSUMPTIONS

Traditional finance assumes all investors exhibit three major characteristics:

1. *Risk aversion.* Investors minimize risk for a given level of return or maximize return for a given level of risk.
2. *Rational expectations.* Investors' forecasts properly reflect all relevant information pertaining to security valuation.
3. *Asset integration.* Investors focus not only on an individual asset's risk/return characteristics but also on how that asset interacts with (correlates with) the assets in the portfolio.

## PSYCHOLOGICAL PROFILING AND BEHAVIORAL FINANCE

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**LOS 14.b:** Explain the role of situational and psychological profiling in understanding individual investors.

**LOS 14.c:** Compare and contrast the traditional finance and behavioral finance models of investor decision making.

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*Professor's Note: LOS 14.b is also addressed in the Concept Checkers.*

In contrast to traditional finance, behavioral finance assumes investors exhibit three *psychological* characteristics.

1. *Loss aversion.* This means investors prefer larger uncertain losses to smaller certain losses. Rather than give up and take a small loss, investors would rather take their chances with a larger loss, as long as there is still the possibility of a gain. These investors will tend to hold losing investments too long. In Study Session 3 you will see a related phenomenon called "fear of regret," which suggests that investors hold losers too long so as to avoid the regret associated with having made a bad investment decision.

2. *Biased expectations.* This means investors have too much confidence in their ability to forecast the future. They believe their investment expectations are more likely to be realized and tend to discount or even ignore information not supporting their choices.
3. *Asset segregation.* Instead of evaluating an investment's impact on the overall portfolio position, investors focus on individual assets. These investors either do not understand or choose to ignore the concept of selecting investments from a portfolio perspective. The result can be more risk than is necessary due to a lack of diversification. (This is referred to as *mental accounting*.)

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## PSYCHOLOGY AND RISK TOLERANCE

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### LOS 14.d: Explain the influence of investor psychology on risk tolerance and investment choices.

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Behavioral models indicate that the asset valuation process no longer incorporates only fundamental financial and economic variables. Behavioral finance assumes investors also include individual preferences based upon personal tastes. That is, individuals value investment characteristics that may or may not be validated by traditional finance concepts.

Additionally, individuals tend to construct portfolios one asset at a time rather than using a portfolio/diversification (asset integration) approach. Wealth creation is determined not from an overall portfolio perspective but by making investment decisions that relate to specific goals (e.g., investing in eco-friendly stocks).

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## INVESTOR PERSONALITY TYPES

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### LOS 14.e: Explain the use of a personality typing questionnaire for identifying an investor's personality type.

### LOS 14.f: Compare and contrast risk attitudes and decision-making styles across distinct investor personality types, including cautious, methodical, spontaneous, and individualistic investors.

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Investor attitudes are affected by numerous factors (e.g., socio-economic background, personal experiences, and wealth levels). Through the use of questionnaires that focus on non-investment related questions concerning attitudes and decision making, investors can be classified within broad *personality types*.

A personality-typing questionnaire provides the investment manager and the client with some general classifications for the client's propensity to take risk. One such questionnaire may ask the client to respond to non-investment related questions and attempt to assign the client along two dimensions: (1) risk attitudes and (2) decision-making style.

Four very general categories of attitude and style result from this type of questionnaire and may provide indications into investment-related behavior. Through the process, investors are classified as *cautious*, *methodical*, *spontaneous*, or *individualist*.

**Cautious investors** exhibit a strong desire for financial security and are the *most risk-averse*. They focus on very safe investment vehicles with little potential for loss. Individuals categorized as overly careful investors tend to over-analyze investment opportunities, but once they have made decisions, their portfolios exhibit low turnover and low volatility.

**Methodical investors** research markets, industries, and firms for potential investments and rarely form emotional attachments to investments. Investment decisions tend to be of a conservative nature. Advising these clients may be difficult due to the confidence placed on their own methodical investment processes. Methodical investors tend to be more risk-averse than individualistic investors.

**Individualistic investors** are not afraid of doing their own homework and are confident in their abilities. Their confidence makes them capable of questioning inconsistencies in analysts' recommendations or conclusions. Although careful in their analysis, they are not deterred from making independent investment decisions. Individualistic investors tend to be less risk-averse than methodical investors.

**Spontaneous investors** tend to adjust their portfolios to contain the latest *hot* investment. The constant pursuit of the most recent investment craze causes their portfolios to exhibit much higher turnover levels than those of other investors. Portfolio performance is often negated by the high trading costs associated with frequent portfolio adjustments. Risk considerations take a back seat in their investment decision-making process.

## THE INVESTMENT POLICY STATEMENT

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**LOS 14.g:** Explain the potential benefits, for both clients and investment advisors, of having a formal investment policy statement.

**LOS 14.h:** Explain the process involved in creating an investment policy statement.

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For the *client*, an investment policy statement (IPS) is the document that guides and controls investment decision making.

- Objectives and constraints are considered in formulating investment decisions that benefit the client in an optimal way.
- The process is dynamic and allows changes in circumstances to be incorporated into overall investment decisions.
- A well-written IPS represents the long-term objectives of the investor.
- Even if there are changes in conditions or investment advisers, subsequent managers should be able to implement decisions congruent with the individual's goals and objectives.

*Advisers* also benefit from an IPS because it serves as the document formally stating an understanding and agreement with clients.

- If questions arise regarding specific investment decisions, the IPS can be consulted for clarification as to the appropriateness of such decisions.
- Since most IPSs contain a stated review process, the document should indicate, or at least provide, direction for dispute resolution. The document identifies issues that could eventually become problems.

