Private Wealth Management

CFA三级培训项目

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101% Contribution Breeds Professionalism

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Topic in CFA Level III

Session	Content
Study Session 1-2	ETHICS & PROFESSIONAL STANDARDS (1)&(2)
Study Session 3	BEHAVIORAL FINANCE
Study Session 4	CAPITAL MARKET EXPECTATIONS
Study Session 5	ASSET ALLOCATION AND RELATED DECISIONS IN PORTFOLIO MANAGEMENT
Study Session 6	DERIVATIVES AND CURRENCY MANAGEMENT
Study Session 7-8	FIXED-INCOME PORTFOLIO MANAGEMENT (1)&(2)
Study Session 9-10	EQUITY PORTFOLIO MANAGEMENT (1)&(2)
Study Session 11	ALTERNATIVE INVESTMENTS FOR PORTFOLIO MANAGEMENT
Study Session 12-13	**PRIVATE WEALTH MANAGEMENT (1)&(2)**
Study Session 14	PORTFOLIO MANAGEMENT FOR INSTITUTIONAL INVESTORS
Study Session 15	TRADING, PERFORMANCE EVALUATION, AND MANAGER SELECTION
Study Session 16	CASES IN PORTFOLIO MANAGEMENT AND RISK MANAGEMENT

Framework

Private Wealth Management

- **SS12: Private Wealth Management (1)**
  - R28 Overview of Private Wealth Management
  - R29 Taxes and Private Wealth Management in a Global Context
  - R30 Estate Planning in a Global Context
- **SS13: Private Wealth management (2)**
  - R31 Concentrated Single-Asset Positions
  - R32 Risk Management for Individuals

Overview of Private Wealth Management

Framework

1. Private Clients versus Institutional Clients
2. Understanding Private Clients
3. Investment Planning
4. Investment Policy Statement
5. Portfolio Construction and Monitoring
6. Ethical and Compliance Considerations in Private Wealth Management
7. Private Client Segments

1. Private Clients versus Institutional Clients

- **Private clients and institutional clients have different concerns, including the following:**
  1. **Investment Objectives**
  2. **Constraints**
  3. **Other Distinctions**

1. Private Clients versus Institutional Clients

1. **Investment Objectives**
   - **Private Clients**
     - ✓ financial security during the client's retirement years;
     - ✓ the ability to provide financial support to family members;
     - ✓ the funding of philanthropic goals;
     - ✓ Private client investment objectives often compete with one another and may change over time;
   - **Institutional Clients**
     - ✓ In contrast to private clients, institutional clients tend to have more clearly defined objectives, which are typically related to a specific liability stream.

1. Private Clients versus Institutional Clients

2. **Constraints**
   - **Time horizon**: In general, individual investors have a shorter time horizon than institutional investors, whose horizon is often theoretically infinite.
   - **Scale**: In general, individual investor portfolios tend to be smaller in size (or scale) than those of institutional investors.
   - **Taxes**: Taxes are a significant and complex consideration for many individual investors, and they vary by jurisdiction.

1. Private Clients versus Institutional Clients

3. **Other Distinctions**

- **Investment Governance**
  - ✓ **Institutional investors** typically operate under a formal governance structure.
  - ✓ By contrast, investment governance for **individual investors** tends to be less formal.
- **Investment Sophistication**
  - ✓ **Institutional investors** tend to have a higher degree of investment sophistication than the typical private investor as well as access to more investment resources.
  - ✓ Unlike institutional clients, **private clients** do not normally benefit from the "checks and balances" of a formal investment governance framework. As a result, private clients can be more vulnerable to making "emotional" investment decisions.

1. Private Clients versus Institutional Clients

3. Other Distinctions

- **Regulation**
  - ✓ In most countries, the regulatory environment is different for individual and institutional investors.
  - ✓ In some cases, separate regulators focus on these two investor segments. In other cases, the individual and institutional investor groups share a common regulator but are subject to different regulations.
- **Uniqueness and Complexity**
  - ✓ **Private clients** with similar sets of financial considerations and objectives may nevertheless pursue different investment strategies.
    - ◆ Multiple factors may influence each individual's preferences, needs, and concerns—notably, family background and upbringing, work history, sources of wealth, investment experience, groups of friends, and geographic location.

