

3.

INVESTOR CHARACTERISTICS

In private wealth management, the investment decision-making process depends on a variety of personal concerns and preferences.

3.1 Situational Profiling (Section 3.1.1 – 3.1.3)

Situational profiling is a process of categorizing individual investors by their stage of life or by their economic circumstances in order to understand an investor's basic philosophy, attitudes and preferences.

Limitation of Situational Profiling: Situational profiling may oversimplify the complex human behavior and thus should be used with care.

Situational profiling employs following three approaches to categorize investors:

1) Source of wealth: An investor's attitude towards risk is affected by his/her source of wealth. For example,

- Individuals who have **actively** acquired wealth by assuming business or market risks (e.g. entrepreneurs) tend to have a higher level of risk tolerance. However, such individuals may exhibit high risk tolerance for taking business risks but lower risk tolerance for risks which they cannot control (e.g. investment risks).
- In contrast, individuals who have **passively** acquired wealth (e.g. through employment, inherited wealth, etc.) tend to have lower level of risk tolerance. Such individuals tend to make conservative investment decisions.

2) Measure of wealth: An investor's attitude towards risk also depends on the investor's perception towards amount of his/her net wealth.

- Individuals who perceive their amount of net wealth as large (small) tend to exhibit higher (lower) risk tolerance.
- Typically, portfolio is considered large when its returns can easily meet client's needs; otherwise, it is considered small.

3) Stage of life: Stage of life also influences attitudes towards investment risk and return. Typically, an investor is considered to pass through following *four stages* of life:

1. Foundation stage: It refers to the stage during which an individual builds up the base/foundation from which wealth will be created in future e.g. skill, education, business formation. This stage has the following features:

- An individual is young;

- Time horizon is long;
- *Tolerance for risk is "above-average"*, particularly if the individual has inherited wealth;
- In absence of any inherited wealth, investable assets are at their lowest level and financial uncertainty is at its highest level;
- Considerable expenses and thus, greater liquidity needs;

2. Accumulation stage: It is associated with two stages i.e.

- *Early accumulation stage:* During this stage, an individual experiences increase in income and investable assets along with increase in expenses associated with marriage, education of children, home, car etc.
- *Middle and later accumulation stage:* During this stage, both income and investable assets tend to increase but expenses decline as children grow up, mortgages are paid off etc. Rising income and declining expenses facilitate an individual to save. In addition, individual has **greater risk tolerance** due to increased wealth and long time horizon.
- In the accumulation stage:
 - Short-term needs include house and car purchases;
 - Long-term needs include retirement and children's education needs;
 - Preferred investments: Moderately high-risk investments to achieve above-average rates of return.

3. Maintenance stage (early retirement): In the maintenance stage, an individual's major goal is to maintain the desired lifestyle and financial security. During this stage,

- An individual has a short time horizon and moderate to lower risk tolerance; risk tolerance also decreases due to lack of non-investment income.
 - However, if during this stage, an individual has very low spending needs relative to wealth, he/she may have higher risk tolerance.
- An individual focuses on **preserving wealth** rather than accumulating wealth. Thus, investor prefers low volatility asset classes (e.g. intermediate-term bonds).

4. Distribution stage: This stage involves distribution of accumulated wealth to other persons or entities e.g. gifting to heirs or charities. During this stage, investor primarily focuses on dealing with tax constraints to maximize the after-tax value of assets distributed to others.

- Investors may start planning for such transfers and distributions during early stages.

- To make efficient wealth transfers, investors need to analyze market conditions, tax laws, and different transfer mechanisms.

It must be stressed that changes in stages of life may not necessarily occur in a linear manner e.g. an investor may move backward (due to new career, family etc.) or may move forward (due to illness, injury etc.) abruptly to a different stage.

3.2 Psychological Profiling (Section 3.2.1- 3.2.2)

Psychological profiling is also known as **personality typing**. It helps investment advisors to better understand an individual investor's personality, his willingness to take risk, and his behavioral tendencies as well as their impact on investment decision-making process (including individual's goal setting, asset allocation, and risk-taking decisions).

According to **traditional finance**,

- *Investors are risk-averse* i.e. prefer investments that provide a certain outcome to investments that have uncertain outcome with the same expected value.
- *Investors have rational expectations* and thus make coherent, accurate and unbiased forecasts by using all the relevant information.
- *Investors follow asset integration* i.e. investors tend to evaluate investments by analyzing their impact on the aggregate investment portfolio rather than analyzing investments on a stand-alone basis.

Under traditional finance assumptions:

Asset pricing depends on production costs and prices of substitutes.

Portfolios are constructed holistically based on covariances between assets and overall objectives and constraints.

According to **behavioral finance**,

- *Investors are loss averse* i.e. investors prefer investment with uncertain loss rather than investment with a certain loss but prefer a certain gain to an uncertain gain. In other words, in the domain of losses, investors exhibit risk seeking behavior whereas in the domain of gains, investors exhibit risk-averse behavior.
- *Investors have biased expectations* due to cognitive errors and emotional biases (discussed in reading 10).
- *Investors follow asset segregation* i.e. investors tend to evaluate investments individually rather than analyzing their impact on the overall portfolio.

Under behavioral finance assumptions:

Asset pricing depends on production costs and prices of substitutes, and subjective individual considerations, i.e. tastes and fears.

Portfolios are constructed as layered pyramids of assets where each layer is associated with specific goals and constraints.