### Creating an IPS



*Professor's Note: The overall process for creating an IPS is the same for both individual and institutional clients. However, an individual's IPS differs from an institution's IPS in that time horizon and unique circumstances play a more prominent role for the individual, while legal and regulatory considerations are typically more important to institutional investors.*

Steps in the process include the following:

- Determine and evaluate the investor's risk and return objectives. Planning return expectations should take place concurrently with risk tolerance discussions.
- Determine portfolio constraints.
- Define the appropriate investment strategy based upon an analysis of objectives and constraints and market expectations.
- Determine the proper asset allocation appropriate to meet the investor's objectives and constraints.
- Execute portfolio decisions in a timely fashion and, after an agreed-upon time period, evaluate performance.
- Make modifications or adjustments to the portfolio as needed to ensure maintenance of originally stated objectives and constraints.



*Professor's Note: There are three main steps in the IPS creation process: (1) planning, (2) execution, and (3) feedback. Never forget that this process is ongoing and dynamic. Monitoring of the market environment and investor characteristics is integral to the IPS process.*

**For the Exam:** More than likely, you will have at least two essay questions around the individual investor topic that will require you to develop the objectives and constraints of an IPS. Either in conjunction with these questions or separately, you will need to construct or rebalance the individual's portfolio based on your developed IPS. Keep the following points in mind:

- There will be significant points associated with these questions, and you should get most if not all of these points if you commit to memory each component of the IPS and methodically address each of them.
- As you construct the IPS, be sure to address each component separately and with the appropriate circumstances associated with the case. *Objectives:* return objective and risk tolerance. *Constraints:* liquidity needs, time horizon, tax considerations, legal and regulatory requirements, and unique circumstances.
- As you are constructing or rebalancing a portfolio, it is important that you check the consistency of the asset class or security selections made with the objectives and constraints of the IPS (e.g., be aware of disallowed asset classes).

The wrong approach to the exam cases can lead to wasted time and costly mistakes. When approaching the cases:

- Read the questions before you start reading the vignette. This will save you time in the long run, because you will know what to look for in the vignette.
- As you read the vignette, underline sections of the text and write notes in the margin next to the underlined sections that indicate what section of the IPS the text will support: return, risk, liquidity, horizon, taxes, legal and regulatory, and unique circumstances.

Sometimes the case describes a trust and, possibly, several personal situations—make sure you are addressing the correct IPS.

## INDIVIDUAL INVESTOR OBJECTIVES

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**LOS 14.i:** Distinguish between required return and desired return and explain the impact these have on the individual investor's investment policy.

**LOS 14.j:** Explain how to set risk and return objectives for individual investor portfolios, and discuss the impact that ability and willingness to take risk have on risk tolerance.

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**Return objective.** A distinction between *required* and *desired* return levels should be discussed with the client. An explicit statement as to whether the returns are *after-tax* should also be made.

- Return requirements will usually be dictated by spending and growth objectives.
- *Required returns* are those necessary to meet an investor's major long-term financial objectives, such as retirement living expenses, kids' college expenses, et cetera.
- *Desired returns* are associated with non-primary goals and objectives, such as vacation homes, travel, and the like.

**For the Exam:** A particularly important item you need to remember for the exam concerning return objectives is that returns should be considered from a *total return* perspective. Spending objectives usually represent an income component while growth objectives represent a capital gains component of total return. The key is that even when confronted with a substantial income requirement, attention to portfolio growth is also required.

When completing the return objectives section of the IPS:

- Stick with the facts of the case.
- Assess the time horizon—the longer the horizon, the more concerned the investor should be with inflation and real returns, but risk tolerance usually increases with the time horizon.
- Assess the liquidity requirements—remember that items to include under liquidity in the IPS are outflows that must be met by the portfolio, not the investor's salary or other income.

**Risk objective.** An individual will have both a *willingness* and an *ability* to take risk. Ability to take risk can be more amenable to quantification due to the connection between goals and time horizon to reach those goals. Determining the individual's willingness to take risk requires a more subjective analysis.

### Ability vs. Willingness to Take Risk

To measure the investor's *ability* to take risk, determine:

- The investor's short- and long-term goals.

One of the distinguishing factors between individual and institutional investors is time horizon. Institutional investors may have infinite life, but individuals do not. Paying attention to the different goals of an individual is crucial when determining ability for risk taking.

The ability to take risk is determined by the investor's time horizon and the size of his portfolio and income relative to his goals. Generally, if investment objectives are small relative to portfolio size and time horizon is long, the investor has a greater ability to take risk. If the objectives are large relative to portfolio size and the time horizon is short, ability to recover from any unfavorable portfolio performance will be lessened, so risk tolerance is significantly reduced.

- The importance of the investor goals (i.e., what are the consequences if goals are not met?).

Goals related to financial security, maintaining current lifestyle, and providing for loved ones are usually classified as *critical*. Goals related to acquiring luxury items, building second homes, or taking lavish vacations are important but are usually secondary to sustaining current lifestyle. Hence, risk is far more important a consideration in attaining critical goals than in attaining secondary goals. The manager and investor

should focus on secondary goals only after developing an appropriate strategy for meeting critical goals.

- The amount of volatility the portfolio can bear before its ability to meet major goals is jeopardized.

If the expected return on the portfolio must be increased to the point that the portfolio is just too risky, the goals must be re-evaluated. The bottom line here is that the financial goals must be realistic for the current size of the portfolio and the investor's ability to make future contributions to the portfolio.

*Willingness* to take risk is subjective and is determined by the *psychological* profile of the client. There is no hard and fast rule for judging willingness to take risk, but look for explicit statements or evidence in the client's actions.

**For the Exam:** Keep an eye out for explicit or implicit *willingness* statements made by the client. They might be very subtle, but they can be critically important.