1. Private Clients versus Institutional Clients

Summary		Private clients	Institutional clients
Investment objectives		diverse investment objectives (may not be clearly defined or quantified)	specific, clearly defined investment objectives
Constraints	**Time horizon**	a shorter time horizon	theoretically infinite
	Scale	smaller (more limitations)	larger
	Taxes	significant and complex	taxable income may be more favored by a tax-exempt institution
Other Distinctions	**Investment Governance**	less formal governance structure	formal governance structure
	Investment Sophistication	emotional	a higher degree (more investment resources)
	Regulation	separate regulators or shared regulatory structure	
	Uniqueness and Complexity	Similar financial and objective, different investment strategies	Similar objective , similar strategies

2. Understanding Private Clients

- **Information Needed in Advising Private Clients**
  - Personal Information
  - Financial Information
  - Private Client Tax Considerations
- **Client Goals**
- **Private Client Risk Tolerance**
- **Technical and Soft Skills for Wealth Managers**

2.1 Information Needed in Advising Private Clients

- **1. Personal Information**
  - the client's family situation, including marital status, the number of children and grandchildren, and the ages of family members;
  - proof of client identification;
  - employment and career information;
  - the sources of a client's wealth;
  - investment background;
    - ✓ return objective; liquidity preferences or a desire to consider environmental, social, and governance (ESG) issues;
  - financial objectives and risk tolerance.

2.1 Information Needed in Advising Private Clients

➢ **2. Financial Information**

Assets	Liabilities
• Cash and deposit accounts • Brokerage accounts • Retirement accounts • Other employee benefits, such as restricted stock or stock options • Ownership interests (stock) in private businesses • Cash-value life insurance • Real property, including residences, rental property, and land • Other personal assets (e.g., automobiles, art, or jewelry)	• Consumer debt, such as credit card balances and loans outstanding • Automobile loans • Student loans • Property-related loans, such as mortgages and home equity loans (or lines of credit) • Margin debt in brokerage accounts

2.1 Information Needed in Advising Private Clients

- **3. Private Client Tax Considerations**
  - **Common Tax Categories**
    - ✓ **Taxes on income**. These include taxes on salaries, interest, dividends, capital gains, and rental income.
    - ✓ **Wealth-based taxes**. These include taxes on the holding of certain types of property (e.g., real estate) and taxes on the transfer of wealth (e.g., taxes on inheritance).
    - ✓ **Taxes on consumption/spending**. These include sales taxes and value-added taxes.

2.1 Information Needed in Advising Private Clients

- **3. Private Client Tax Considerations--Basic Tax Strategies**
  - **Tax avoidance**. (**conform** to both the spirit and the letter of the tax codes of jurisdictions with taxing authority.) vs. **Tax evasion** (circumventing tax obligations by illegal means) .
    - ✓ **Tax-exempt accounts:** permit tax-free earnings and future withdrawals; **wealth transfer techniques.**
  - **Tax reduction**.
    - ✓ tax-exempt bonds; tax-efficient asset classes
  - **Tax deferral**.
    - ✓ By deferring the recognition of certain taxes until a later date, clients can benefit from compounding portfolio returns that are not diminished by periodic tax payments.
    - ✓ Some investors in a progressive tax system may also seek to defer taxes because they anticipate lower future tax rates.
    - ✓ limit portfolio turnover.

Example

- Roseanna Rodriguez meets with her wealth manager, Raj Gupta, CFA, to discuss her investment strategy and financial plan. Gupta mentions the importance of tax strategies in Rodriguez's financial plan and makes three recommendations:
  - Invest in two different account types:
    - An account that permits both earnings and future withdrawals to be tax-free and
    - An account that permits earnings to accumulate tax-free but requires that taxes be paid when assets are withdrawn from the account.
  - Reduce exposure to an asset class with undesirable tax characteristics in favor of an asset class that is more tax-efficient.
  - Delay the sale of shares of a stock position until the year following retirement.
- Identify the basic tax strategy (or strategies)—tax avoidance, tax reduction, or tax deferral—represented in each of the three recommendations.

Example

- **Solution:**
  - The first recommendation represents both tax avoidance and tax deferral. With the account that permits tax-free accumulation and distributions, Rodriguez would be avoiding taxes. With the account that permits tax-free accumulation but results in income taxes upon distribution, Rodriguez would be deferring taxes.
  - The second recommendation is an example of tax reduction because the recommended asset class would incur lower taxes.
  - The third recommendation is an example of tax deferral and may also be an example of tax reduction if Rodriguez's tax rate declines after retirement.