3.2.3) Personality Typing

Personality typing involves categorizing investors into specific investor types based on their risk tolerance and investment decision-making style. There are two methods to classify investors into different personality types.

Ad hoc evaluation: In this method, an investment advisor classifies investor based on personal interviews and a review of past investment activity.

Client questionnaires: In this method, an investment advisor uses questionnaires to evaluate investor's risk tolerance and the decision-making style.

Types of investors:

1. **Cautious investors:** Cautious investors have the following characteristics:

- Make decisions based on feelings.
- Extremely sensitive to investment losses and thus, have lower risk tolerance.
- Prefer low volatility and safe investments due to the strong need for financial security.
- Are slow to make investment decisions due to fear of loss.
- Tend to over-analyze and as a result, often miss investment opportunities.
- Do not prefer to seek professional advice as they do not trust advice of others.
- Their portfolios tend to have low turnover and low volatility.
- Seek to minimize the probability of loss of principal.

2. **Methodical investors:** Methodical investors have the following characteristics:

- Make decisions based on "hard facts", market analysis, and investment research rather than emotions.
- Tend to follow a disciplined investing strategy.
- They are conservative investors and thus, have lower risk tolerance.
- Prefer to seek new and better information and tend to gather as much data as possible.
- Tend to focus on long-term fundamentals and prefer value-style of fund management.

3. **Spontaneous Investors:** Spontaneous investors have the following characteristics:

- Make decisions based on feelings and are quick to make investment decisions.
- Tend to over-manage their portfolios and make

frequent portfolio rebalancing in response to changing market conditions. As a result, their portfolios tend to have high turnover and high volatility.

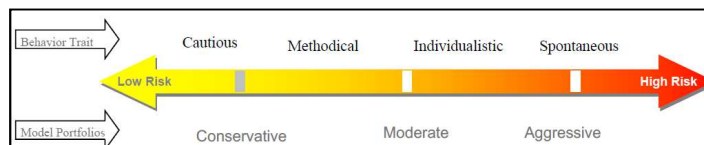
- Due to higher transaction costs associated with high portfolio turnover, they may have below-average returns.
- Do not trust investment advice of others.
- Prefer riskier investments because they have relatively higher risk tolerance.
- Relatively more concerned about missing an investment opportunity rather than portfolio's level of risk.

4. Individualist Investors: Individualist investors have the following characteristics:

- Make decisions based on "hard facts" and investment research rather than emotions.
- Prefer to make independent investment decisions and trust their own investment research.
- They are hard working and self-made individuals.
- They tend to have high risk tolerance and focus on

long-term investment objectives.

	Decision based on thinking	Decision based on feeling
More risk Averse	Methodical	Cautious
Less Risk Averse	Individualistic	Spontaneous



NOTE:

It is important to understand that individual investors are unique and cannot always be perfectly classified into a specific personality type or category.

4. INVESTMENT POLICY STATEMENT

A well-constructed investment policy statement (IPS) documents the investor's financial objectives, risk tolerance and investment constraints.

Advantages of an IPS:

- An IPS sets operational guidelines for constructing a portfolio.
- An IPS sets a mutually agreed-upon basis for portfolio monitoring and evaluation; and as a result, protects both the advisor and the individual investor.
- An IPS establishes and defines client's risk and return objectives and constraints and provides guidelines on how the assets are to be invested.
- An IPS establishes the communication procedures to facilitate investors and investment advisors to be aware of the process and objectives.
- An IPS assures coherence between the client's guidelines and the client's portfolio.
- An IPS facilitates investors to better evaluate appropriate investment strategies instead of blindly trusting investment advisor.
- An IPS enables investors to focus on investment process rather than investment products.
- An IPS facilitates investment advisors to better know their clients and provides guidance for investment decision making and resolution of disputes. IPS reduces the likelihood of disputes because the responsibilities of each party are clearly documented.

Attributes of a sound IPS:

- An IPS must be portable and easily understood by other advisors to ensure investment continuity in

case of need of second opinion or new investment advisor.

- An IPS construction must be a dynamic process that incorporates changes in objectives and/or constraints resulting from changes in client circumstances, capital market conditions, introduction of new investment products, tax laws etc.
 - Changes in client's personal circumstances include increase in expected income from non-investment sources, uninsured health problems, marriage, children etc.
 - Changes in capital market conditions include changes in expected inflation, global political changes etc.
 - Also, an IPS may need to be reviewed if portfolio experiences severe losses.

4.1 Setting Return and Risk Objectives

4.1.1) Return Objective

It is necessary for an investment advisor to identify an investor's desired and required return objectives in parallel to his level of risk tolerance.

Required return: The return that is necessary to achieve the investor's **primary or critical** long-term financial objectives is referred to as the required return.

- For example, if an investor is nearing retirement, then the primary objective is to provide the investor with sufficient retirement income.
- Investor's required return is calculated based on

annual spending requirements and long-term saving objectives.

Desired return: The return that is necessary to achieve the investor's **secondary or less** important objectives is referred to as the desired return.

Guideline for inconsistent investment goals: When an investor has investment goals that are inconsistent with current assets and risk tolerance level, then either he needs to modify his low and intermediate-priority goals or may have to accept somewhat higher level of risk, provided that he has the ability to assume additional risk. For example, an investor with inconsistent retirement goals may have to

- Postpone his date of retirement;
- Accept a lower standard of living after retirement;
- Increase current savings (i.e. reduced standard of living in present);

Guideline for portfolio expected return in excess of investor's required return: If the investment portfolio's expected return is greater than investor's required return,

- The investor can either protect that surplus by investing it in less risky investments; or
- The investor can invest that surplus in riskier investments with higher expected return.