When completing the risk tolerance section of the IPS, keep the following points in mind:

- An absolute requirement is that, if the case states anything concerning the investor's view of their risk tolerance, you must address it. For example, if the investor's willingness is inconsistent with what the investor's personal situation might dictate (i.e., ability), you should note this discrepancy.
- Time horizon is an important factor in determining the individual's ability to tolerate risk, so paying particular attention to this is important—the longer the horizon, *generally* the more risk-tolerant the individual is (i.e., ability).
- If a conflict arises between ability and willingness to take risk, honor the client's willingness if it is less than or equal to the ability to take risk. If willingness is greater than ability, honor ability and suggest investor education to reconcile the difference.
- If a return objective cannot be accomplished given the risk tolerance framework, you should note the inconsistency and recommend client education and a reassessment of the portfolio objectives.

## INDIVIDUAL INVESTOR CONSTRAINTS

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**LOS 14.k: Identify and explain each of the major constraint categories included in an individual investor's investment policy statement.**

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There are five major constraints for the individual investor's IPS: (1) time horizon, (2) tax concerns, (3) liquidity, (4) legal and regulatory factors, and (5) unique circumstances.

## Time Horizon

Goals must be separated according to time horizon. Time horizons shorter than three years are often considered short-term. Time horizons longer than ten years are considered long-term.

You may see cases on the exam that deal with three time horizons:

1. *Preretirement.* The years from IPS development to retirement.
2. *Retirement.* The projected number of years after retirement that the investor will live on proceeds from the portfolio.
3. *Postretirement.* A euphemism for disposition of the wealth after death.

**For the Exam:** When completing the time horizon section of the IPS:

- You need to explicitly state the number and length (in years) of time horizons involved in a particular case. A *time horizon* is generated every time the investor's circumstances change significantly. For instance, an individual who is currently employed will have at least two time horizons: remaining working years and retirement years. Additional time horizons may be generated within a stage of life anytime a planned expense is significant enough to alter the IPS.
- Be cognizant of time horizons that are not related to the individual but to people related to them. For example, an individual's parents may pass away and leave significant assets to the individual or to his children, who may be going on to higher education or may need seed money to start their own businesses.
- All the client's time horizons are necessary for only that portion of the IPS. For the others (i.e., return, risk, liquidity, legal and regulatory, taxes, and unique circumstances) consider only the first time horizon unless specifically directed otherwise.

## Tax Considerations

Taxation is a global issue and must be taken into account when formulating investment policy. Some general classifications of tax are:

- *Income tax.* Taxes paid on cash flows (e.g., wage, rental, dividend, or interest income).
- *Capital gains tax.* Taxes paid on price appreciation.
- *Transfer tax.* Taxes paid on assets transferred through inheritance, gifts, et cetera.
- *Wealth tax* or *personal property tax.* Taxes paid on a portion of net worth or assets owned (e.g., automobiles).

Taxes are a constraining factor on individual portfolios because they affect return in one of two ways. Taxes paid at the end of a holding period reduce the final value of the portfolio by the amount of tax. However, taxes paid in an interim time horizon have an

impact on the portfolio through a reduction of compounding benefits. The following are some of the ways to reduce the adverse impact of tax effects on the portfolio.



*Professor's Note: Taxes are covered in more detail in topic reviews 15 and 16.*

- *Tax deferral.* Minimize tax effects by paying taxes at the end of the investment-holding period. Strategies that fall under this category focus on low turnover and offsetting portfolio gains with portfolio losses (the term for this offset is loss harvesting).
- *Tax avoidance.* Invest in tax-free securities. Special savings accounts and tax-free municipal bonds are examples of investment securities that generate tax-free returns.
- *Tax reduction.* Invest in securities that require less direct tax payment. Capital gains may be taxed at a lower rate than income, so securities that generate returns mainly as price appreciation offer the investor a lower effective tax rate. Effective use of derivative securities is another way to reduce overall tax impact.
- *Wealth transfer taxes.* Minimize taxes by judiciously planning the transfer of wealth from one party to the next without involving a sale. Often, these strategies are quite specific to the jurisdiction in which the investor resides. Considerations to when the transfers will be made are also important. If wealth is transferred at death, taxes will have been deferred as long as possible. If wealth is transferred prior to death (an early transfer), the recipient's taxes may be reduced (e.g., a younger family member taxed at a lower rate than the one making the gift).

**For the Exam:** When completing the taxes section of the IPS:

- Identify whether or not portfolio gains will be subject to taxes.
- If not explicitly stated in the case, state whether or not the returns are before- or after-tax.
- Remember that income in the form of dividends or interest is taxable outside of a retirement account but not within.
- If tax treatments are uncertain (e.g., a living trust), include the recommendation for legal counsel.

## Liquidity Issues

The liquidity constraints of a portfolio sometimes relate to the ability to meet everyday needs as well as unexpected events:

- *Normal expenses.* These expenses represent *anticipated* needs for cash and are usually tied to living expenses. Only living expenses that must be met by the portfolio should be included under liquidity.
- *Sufficient surplus.* There should be sufficient reserves to meet emergencies, such as unexpected medical expenses, and uninsured losses fall into this category. The size of this surplus will vary according to individual circumstances but often ranges from 3- to 12-months' living expenses. The need for cash to meet these expenses is immediate and, thus, increases liquidity constraints on the portfolio. If not

specifically stated, say “three months’ salary should be kept in cash” in the liquidity section of the IPS. Other than that, always seek to minimize the portfolio allocation to cash.

- *Major planned events.* These expenses relate to major planned expenses, such as vacations, home remodeling, or even retirement, that lead to negative cash flows (i.e., more coming out of the portfolio than going in). The closer the time to these events, the greater the need for portfolio liquidity.