Calculating After-tax return objective:

After-tax **Real** required return% =

$$\frac{\text{Client's required expenditures in Year } n}{\text{Net Investable Assets}} = \frac{\text{Projected needs in Year } n}{\text{Net Investable Assets}}$$

After-tax **Nominal** required return% = $\frac{\text{Projected needs in Year } n}{\text{Net Investable Assets}} +$

Current annual Inflation rate % = After-tax real required return % + Current annual inflation rate %

Or

After-tax **Nominal** required return% =

$$(1 + \text{After tax Real required return\%}) \times (1 + \text{Current annual Inflation rate \%}) - 1$$

Where,

Projected needs in Year n → **After-tax** net income needed in year n = Total cash inflows – Total cash outflows

- Cash inflows may include investor's salary, return on portfolio, retirement payout etc.
- Cash outflows may include tax on salaries, taxes on retirement payout, gifts to charity, daily living expenses, expenses for meeting parents' living costs etc.

Total Investable assets = Current Portfolio value (if any) - Current year cash outflows (if any) + Current year cash inflows (if any)

Pre-tax income needed = After-tax income needed / (1 - tax rate)

Pre-tax Nominal Required return = (Pre-tax income needed / Total investable assets) + Inflation rate%

If Portfolio returns are tax-deferred (e.g. only withdrawals from the portfolio are taxed): We would calculate pre-tax nominal return as follows:

Pre-tax projected expenditures \$ = After-tax projected expenditures \$ / (1 - tax rate%)

Pre-tax real required return % = Pre-tax projected expenditures \$ / Total investable assets

Pre-tax nominal required return = (1 + Pre-tax real required return %) × (1 + Inflation rate%) - 1

If Portfolio returns are NOT tax-deferred: We would calculate pre-tax nominal return as follows:

After-tax real required return% = After-tax projected expenditures \$ / Total Investable assets

After-tax nominal required return% = (1 + After-tax real required return%) × (1 + Inflation rate%) - 1

Pre-tax Nominal required return% = After-tax nominal required return / (1 - tax rate%)

IMPORTANT TO UNDERSTAND:

- When an investor has an expenditure that is already pre-planned, it must be considered as "required". In this case, the cash flows associated with the planned expenditure must be immediately **deducted** from the total value of the investable assets (portfolio).
- When we need to calculate the return that the portfolio must generate over the coming year or some other single year, the required return is calculated as follows:
Required return = $\frac{\text{Client's total required expenditures for the year}}{\text{Client's Investable Portfolio}}$
- When we need to calculate the return the portfolio must generate so that it grows to some minimum stated portfolio value required by the investor (known as **target portfolio value**), the required return is calculated as follows:
Using the financial calculator:
 - ▶N = number of years during which the current portfolio value is needed to grow to some target value.
 - ▶PV = Current Portfolio value
 - ▶Payments = Client's living expenses
 - ▶FV = Required minimum portfolio value (Target)

Portfolio value)

► Solve for $i \rightarrow$ CPT: $1/Y$

- **Always use pre-tax income needed** (i.e. pre-tax expenses) to calculate required rate of return.

NOTE:

The financial goals can be classified as income and growth requirements. Income needs can be met with income-producing securities with a lower risk (e.g. bonds) whereas growth objectives can be met with stocks and equity-oriented investments. However, it is recommended to follow a total return approach that identifies the annual after-tax portfolio return required to meet an investor's investment goals rather than focusing on income and growth needs separately.

4.1.2) Risk Objective

An individual's risk objective, or overall risk tolerance, is a function of both ability to take risk and willingness to take risk. An investor's ideal asset allocation and manager selection depend on his/her level of risk tolerance. The risk tolerance is not constant; rather, it changes with major life changes i.e. having children, caring for aging parents, inheriting any asset etc.

Ability to take risk: An investor's ability to take risk depends on the following factors:

A. Size of investor's financial needs and goals (both long-term and short-term) relative to the investment portfolio:

The size of investor's expenditures (spending needs) relative to investment portfolio and the ability to take risk are **inversely** related. If the investor's financial goals (or expenditures) are **modest**(significant) relative to the investment portfolio \rightarrow ability to take risk is **higher** (lower), all else equal.

B. Size of investment portfolio: The size of investment portfolio and the ability to take risk are **positively** related i.e. the higher (smaller) the portfolio size, the higher (lower) the ability to take risk.

C. Investor's time horizon: Investor's time horizon and ability to take risk are **positively** related i.e. longer (shorter) the time horizon, the higher (lower) the ability to take risk because longer-term objectives allow an investor to invest in more-volatile, high-risk investments, with correspondingly higher expected returns.

Example of Short to intermediate term investment goals:

- Support for maintaining current lifestyle;
- Construction of second home;
- Investment in near term;
- Funding children education;
- Funding expansion of a current business

D. The degree of importance of financial goals and return requirement: Both the importance of financial

goals and the return requirement are **inversely** related to the ability to take risk.