The liquidity characteristics of portfolio assets also need to be addressed.

- *Transaction costs.* Transaction costs can be either explicit, such as commissions, or implicit, such as price impacts from liquidating a position. Generally, the higher the transaction costs, the lower the liquidity.
- *Volatility.* Highly volatile securities may not be able to generate required cash when needed. Securities with highly volatile changes in value depress a portfolio’s liquidity and, thus, should probably not be held by clients who need liquidity.
- *Illiquid holdings.* Often, the largest asset owned by an individual is the home. A home may be highly valuable, but its highly illiquid status usually prohibits considering it a viable asset for liquidity requirements. The home is considered a *legacy asset* that may not be included in the overall asset allocation specified in the IPS. Except for the home’s ability to raise funds either through sale or collateral for borrowing, the investor’s primary residence should not be considered a liquid asset. Substantial holdings of shares of a privately held company are also somewhat problematic for liquidity needs.

**For the Exam:** When completing the liquidity needs section of the IPS:

- Liquidity constraints can be divided into three main groups: immediate liquidity needs, ongoing liquidity needs, and one-time liquidity needs.
- Immediate liquidity needs are expenses that need to be satisfied immediately or within a very short time period. These needs are typically addressed through a reserve fund of cash or directly out of cash available for investments (e.g., funds needed in three months to purchase a house should be removed from the value of the portfolio before determining required return).
- Ongoing liquidity needs are those recurring expenses that need to be paid at regular intervals out of portfolio returns.
- One-time liquidity needs include usually major expected cash flows (e.g., second home) that are met by liquidating a portion of the portfolio.

## Legal and Regulatory Factors

The legal and regulatory constraints that apply to individuals are mainly associated with taxes and transfer of personal property. The specific constraints vary greatly across jurisdictions and typically call for legal advice.



*Professor's Note: Prudent investor rules tell us that any potential investment should be considered in the context of its impact on the portfolio of assets. This has allowed the inclusion of a larger number of asset classes such as futures and options. In fact, the rule mandates portfolio diversification.*

*One of the potential situations you may be asked to address on the exam concerning legal and regulatory factors for an individual relates to trust accounts. Trust accounts are not investment strategies per se but vehicles useful for either estate or tax planning purposes. You should know some basic terminology related to trusts.*

*Personal trusts. These legal entities become the owner of assets transferred by the grantor, who creates the trust. A trust document states the purpose of the trust and names the trustee, who is responsible for administering the trust. There are two types of personal trusts:*

- *Revocable trusts allow conditions in the trust document to be changed or deleted. Assets usually remain under the control of the grantor, who is responsible for paying any taxes related to income generated by the trust.*
- *Irrevocable trusts do not allow conditions in the trust document to be changed. Since the grantor no longer controls the assets, this type of trust is considered an immediate transfer of property ownership. Wealth transfer taxes may have to be paid when ownership is transferred. A hybrid irrevocable trust is one designed to benefit one party now but then transfer assets to another party at a later date. The income beneficiary receives current income generated by the assets of the trust. Asset ownership is then passed to the remaindermen listed in the trust document. Trusts are discussed in an estate-planning framework in Topic Review 16.*

**For the Exam:** When completing the regulatory concerns section of the IPS:

- The most important thing here is to mention that the prudent investor rule is the governing regulatory requirement for portfolio management.
- If the account in question is a trust, you should also mention that the manager must balance the interest of the income beneficiary and the remaindermen.
- Legal constraints can be very complex. I recommend you state that consultation with legal counsel is encouraged.

## Unique Circumstances

This is a catch-all category for anything that does not fit into other categories. Miscellaneous information or requests that should be kept in mind, such as future *out of the ordinary* expenditures or disallowed investments, usually appear in this section of the IPS.

**For the Exam:** When completing the unique circumstances section of the IPS:

- This section can either be left as *none* or can include a wide variety of items.
- Past cases have included the presence of large amounts of company stock or large return requirements aligned against either low-risk tolerances or short time horizons.
- Anything that shows inconsistency with the rest of the case or that we are told to ignore (but still affects the client) should be noted here.
- A very common unique circumstance is an investor-imposed constraint against certain investments.

## STRATEGIC ASSET ALLOCATION

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**LOS 14.m:** Determine the strategic asset allocation that is most appropriate for an individual investor's specific investment objectives and constraints.

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*Professor's Note: LOS 14.m is also addressed in the Concept Checkers.*

The key is selecting the allocation that best matches the objectives and constraints of the investor, but that's easier said than done. The process of elimination may help by eliminating allocations not having much chance of satisfying objectives and constraints.

The process of elimination begins by selecting those allocations generating returns that meet the return objective of the investor. Next, the manager should choose those allocations that do not violate statements relating to risk or *safety first rules* (i.e., worst case returns). This second step may require calculations (e.g., subtracting two standard deviations from the expected return).

This two-step process of taking into account return and risk objectives should eliminate those allocations not meeting the investor's objectives. If two choices are left that meet the required return and safety first rules, examine the allocations and eliminate the one that is inappropriate for other reasons.