- When the investor has more critical investment goals, he has a lower ability to tolerate risk and thus prefers less volatile, low-risk investments. Critical goals include financial security, maintaining current lifestyle, achieving desired future lifestyle, providing for loved ones etc. Less critical goals include luxury spending etc.
- Similarly, when an investor has high (low) return requirement, he has lower (higher) ability to take risk.

- E. Flexibility with regard to changing spending goals or spending amount:** The greater (smaller) the flexibility an investor has with regard to changing spending goals or spending amount, the higher (lower) the ability to take risk. E.g. an investor desires to make gifts to charities; such goal is not critical and if necessary, he can decrease or eliminate gift and reduce expenses to satisfy his other critical goals and thus, will have higher ability to take risk.
- F. Debt level:** When the investor has no or low debt level (high debt level), he has higher (lower) ability to take risk.
- G. Income and savings:** An investor has higher (lower) ability to take risk when he/she has:

- Moderate to high (low to moderate) income; and is currently (NOT) employed.
- High (low) income stability;
- High (low) job security;
- High (low) savings rate;

H. Liquidity needs and magnitude of emergency

reserves: When an investor has low liquidity needs with sufficient emergency fund, he/she would not need to take money from the portfolio and hence, will have higher ability to take risk. Opposite occurs when liquidity needs are high and emergency fund is insufficient. For example, clients with a current income objective (e.g. retirees) tend to have lower ability to take risk.

- I. Opportunities for additional income:** When the investor has opportunities to earn additional income, he has greater ability to take risk; because additional income sources allow the investor to withstand short-term market volatility.
- J. Degree of dependence on investment portfolio return to meet financial goals:** When an investor entirely depends on investment portfolio return to meet his financial goals, he has lower ability to take risk. In contrast, when an investor has other sources available to fund financial goals, his ability to take risk is higher.

K. Age and state of health of investor: A relatively young investor with good current health tends to have greater ability to take risk because as an investor

becomes older, there is less time to recover from poor investment results. E.g. an investor who is retired and is in the maintenance stage of life tends to have below average ability to take risk.

- L. Goal to leave some assets or estate to children/charities:** When an investor does not have any plan to leave an estate, he/she would have higher ability to take risk, all else equal.

Willingness to take risk: Unlike ability to take risk, an investor’s willingness to take risk depends on subjective measures. Also, an investor’s willingness to take risk may vary over time.

An investor’s willingness to take risk can be determined by analyzing the following factors:

- A. Debt policy:** An investor with conservative debt policy tends to have below average willingness to take risk.

- B. Choice of investments:** An investor who prefers conservative investments (e.g. less volatile, low risk investments and highly liquid assets) tends to have below average willingness to take risk.

- C. Sensitivity to investment losses:** An investor who does not want his portfolio value to decline by certain % (e.g. more than 10% or 5%) in nominal terms in any given 12-month period due to experiencing loss in the past tends to exhibit below-average willingness to take risk.

- D. Focus on preserving real value of portfolio rather than growing real value of portfolio:** An investor whose objective is to preserve his real value of portfolio rather than growing it tends to exhibit below-average willingness to take risk.

- E. Source of wealth:** An investor who has passively acquired wealth (e.g. through inheritance or employment) tends to have below-average willingness to take risk.

- F. Desire to work again:** If an investor does not plan to work again, he exhibits below average willingness to take risk.

Decision rule regarding determining investor’s overall risk tolerance: When there is a conflict between client’s ability and willingness to take risk, an investment advisor must select the **lesser of the two** and should counsel investor to reconcile the difference.

Overall Risk Tolerance = Minimum (Ability to take risk, Willingness to take risk)

	WILLINGNESS TO TAKE RISK		
ABILITY TO TAKE RISK	<i>Below-Average</i>	<i>Average</i>	<i>Above-Average</i>
<i>Below-Average</i>	Below-Average	Below-Average (counseling required)	Below-Average (counseling required)
<i>Average</i>	Below-Average (counseling required)	Average	Average (counseling required)
<i>Above-Average</i>	Below-Average (counseling required)	Average (counseling required)	Above-Average

In addition, when return objectives > risk tolerance level → an investor either needs to accept a higher risk to achieve return objectives or decrease required return with a given risk tolerance level.

4.2 Constraints (Section 4.2.1-4.2.5)

Constraints are limitations or restrictions that are specific to each investor. The IPS should identify and document all economic and operational constraints on the investment portfolio. Portfolio constraints can be classified into following five categories:

- 1. Liquidity:** Liquidity refers to the investment portfolio’s ability to efficiently meet an investor’s anticipated and unanticipated needs for cash distributions. A portfolio’s liquidity can be determined using following two factors:
 - i. Transaction costs:* Transaction costs include brokerage fees, bid-ask spread, price impact (significant change in price of a thinly traded asset), or costs associated with time and opportunity of searching for a buyer. The greater the transaction costs, the less liquid the asset.
 - ii. Price volatility:* When an asset trades in a highly volatile market, it is difficult to buy and sell it at fair value with minimal transaction costs. As a result, portfolio has low liquidity.

Liquidity requirements can arise for the following reasons:

On-going expenses: These include daily living expenses. They represent one of the critical liquidity requirements of an investor. They are highly predictable and short-term in nature; hence, their funding requires investment in highly liquid assets. Ongoing expenses may include mortgage and loan payments, rent, food, transportation and other necessary living costs.

Emergency reserves: Emergency reserves refer to funds kept aside for meeting emergency needs associated

with unanticipated events i.e. sudden unemployment or uninsured losses etc.