*Professor's Note: Safety first rules were first introduced at Level 1. A common definition of a "worst case return" would be to determine the return that falls two standard deviations below the expected return. Level 3 has Roy's safety first measure, which you will see in Study Session 8.*

**For the Exam:** In selecting an appropriate asset allocation:

- Candidates are sometimes asked to select the appropriate portfolio from five or six alternatives.
- Establish a broad assessment as to how much should be allocated to stocks, bonds, and cash. (Always strive to hold as little cash as possible.)
- Once you have this in mind, apply these guidelines to the alternative portfolios and eliminate those that don't meet your criteria.
- If you are left with two or three portfolios that may fit your general requirements, further reduce the number by using the following screens:
  - ◆ Return requirements must be fully met. (Remember to note if the returns are stated on a before- or after-tax basis.)
  - ◆ Liquidity requirements are fully met. (Remember to think from a total return perspective. Liquidity needs can be met using portfolio income and by selling assets.)
  - ◆ Risk tolerance will also guide you in that you want to select the portfolio that meets the return requirements with as little risk as possible.
- Occasionally, the investor will specifically request limits to some asset classes and/or exclusion of some. This request must be met and can be the basis for removing inappropriate portfolios.
- If municipal bonds are present, make sure their returns are converted into taxable equivalents.
- Finally, do a review of the IPS to make sure the portfolio construction is consistent with the IPS criteria.

## MONTE CARLO APPROACH TO RETIREMENT PLANNING

**LOS 14.n: Compare and contrast traditional deterministic versus Monte Carlo approaches to retirement planning and explain the advantages of a Monte Carlo approach.**

*Deterministic* planning techniques use single estimates for economic and financial variables. For instance, expected rates of return, inflation, and interest rates are assigned single point estimates and then used in a modeling framework to estimate assets available for the retirement period. Although useful in formulating expected investment outcome at the retirement stage of life, the deterministic estimation process generates only a single number. Investors do not have the capability of evaluating probabilities of that expected value occurring.

*Monte Carlo* simulation techniques take into account distributions and associated probabilities for input variables and generate a probability distribution of future values. Instead of seeing one single outcome, the investor can see a range of possibilities for the future.

Although Monte Carlo techniques provide the individual investor a means for incorporating probabilities into the retirement planning process, the results are only

as good as the inputs (e.g., distributions assumed). That is, although seemingly very sophisticated, the weakness of Monte Carlo simulations is the need to pre-specify the distributions of the variables used or rely on historical distributions.

There are four primary advantages of Monte Carlo in retirement planning:

1. Probabilistic forecasts give both the client and the manager a better indication of the risk/return tradeoff in investment decisions. Instead of a *yes/no, it meets/does not meet the hurdle* analysis, investors can see potential portfolio risk and return along the path to retirement.
2. Monte Carlo simulations explicitly show the tradeoffs of short-term risks and the risks of not meeting goals. Seeing the adverse impacts of simulated short-term volatility may provide the investor with a valuable learning experience, if unfavorable conditions are realized in the future. The goal is a long-term objective, which may not be met if the investor panics in the short term.
3. Monte Carlo is better able to incorporate tax calculation nuances than deterministic approaches.
4. Monte Carlo can better model the complications associated with future returns by more effectively incorporating the compounding effect of reinvestment.

## KEY CONCEPTS

### LOS 14.a

#### Sources of Wealth

The manner in which an investor acquired wealth is likely to affect the investor's stance on risk. Wealth created through entrepreneurial activity was actively created and probably indicates investor knowledge and experience with risk-taking decisions.

Wealth acquired through inheritance or one-time windfalls or wealth accumulated over a long period of secure employment may indicate an individual who has less familiarity with risk-taking activity.

#### Measures of Wealth

In general, a positive correlation exists between the perception of portfolio size and the level of risk tolerance (i.e., willingness to take risk). If the portfolio generates a substantial amount of funds relative to those needed to support lifestyle activities, a higher level of risk may be tolerated.

#### Stage of Life

In general, an inverse relationship exists between age and risk tolerance. Younger investors can typically tolerate higher levels of risk, and their portfolios should reflect aggressive growth characteristics.

Investors in mid-career still have a long time horizon. They can tolerate risk, but their portfolios may become less aggressive and exhibit somewhat more conservative characteristics.

Investors approaching retirement age will probably exhibit a low tolerance to risk.

### LOS 14.b

Situational profiling categorizes individuals according to stage of life and economic circumstance. It is a first step at trying to understand the individual's needs and desires.

### LOS 14.c

Traditional finance assumes all investors exhibit three major characteristics:

1. Risk aversion. Investors minimize risk for a given level of return.
2. Rational expectations. Investors' forecasts properly reflect all relevant information pertaining to security valuation.
3. Asset integration. Investors focus not only on an individual asset's risk/return characteristics but also on how that asset (correlates with) the assets in the portfolio.

In contrast to traditional finance, behavioral finance assumes investors exhibit three psychological characteristics:

1. Loss aversion. This means investors prefer larger uncertain losses to smaller certain losses.
2. Biased expectations. This means investors have too much confidence in their ability to forecast the future.
3. Asset segregation. Instead of evaluating an investment's impact on the overall portfolio position, investors focus on individual assets.

#### LOS 14.d

Behavioral models imply that investor psychology influences wealth creation and investment choices by valuing characteristics of assets that are not related to the traditional economic variables risk and return.

#### LOS 14.e

A personality-typing questionnaire provides the investment manager and the client with some general classifications for the client's propensity to take risk. One such questionnaire may ask the client to respond to non-investment related questions and attempt to assign the client along two dimensions: (1) risk attitudes and (2) decision-making style.

#### LOS 14.f

Investor personality types can be classified according to four general categories:

- Cautious—very risk-averse, with decisions based primarily on feeling.
- Methodical—more risk-averse, with decisions based primarily on thinking.
- Individualistic—less risk-averse, with decisions based primarily on thinking.
- Spontaneous—less risk-averse, with decisions based primarily on feeling.

#### LOS 14.g

For the client, an investment policy statement (IPS) is the document that guides and controls investment decision making.

Advisers also benefit from an IPS because it serves as the document formally stating an understanding and agreement with clients.