- The appropriate size of emergency fund varies with clients i.e. investors with stable income and high job security need to keep smaller emergency reserves compared to investors who work in cyclical environment and have unstable income.
- Commonly, it is recommended to maintain 2-3 months spending in emergency funds (i.e. equal to 2-3 month's salary of the client). However, in case of highly uncertain economic times, investors may maintain 3-6 months costs in their emergency fund.

Negative liquidity events: Negative liquidity events refer to major personal expenditures in the **near future**. These include a significant charitable gift, anticipated home repairs or changes in cash needs associated with retirement.

NOTE:

Positive liquidity events include anticipated gifts and inheritance etc. Such events and other external sources of income must be incorporated into the IPS.

Liquidity requirements and risk tolerance:

- When an investor has high liquidity needs, his portfolio should comprise of high liquid assets with low risk (volatility).
- In contrast, when an investor has low liquidity needs, he can invest in relatively non-liquid and volatile assets in order to achieve long-term capital growth.
 - *In other words, high (low) liquidity needs imply lower (higher) ability to take risk.*
- When an investor has a major liquidity need in the near future, the need for portfolio liquidity increases and consequently, the ability to take risk is reduced.

Guideline for liquidity constraints: Liquidity constraints limit the investor's investment choices to highly liquid and secure investments.

- It is important to understand that in determining investor's spending needs only those spending needs that will be met by the investment portfolio are considered whereas the spending needs that will be met by salary or other income sources are ignored.
- When cash **outflows** are expected within a short-time period (e.g. the next 6 months or so), the amount of those cash flows must be *immediately subtracted* from the total value of investment portfolio.
- The IPS should specifically identify and document significant holdings of **illiquid assets** and their role in the investment portfolio. Illiquid assets include real estate (i.e. home), limited partnerships, common stock with trading restrictions, and assets burdened by pending litigation etc.
 - Investor's home or primary residences and second homes may provide investment returns in the form

of psychological and lifestyle benefits as well as economic benefits of shelter and potential price appreciation. However, it is recommended that they should not be considered as part of the investable portfolio.

- When the home is considered as a long-term investment that will be used to fund long-term housing needs or estate planning goals, the home and the corresponding investment goals offset each other and thus, are removed i.e. are not considered in developing an investment portfolio.
- In the IPS, the liquidity requirements must always be stated in money (dollar) terms rather than in percentages.

2. Time Horizon: An investor's time horizon can be defined in terms of two aspects i.e.

1) Long-term versus short-term:

- Long-term refers to time period greater than 15-20 years.
- Short-term refers to time period less than 3 years.
- Intermediate term refers to time period between 3 and 15 years.

2) Single-stage versus multi-stage: Any significant & material change in investor's circumstances (i.e. any significant event) that requires investment advisor to evaluate IPS and to re-adjust investor's portfolio (i.e. change/recalculate portfolio return) can be identified as a separate stage in the time horizon.

- *Single-stage time horizon* e.g. a person during his retirement years → the single-stage would be time period during retirement till death.
- *Multi-stage time horizon* e.g.
 - 1st-stage "short-term period" → now until the time that investor's child enrolls in college;
 - 2nd-stage "short-to-intermediate term period" → time period of supporting child's college education;
 - 3rd-stage "intermediate term period" → remaining years until retirement and after funding child's college education;
 - 4th-stage "long-term period" → retirement years i.e. from retirement till demise.

It is important to note that when an investor has a desire to leave some assets to his/her grandchildren (future generation), then an investor risk and return objectives and time horizon must be determined employing **multigenerational** estate planning. In such cases, the investment has long-term and multi-stage time horizon as well as the investment portfolio's goals and time horizon are determined by the grandchildren's personal circumstances rather than the investor's own circumstances.

Guideline for Time horizon constraint: Typically, as an investor passes through various stages of life (as discussed above), his/her investment time horizon gradually shortens.

- As the time horizon shortens, the variety of assets in which to invest also diminishes.
- In addition, the shorter the time horizon, the lower the ability to take risk.

3) Taxes: An investment advisor must always identify his client's tax situation and any special tax circumstances that may apply to him/her in order to determine the appropriate asset allocation and to best utilize tax-advantaged investment accounts.

The tax laws also play a critical role in one's investment decisions because tax rates for different types of investment income vary among countries.

TYPES OF TAXES:

- a) Income tax:** Tax charged on income, including wages, rent, dividends, and interest is referred to as income tax. It is calculated as a percentage of total income. Generally, different tax rates apply to different levels of income.
- b) Gains tax:** Tax charged on the capital gains (i.e. profits based on increase in price of an asset) associated with sale of an asset is referred to as gains tax. In most countries, the tax rate for capital gains is lower than the corresponding income tax.
- c) Wealth transfer tax:** Tax charged on transferring assets (without sale) to other party is referred to as wealth transfer tax. The timing of personal wealth transfer depends on various factors including investor's net worth, time horizon, and charitable intentions, as well as the age, maturity and tax status of the beneficiaries.

- **Estate tax or death tax:** It is a tax that is charged on the transfer at death. Estate taxes can be used to maximize the final value of the investment portfolio as such taxes can be deferred as long as possible. However, in a multi-generational estate plan, estate taxes may not minimize transfer taxes.
- **Gift taxes:** Gift taxes are charged at early transfers (i.e. during the lifetime of investor). They facilitate investors to maximize the after-tax value of their estate. Gift taxes provide the greatest tax deferral and it is often useful to make gifts directly to grandchildren (known as *generation skipping*). However, early transfer assumes that the current tax structure will not change over time.

d) Property tax: Tax charged on real property (real estate) and some financial assets is called property tax. Property tax is calculated annually as a percentage of reported value of real property.

Tax strategies: Appropriate tax strategies are client specific and depend on the prevailing tax code. These include:

A. Tax Deferral: Tax deferral strategies are those that seek to defer (postpone) taxes by maximizing the time period of reinvestment of returns. E.g.

- **Low turnover:** A portfolio strategy that focuses on low turnover.
- **Loss harvesting:** It is a type of tax reduction strategy. In loss harvesting, an investor seeks to realize capital losses to offset otherwise taxable gains, resulting in deferred tax payments.

B. Tax avoidance: Tax avoidance refers to avoiding taxes when it is legally possible to do so. E.g. some special purpose saving accounts (i.e. RSA account) and some bonds (e.g. municipal bonds) are exempt from taxation. Besides, investors can use estate planning and gifting strategies to reduce future estate taxes.

Limitations of Tax-advantaged Investment Alternatives:

- 1) Lower returns:** Tax-exempt securities typically offer lower returns or have higher expenses (including higher transaction costs) compared to taxable alternatives. Tax-exempt securities are attractive to invest only when following relationship holds (ignoring differential transaction costs):
- $$R_{\text{tax-free}} > (R_{\text{taxable}} \times (1 - \text{Tax rate}))$$
- 2) Less liquidity:** Tax-sheltered savings accounts tend to have low liquidity as they either involve minimum holding period requirement or have limitations with regard to withdrawals.
- 3) Diminished control:** In tax-advantaged partnerships or trusts, investors have to give-up or share the direct ownership of assets.

C. Tax Reduction: When capital gains tax rate is lower than that of income, an investor may prefer to invest in securities and investment strategies with capital gains returns instead of income returns i.e. low-dividend-paying stocks. Investing in capital gains returns securities provide two-fold advantages i.e. tax deferral (as capital gains are realized only at the time of sale) and lower tax rate.

Guideline for Tax constraints: Taxes decrease the growth of portfolio; therefore, investment and financial planning should be done on an after-tax basis.

- For clients who are in the highest tax brackets, the primary investment goal should be tax minimization or maximization of after-tax return, all else equal. For such clients, investment advisor should prefer to invest in assets that experience future capital gains rather than current taxable income.
- For clients who have considerable investment in the stock with zero cost basis (and higher taxes as a result), an investment advisor must pay attention to special tax planning.
- For a client who is tax-exempt, it will NOT be appropriate to invest in tax-exempt investments (e.g. Municipal bonds).
- With regard to early wealth transfer, the investor must ensure that sufficient amount of wealth is retained, must consider the possible unintended consequences of transferring large amounts of wealth to younger (less mature) beneficiaries and

must evaluate the stability or volatility of the tax code.

4. Legal and Regulatory Environment: The legal and regulatory environment may also constrain an investor's investment decisions. Legal and regulatory constraints vary among countries and are not static. Typically, legal and regulatory constraints are more important considerations for institutional investors than for individuals.

The legal and regulatory constraints for individuals may incorporate the following things:

- When a manager acts in a fiduciary capacity (i.e. employed as trustee of a trust), the investor's investments will be governed by state law and the Prudent Person rule.
- Laws and regulations relating to investor's insider status at some company must be documented in the legal and regulatory constraints.

The Personal Trust: Typically, a trust is a real or personal property held by one party (trustee) for the benefit of another (beneficiaries) or oneself (grantor). In a personal trust, the beneficiary is an individual or individuals.

- **Grantor:** The person who makes the trust is called "Grantor" or "Settler".
- **Trustee:** The person who manages the trust assets and performs the functions of the trust according to the terms of the trust is called "Trustee". The trustee may be the grantor or may be a professional or institutional trustee. There may be one or several trustees.
- **Beneficiary:** The person or persons who will benefit from the creation of trust is called "beneficiary". The beneficiary is entitled to receive income from the trust.
- When the grantor transfers legal ownership of designated assets to the trust, the trust is said to be "**funded**".

Types of Trusts:

1) Revocable trust: A revocable trust is a trust in which the grantor retains control over the trust's terms and assets i.e. any terms of the trust can be amended, added to or revoked by the grantor during his/her lifetime.

- Upon demise of the grantor, the trust can no longer be amended and the trust assets either continue to be managed by a trustee or are distributed to the trust's beneficiaries according to the terms of the trust.

Limitation: In a revocable trust, the assets funded into the trust are considered as grantor's personal assets for creditor and estate tax purposes; hence, the grantor (not trust) is responsible for any tax related or other liabilities associated with trust's assets. In addition, all

assets funded into the trust at the time of grantor's death will be subject to both state and federal estate taxes and state inheritance taxes.

2) Irrevocable trust: An irrevocable trust is a trust that can't be amended or revoked once the trust agreement has been signed. An irrevocable trust can be viewed as an immediate and irreversible transfer or property ownership; hence, when the trust is funded, it requires payment of wealth transfer tax (also called gift tax).

- Unlike revocable trust, the trust (not the grantor) is responsible for tax liabilities because the trust's assets are not considered to be the part of the grantor's estate.