#### LOS 14.h

There are three main steps in the IPS creation process: (1) planning, (2) execution, and (3) feedback.

Steps in the process include the following:

- Determine and evaluate the investor's risk and return objectives.
- Determine portfolio constraints.
- Define the appropriate investment strategy.
- Determine the proper asset allocation.
- Execute portfolio decisions in a timely fashion and evaluate performance.
- Make modifications or adjustments to the portfolio as needed.

**LOS 14.i**

Objectives relate to determining risk and return relationships. Return objectives can be classified according to required and desired return levels. Required returns are those necessary to meet an investor's major long-term financial objectives. Desired returns are associated with non-primary goals.

**LOS 14.j**

Risk objectives can be delineated according to ability and willingness to take risk. Ability to take risk is determined by the time horizon of the investment and the portfolio size in relation to goals. Willingness to take risk is much more subjective and is related to the psychological profile of the client.

**LOS 14.k**

There are five major constraints for the individual investor's IPS:

**Time Horizon**

You may see cases on the exam that deal with three time horizons:

1. Preretirement.
2. Retirement.
3. Postretirement. A euphemism for disposition of the wealth after death.

**Taxes**

Some general classifications of tax are:

- Income tax.
- Capital gains tax.
- Transfer tax. Taxes paid on assets transferred through inheritance, gifts, et cetera.
- Wealth tax or personal property tax.

**Liquidity**

The liquidity constraints of a portfolio sometimes relate to the ability to meet everyday needs as well as unexpected events.

**Legal and Regulatory**

- The most important thing here is to mention that the prudent investor rule is the governing regulatory requirement for portfolio management.
- If the account in question is a trust, the manager must balance the interest of the income beneficiary and the remaindermen.
- Legal constraints can be very complex. State that consultation with legal counsel is encouraged.

**LOS 14.m**

A process of elimination method may be employed in selecting an optimal asset allocation, whereby an adviser eliminates those allocations not meeting return and risk requirements.

### LOS 14.n

Deterministic planning techniques use single estimates for economic and financial variables. For instance, expected rates of return, inflation, and interest rates are assigned single point estimates and then used in a modeling framework to estimate assets available for the retirement period.

Monte Carlo simulation techniques take into account distributions and associated probabilities for input variables and generate a probability distribution of future values.

There are four primary advantages of Monte Carlo in retirement planning:

1. Probabilistic forecasts give both the client and the manager a better indication of the risk/return tradeoff in investment decisions.
2. Monte Carlo simulations explicitly show the tradeoffs of short-term risks and the risks of not meeting goals.
3. Monte Carlo is better able to incorporate tax calculation nuances than deterministic approaches.
4. Monte Carlo can better model the complications associated with future returns by more effectively incorporating the compounding effect of reinvestment.



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**LOS 14.b: Explain the role of situational and psychological profiling in understanding individual investors. (continued)**

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**LOS 14.1: Formulate and justify an investment policy statement for an individual investor.**

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6. William and Elizabeth Elam recently inherited \$500,000 from Elizabeth's father, Abraham, and have come to Alan Schneider, CFA, for assistance. Both William and Elizabeth are 30 years old. William is employed as a factory worker with a salary of \$40,000. Elizabeth is a teacher's aide and has a salary of \$18,000. Their four children are ages 6, 5, 4, and 3. They have no other investments and a current credit card debt of \$10,000.

When interviewed by Schneider, William made the following statements:

- I love being on top of the latest trends in investing.
- My friend, Keith, told me that the really smart investor holds stocks for no more than a month. After that, if you haven't made a profit, you probably won't.
- Technology stocks are hot! Everyone has been buying them.
- Can you believe that my mother still has the same portfolio she had a year ago? How boring!

A. **Evaluate** the Elams' situational profile according to:

- i. Source of wealth.
- ii. Measure of wealth.
- iii. Stage of life.

B. **Classify** the Elams into one of the following personality types. **Justify** your classification.

- i. Cautious investor.
- ii. Methodical investor.
- iii. Spontaneous investor.
- iv. Individualistic investor.

- C. Using the following template, **develop** an investment policy statement (IPS) for the Elams.

<i>Investment Policy Statement for the Elams</i>		
Objectives	Return objectives	
	Risk tolerance	
Constraints	Time horizon	
	Liquidity	
	Legal and regulatory	
	Taxes	
	Unique circumstances	

7. Bonnie DuBois, age 60, recently retired from her position as an international fashion designer. She has accumulated \$3,000,000 for retirement. She supports her son, Barry, age 40, his wife, and three children (ages 14, 12, and 10). Neither Barry nor his wife work outside the home.

DuBois estimates that she will need \$60,000 (in today's dollars) annually to live comfortably. Inflation is expected to be 3% annually, and she is in the 28% marginal tax bracket. She plans to continue supporting her son and his family on \$30,000, also indexed for inflation. However, she has informed them that should she die, a gift fund will be established with the local museum and that her son's family will only receive \$20,000 in interest from the gift account. Otherwise, the fund will be managed for the benefit of the museum. Thus, another goal is to maintain her principal in the retirement fund for her gift account with the museum.

DuBois has a desire to travel to Australia for four months as a retirement present to herself and requires \$50,000 for her travel expenses. DuBois states that she is willing to assume some risk to obtain her objectives.

- A. **Evaluate** DuBois' situational profile according to:
- i. Source of wealth.
  - ii. Measure of wealth.
  - iii. Stage of life.

- B. **Classify** DuBois into one of the following personality types. **Justify** your classification.
- i. Cautious investor.
  - ii. Methodical investor.
  - iii. Spontaneous investor.
  - iv. Individualistic investor.
- C. Using the following template, **develop** an IPS for DuBois.