The Family Foundation: Like an irrevocable trust, a family foundation is an independent entity that is governed and managed by family members.

Competing interests of income beneficiaries and remaindermen:

- **Beneficiaries:** The persons entitled to the income generated by the trust assets during their lifetime are called beneficiaries. Beneficiaries seek to maximize current income of the trust and thus favor that the trustee invest in higher income-producing assets.
- **Remainder man:** A person entitled to the assets of a trust (i.e. principal amount of the assets) at the end of some specified period or after some event is called remainder man. Remainder men may be charities, foundations, or other individuals. When the trust's remaindermen are charities or foundations, the trust is referred to as "charitable remainder trust". Remaindermen seek to maximize final value of assets and thus favor that the trustee invest in assets with long-term growth potential.

Under the general duty of loyalty, the trustee of an irrevocable trust is required to balance the conflicting interests of income beneficiaries and remaindermen. It is recommended that the trustee should follow a total return approach.

5. Unique Circumstances: Unique circumstances constraints include:

- Guidelines for social or special purpose investing e.g. clients may not want to invest in tobacco or alcohol companies stocks.
- A client has a job in a highly cyclical environment e.g. if a client is a stock broker then it should be discussed in unique circumstances and his investment portfolio should be comprised of fixed-income securities and other low risk investments instead of equities.
- Assets legally restricted from sale;
- Directed brokerage arrangements;
- Privacy concerns;
- Any assets not included as part of the investment

portfolio and not otherwise discussed in the IPS.

- Desired bequests and gifts e.g. want to leave home or a given amount of wealth to children, charity etc.
- Any desired objectives that are unattainable due to certain constraints (e.g. time horizon or current wealth) must also be discussed in unique circumstances constraint.

5. AN INTRODUCTION TO ASSET ALLOCATION

Asset allocation: Strategic asset allocation involves determining **weights** of a set of asset classes that make a portfolio consistent with the individual investor's return objective, risk tolerance, and constraints while taking into account the effects of changes in tax consequences, future rebalancing and asset "location".

Asset location: It refers to **locating/placing** investments in appropriate accounts e.g. non-taxable investments should be located in "taxable" accounts whereas taxable investments should be located in "tax-exempt" accounts.

Real, after-tax return = ((Taxable return of asset class 1 × weight of asset class 1 in the portfolio) + (Taxable return of asset class 2 × weight of asset class 2 in the portfolio) + ... + (Taxable return of asset class n × weight of asset class n in the portfolio)) × (1 – tax rate) + (Expected total return of Tax-exempt investments × weight of Tax-exempt investments in the portfolio) – inflation rate

5.1 Asset Allocation Concepts

It is important to understand that appropriate asset allocation is determined after identifying investor's risk & return objectives and constraints.

Steps of selecting the most satisfactory strategic asset allocation:

- 1) First of all, investment advisor should determine the asset allocations that satisfy investor's return requirements i.e. select those asset allocations that have expected returns ≥ investor's required return.

- For comparison purposes, the expected returns for different asset allocations and required return must be consistent i.e. if after-tax nominal return is given in the IPS, then expected returns for asset allocations must also be stated in nominal and after-tax basis.

Procedure of converting nominal, pre-tax figures into real, after-tax return:

Real, after-tax return = (Expected total return – (Expected total return of Tax-exempt investments (e.g. municipal bonds) × weight of Tax-exempt investments in the portfolio)) × (1 – tax rate) + (Expected total return of Tax-exempt investments × weight of Tax-exempt investments in the portfolio) – inflation rate

Or

- 2) **Eliminate asset allocations that do not meet quantitative risk objectives or are inconsistent with the investor's risk tolerance:** This step involves evaluating the downside risk of each asset allocation using different measures i.e.

- **Standard deviation:** Choosing the asset allocation with standard deviation consistent with client's risk tolerance level.
- **Safety-first rule:** When after subtracting two S.Ds from a portfolio's expected return we obtain the number > (<) client's return threshold → the resulting portfolio should be (should not be) accepted.
 - The number of S.D. that will be subtracted to determine downside risk depends on client's risk aversion i.e. the higher (lower) the risk aversion, the larger (smaller) the number for S.D.

- 3) **Eliminate asset allocations that do not meet the investor's stated constraints:**

- If an asset allocation violates asset class allocation limits stated by the client (e.g. specific asset class > maximum % limit, specific asset class < minimum % limit, or contains totally disallowed asset classes), it should be eliminated.
- If the client lies in the highest tax bracket, investment advisor should favor asset allocation that minimizes taxes.
- If the client has higher wage income, asset allocations with too much cash should be avoided and portfolio may contain relatively less liquid investments with higher growth potential.
- If the client is a retired individual, the liquidity needs would be higher and therefore, asset allocations with significant % of illiquid assets (e.g. real estate, private equity funds etc) must be avoided.

- It must be stressed that cash reserves should be kept subject to some amount that is necessary to meet immediate and emergency needs instead of holding too much cash reserves.

4) Evaluate the expected risk-adjusted performance and diversification attributes of the asset allocations that remain after steps 1 through 3: In this step, the advisor should select the most appropriate allocation for a client based on two factors:

- Evaluating the risk-adjusted performance of each asset allocation i.e. select the asset allocation with highest Sharpe ratio.
- Evaluate the diversification attributes of each asset allocation i.e. if an asset allocation contains too much (or too little) of an asset class, it should be avoided; rather, a broadly diversified asset allocation should be selected.

IMPORTANT TO NOTE:

The best asset allocation would be the one that generates **positive terminal value** of portfolio under all scenarios or the one that would have **higher probability of achieving a positive terminal value** of portfolio.

- For example, suppose Monte Carlo Simulations produce two Portfolios A and B with different asset allocations. Portfolio A is expected to have \$0 terminal value at the end of time horizon (say 20 years) whereas Portfolio B is expected to have \$35,000 at the end of time horizon (say 20 years). We would select Portfolio B because it is expected to generate positive terminal value.

NOTE:

In determining the appropriate asset allocation, the advisor must determine whether to use after-tax return assumptions for individual asset classes or to use pre-tax assumptions; and each investment outcome should be evaluated on an after-tax basis.

Limitations associated with constructing asset allocation scenarios based on after-tax estimates:

- Location:** An investment's location has a considerable impact on the after-tax risk and return assumptions i.e. after-tax returns on equities located in taxable accounts may not be the same as after-tax returns on equities located in tax-exempt accounts. As a result, an advisor needs to divide asset classes into multiple, location-specific sub-classes with their corresponding risk and return attributes.
- Tax conventions:** The after-tax risk and return assumptions may also depend on the tax treatment of investment returns i.e. securities with minimum holding period requirement tend to have favorable tax rates.
- Investment Instruments:** Tax characteristics of various investment securities may not be static; they may change over time. Hence, it becomes difficult to have reliable after-tax risk and return assumptions.

Practice: Example 1, 2 & 3, Volume 2, Reading 10.



5.2 Monte Carlo Simulation in Personal Retirement Planning

Monte Carlo simulation is a method, which involves simulating the impact of various sources of uncertainty on the value of the investment or portfolio over time. Using those simulations, the possible final values of the investment or portfolio are calculated. Given these possible values, the representative values of the underlying inputs are estimated.

Distinction between traditional deterministic analysis and probabilistic (Monte Carlo Simulation) analysis:

- Both approaches employ a set of personal information i.e. investor's age, desired retirement age, current income, savings, assets in taxable, tax-exempt accounts etc.
- Deterministic forecasting approach implicitly assumes that future performance will be the same as past performance.
- Deterministic forecasting approach uses single point estimates of inputs i.e. interest rates, asset returns, inflation and similar economic variables. In contrast, Monte Carlo simulation method considers the impact of changes in long-term assumptions and path dependency effect on final value of investment portfolio (e.g. likely changes in the values of the inputs over time) and uses a probability distribution of possible input values instead of single point estimates. This facilitates investors to make better financial planning over long time periods.
- Deterministic forecasting approach generates a single number of possible investment outcomes for given objectives using single set of economic assumptions i.e. it will project that retirement assets and income at the end of 'n' years will be some '\$x' amount.
- In contrast, Monte Carlo simulation approach generates probability distributions of investment outcomes through a large number of simulation trials (e.g. 10,000), considering worst and best case scenarios. Hence, Monte Carlo simulation method provides more information about the risk associated with meeting investment objectives.

Advantages of Monte Carlo Simulation or Probabilistic Approach:

- 1) Monte Carlo simulation method is highly useful to predict future outcomes that depend on multiple and volatile variables with unique probability distribution e.g. Monte Carlo simulation method can be used in projecting retirement wealth as the value of retirement portfolio depends on investment returns, inflation, tax rates etc.
- 2) A probabilistic approach of analysis better reflects the risk-return trade-off and the impact of investment risk

on portfolio value. In contrast, deterministic forecasting approach wrongly assumes that higher risk investments will always provide higher expected returns.

- 3) A probabilistic approach of analysis more accurately reflects the trade-off between short-term investment risk and the risk of not meeting a long-term goal i.e., to avoid short-term investment risk investor prefers to invest in less volatile (lower expected return) assets; however, such assets tend to reduce the long-term growth of portfolio.
- 4) Monte Carlo simulation analysis takes into account the impact of changes in taxes on the investment outcome.
- 5) Monte Carlo simulation analysis more accurately models the stochastic process of calculating future returns (i.e. compounding effects) and the alternative outcomes resulting from the process.
- 6) Unlike deterministic models, Monte Carlo simulations model indicates both the shortfall and the probability of experiencing the shortfall.

Limitations of Monte Carlo Simulations Approach:

- Different Monte Carlo simulation approaches do not always generate equally reliable results.
- Reliability of outcomes of Monte Carlo simulation depends on the assumptions of inputs used in the model.
- Monte Carlo simulation based on historical data is not reliable to use because it fails to consider the range of possible future investment outcomes and may include unlikely outliers.
- Generally, Monte Carlo simulations do not simulate unlikely events.
- Monte Carlo simulation models assume normally distributed returns.
- Monte Carlo simulation models are hard to understand.

Recommendation to improve Monte Carlo simulation outcomes:

- To better evaluate the expected performance of the portfolio, Monte Carlo simulation must simulate the performance of **specific investments** rather than only asset classes because portfolio's risk and return vary among different asset classes with different risk and return profiles. Also, Monte Carlo simulations should consider the net-of-fees performance of each investment, their fund-specific risk, and their tax efficiency.
- Instead of simply using historical data, Monte Carlo simulations should be modeled using expected capital market assumptions.

Practice: End of Chapter Practice Problems for Reading 10 & FinQuiz Item-set ID# 16837.