<i>Investment Policy Statement for Bonnie DuBois</i>		
Objectives	Return objectives	
	Risk tolerance	
Constraints	Time horizon	
	Liquidity	
	Legal and regulatory	
	Taxes	
	Unique circumstances	

- D. Based on the information presented in the case and your IPS, select and justify one of the following portfolios for DuBois.

**LOS 14.m: Determine the strategic asset allocation that is most appropriate for an individual investor's specific investment objectives and constraints. (continued)**

<i>Asset Class</i>	<i>Allocation A</i>	<i>Allocation B</i>	<i>Allocation C</i>	<i>Allocation D</i>
U.S. stocks (large)	50%	30%	20%	10%
U.S. stocks (small)	10%	20%	10%	
International developed market equities	5%	5%	5%	
International emerging market equities	5%	5%	5%	
U.S. corporate bonds	10%	30%	20%	50%
U.S. Treasury bonds			10%	20%
Real estate			5%	
Venture capital	20%		10%	
Cash		10%	15%	20%
Total expected return	12.0%	9.0%	7.0%	5.0%
Current yield	1.5%	2.5%	4.0%	4.5%

#### Selected Asset Allocation and Justification

Selected Asset Allocation	Justification

8. According to principles of the behavioral finance investment framework, loss aversion would *most likely* lead an investor to:
- fully adjust their expectations to new information as it arrives.
  - prefer to take a small loss rather than take a risk with a potential but not certain larger loss.
  - prefer to take a risk with a potential but not certain larger loss than take a certain small loss.

9. With respect to benefits of an IPS, which of the following statements is *most accurate*?
- A. An adviser can benefit because the IPS is dynamic and can accommodate changing conditions.
  - B. A client can benefit because the IPS can clarify points for decision making and for resolving disputes.
  - C. An adviser can benefit because the IPS can clarify points for decision making and for resolving disputes.

## ANSWERS – CONCEPT CHECKERS

1.
  - i. Information related to source of wealth describes how an investor accumulated wealth. At one end of the spectrum is wealth acquired through active means (e.g., entrepreneurial activities). This indicates knowledge and experience with risk-taking activities. The other end of the spectrum is wealth acquired through passive means (e.g., inheritance or long-term employment in a stable corporation). The latter may indicate an investor with less knowledge and experience of risk-taking activities.
  - ii. The key to understanding measures of wealth relates to how an investor perceives his level of wealth. The perception of wealth may be in relation to funds required to sustain lifestyle activities. If a portfolio is perceived as small, risk tolerance may be low. If a portfolio is perceived as large, risk tolerance may be high.
  - iii. Stage of life descriptions indicate where an investor is in relation to the life cycle. Life expectancy is a large factor in connecting stage of life to risk tolerance. Due to a long time horizon, young investors often have a high tolerance for risk. Older investors, however, may have a diminished risk tolerance.
2.
  - i. Cautious investors are the most risk-averse. They tend to take long periods of time to make decisions and often invest in only the safest securities.
  - ii. Methodical investors spend long periods of time evaluating security characteristics. They expend a large amount of effort on their analytical capabilities but are confident when making investment decisions. Portfolios tend to be somewhat conservative.
  - iii. Spontaneous investors pay little attention to valuation issues. They are more concerned with creating a portfolio that holds the latest *hot* investment idea. Due to their nature, spontaneous investors' portfolios exhibit high turnover and volatility.
  - iv. Individualistic investors are very confident in making independent investment decisions. They are less risk-averse than methodical investors.
3. Required returns are those returns associated with critical or primary investor goals. Desired returns are associated with secondary goals. Both must be consistent with the risk tolerance exhibited by the investor.
4. Ability to take risk is associated with time horizon, size of investment portfolio, and investor goals. If time horizon is short, size of portfolio is small, and goals are critical, ability to take risk is low. Willingness to take risk is a much more subjective measure. Personal knowledge and experiences affect an investor's willingness to take risk. Often the financial services professional will need to educate the client on the basics of risk and return in order to reconcile any difference between the client's willingness and ability to accept risk.
5. The process of elimination begins by choosing only those allocations that meet or exceed stated return objectives. Then choices are made based on risk, whether that is related to an overall risk measure or some worst case scenario. If there is more than one choice left, additional statements regarding allocation appropriateness need to be taken into account.
6. A.
  - i. William and his family received their source of wealth from a recent inheritance. The Elam family receives income from salaried positions. A passive accumulation of wealth is indicated and may be representative of a lack of knowledge with respect to risk-taking activities. Educating Elam on basic risk principles may be in order.
  - ii. Elam probably perceives his portfolio to be large. The \$500,000 is a substantial windfall for his young family of six. Even taking into consideration the credit card debt, the portfolio still represents a substantial asset in the family's overall portfolio. Preliminary evidence indicates an ability to take above-average risk.

- iii. The case states Elam and his wife are both 30 years old. This age represents a long-term horizon for the future and is indicative of high willingness and ability to take risk.
- B. Based on the statements made in the interview, we can classify William as spontaneous. His statements related to latest trends in investing, short holding period, and his mother's *boring* portfolio point to an individual with a spontaneous investor personality type.
- C. Objectives:

*Return objectives.* The Elams are early in the stage of life. With a long time horizon, the Elams should focus their portfolio on capital-gain, growth-oriented investments.

*Risk tolerance.* Because of their long time horizon and their situational profile, the Elams have the ability to tolerate an above-average level of risk. Based on the interview with William, the Elams have stated a willingness to tolerate an above-average level of risk. Therefore the portfolio can be constructed based on an above-average level of risk. Based upon their lack of investing experience and rather aggressive attitude toward portfolio risk management, however, the financial services professional should be certain that the Elams have a clear understanding of the concepts of risk and return.

Constraints:

*Time horizon.* The Elams' time horizon is long term and at least two-fold: the time until retirement and their retirement years. It is possible that a third time horizon could develop should the Elams decide to support their children through post-secondary education. Should they decide to retire at age 60, their pre-retirement time horizon would be 30 years.

*Liquidity.* The main liquidity constraint presented in the case is immediate (the \$10,000 in credit card debt). It is recommended that the Elams eliminate this liability with the inheritance funds immediately.

*Legal and regulatory.* No special legal or regulatory problems are apparent. Prudent investor rules apply if William is interested in creating a trust fund.

*Taxes.* Since dividends are taxed at a higher rate than capital gains, from a tax perspective their long-term, growth orientation is preferable to taxable investment income.

*Unique circumstances.* No special unique circumstances are apparent.

- 7. A. i. DuBois' source of wealth has been from her position as an international fashion designer. The information does not state whether she owned the company or was simply an employee, but fashions do have a tendency to fall in and out of favor with the public. Hence, DuBois probably has some experience with risk-taking activity, although she may not be knowledgeable of risks associated with financial markets.
- ii. DuBois' \$3,000,000 portfolio is large relative to the required \$90,000 annual living expenses. Except for the immediate vacation travel expenses mentioned, no other substantial liquidity requirements seem present. Hence, the size of DuBois' wealth can be considered large in relation to her desired living requirements. This indicates a situation able to tolerate risk.
- iii. DuBois is aged 60 and recently retired. No statements are made regarding ill health, so she potentially is facing a long time horizon. She is in the latter stage of life, though, and has mentioned a desire to gift funds to a local museum after she dies. She has stated a willingness to assume risk.

- B. DuBois' personality type lies somewhere between cautious and spontaneous. The case does not mention any investment experience, but her situational profile indicates a somewhat risk-tolerant individual. Her participation in the international fashion industry probably indicates a desire to follow the latest *hot* trends.
- C. Investment policy statement for Bonnie DuBois.

Objectives:

*Return objective.* In order to meet her liquidity requirements, DuBois' portfolio must generate a before-tax return of 8.53%:

The total of the two expenditures is 92,700:  $\$60,000 + \$30,000 = \$90,000$ .

On an after tax basis this amounts to a real return of  $\$90,000 / \$2,950,000 = 3.05\%$ .

To maintain the purchasing power of the portfolio, the portfolio must generate an additional amount equal to the rate of inflation (3%), so the total, after tax nominal required return is  $(1.0305)(1.03) - 1 = 6.14\%$  or alternatively  $3.05\% + 3\% = 6.05\%$ .

On a before-tax basis ( $t = 28\%$ ), this amounts to a return of  $6.14\% / 0.72 = 8.53\%$  or alternatively  $6.05\% / 0.72 = 8.40\%$ .

*Risk tolerance.* Given her moderate needs compared to her portfolio and assuming she wishes to protect the principal, DuBois' portfolio must generate sufficient current income but is not required to grow. She states that she is willing to assume some risk to obtain her objectives, and her situational profile also indicates willingness and ability to take risk. Her risk tolerance would be classified as moderate, indicating a portfolio mix of income-producing and capital-growth-oriented investments. To minimize the impacts of tax on current income, some future liquidity needs can be met by selling stock.

Constraints:

*Time horizon.* The portfolio has two time horizons. The first, which could be 20 years or more, is her remaining lifetime. The second time horizon occurs after DuBois' death—when the portfolio passes to the museum. At that point, the portfolio will have an indefinite life.

*Liquidity.* Other than the immediate funds for travel to Australia and ongoing funding for living expenses, there do not appear to be any liquidity requirements.

*Legal and regulatory.* No special legal or regulatory problems are apparent at this time. DuBois needs to make sure that at the time of her death, the necessary paperwork is in place to make her gift to the local museum and guarantee that the required income allocation is established for her son's family. Given her desire to pay her son's living expenses and leave a gift for the museum, DuBois should seek legal counsel (never a bad idea to mention this!).

*Taxes.* Taxes are not specifically mentioned as an area of concern for DuBois. The largest portion of her return is income, however, which is taxable at a higher rate than capital gains.

*Unique circumstances.* None.

## D. Selected Asset Allocation – B

*Justification.* Portfolio B is the optimal portfolio. It provides a return above the required 8.5% and has a respectable income component and acceptable cash allocation. In addition, it is broadly diversified and at an appropriate level of risk given her situational profile. Even though it provides the highest expected return, Portfolio A can be eliminated immediately due to its substantial risk component: 70% equity and 20% venture capital. Portfolio D is not acceptable because it fails to meet the total return requirement and is not diversified. Portfolio C is the sleeper in this set of portfolios due to its seemingly high degree of diversification. However, C has a 10% allocation to venture capital (\$300,000) which seems to drive its expected return. Given its 15% cash allocation, 10% venture capital allocation, and expected return short of the required return, C would more than likely not be the best portfolio.

8. C Loss aversion means investors prefer uncertain losses to smaller certain losses. Rather than give up and take a small loss, investors would rather take their chances with a larger loss, as long as there is still the possibility of a gain. These investors will tend to hold losing investments too long.
9. C Advisers benefit from an IPS because it serves as the document formally stating an understanding and agreement with clients. If questions arise regarding specific investment decisions, the IPS can be consulted for clarification as to the appropriateness of such decisions. Since most IPSs contain a stated review process, the document should indicate, or at least provide, direction for dispute resolution. The document should identify issues that could eventually become problems.