2.1 Information Needed in Advising Private Clients

- **4. Other Relevant Information**
  - Estate plan (in applicable jurisdictions), copies of relevant legal and governing documents, such as wills and trust documents;
  - Life insurance, disability insurance, excess liability coverage, and any other relevant insurance coverage;
  - Wealth managers and clients normally agree on who can approve and/or change investment policies, who can authorize trading activity, and who can authorize money transfers.
  - Wealth managers seek information regarding clients' service needs and expectations.
  - The wealth manager and the client should have a clear understanding of what information should and should not be shared with other service professionals.

2.2 Client Goals

- Financial goals are **not always apparent**, **defined**, or **measurable**: they may be expressed by clients as wishes, desires, or aspirations.
  - **Planned Goals:** Planned goals are those that can be reasonably estimated or quantified within an expected time horizon.
    - ✓ **Retirement**. Maintaining a comfortable lifestyle beyond their working years is a goal for most clients.
    - ✓ **Specific purchases**. Tend to be a function of the level of wealth and/or stage of life.
    - ✓ **Education**. Clients often wish to fund their children's education.
    - ✓ **Family events**.(e.g. weddings)
    - ✓ **Wealth transfer**. When clients have a definite amount of inheritance that they wish to transfer, this goal may need to be prioritized over other goals.
    - ✓ **Philanthropy**. Clients often wish to make charitable donations during or after their lifetime.

2.2 Client Goals

- **Unplanned Goals:** Unplanned goals are those related to unforeseen financial needs.(difficult to estimate the **timing** and the **amount of funding needed**)
  - ✓ **Property repairs**. Although households may be insured against losses or catastrophes, clients may face additional spending needs if insurance does not fully cover such events.
  - ✓ **Medical expenses**. Private client households normally have medical insurance for illness or hospitalization, but health insurance may not cover all medical expenses. A related issue in some locations is the potential cost of elder care for oneself or one's family members.
  - ✓ **Other unforeseen spending**.

➢ When establishing client goals, private wealth managers consider **goal quantification, goal prioritization, and goal changes**.

Example - Client Goals

- Mr. C.Y. Lee is a managing director for the investment firm Acme & Bass, which is located in the Asia-Pacific region. Lee is 43 years old, is married, and has two children, ages 12 and 10. He and his family reside in a home that they own in Singapore. In a conversation with his wealth manager, Lee states that he wishes to fund the undergraduate tuition for his children to study abroad. Lee expects the tuition cost to be approximately £40,000 per year. Lee also wishes to fund his children's weddings at some point in the future. Because the education costs will occur in the next 5–10 years, Mr. Lee states that they are his top priority.
- Lee anticipates working until age 65 and does not know how much he and his wife will need to fund their retirement lifestyle. He mentions his desire to purchase a flat in London and let (rent) it as part of their retirement plan. The flat would cost approximately £1.5 million. Lee is also concerned about the future health care expenses of his wife's parents and to what degree he and his wife may need to support them financially.

Example - Client Goals

1. **Identify Lee's planned goals.**

   Lee's planned goals are (a) funding his children's education; (b) funding his children's weddings; (c) funding his and his wife's retirement; and (d) purchasing and subsequently letting (renting) a flat in London.

2. **Identify Lee's unplanned goals.**

   Lee's unplanned goals relate to the future health care expenses of his wife's parents, as well as possible uninsured property repairs for the Lee's Singapore residence and, if purchased, their London flat.

Example - Client Goals

3. **Discuss the issue of goal quantification for Lee.**

   Lee has quantified the education funding goal and the flat purchase. He and his wealth manager should work to estimate the cost of the weddings for Lee's children and the anticipated retirement lifestyle needs for Lee and his wife.

4. **Discuss the issue of goal prioritization for Lee.**

   Lee states that his first priority is education funding for his children. However, the timing of a need should not be the sole determinant of goal priority. If funding their children's education costs will leave Lee and his wife unprepared for retirement, for example, they may wish to reevaluate their priorities.

2.3 Private Client Risk Tolerance

- **Key terms for a set of risk-related concepts:**
  - **Risk tolerance** refers to the level of risk an individual is **willing** and **able to bear**. Risk tolerance is the inverse of risk aversion.
  - **Risk capacity** is the **ability** to **accept financial risk**. The key difference between risk capacity and risk tolerance is that risk capacity is **more objective in nature**, while risk tolerance relates to **an attitude**.
  - **Risk perception** is an individual's **subjective assessment of the risk** involved in an investment decision's outcome.
    - ✓ How a client perceives the riskiness of an investment decision or the investment climate—depends on the **circumstances** involved.

2.3 Private Client Risk Tolerance

- **Risk tolerance:**
  - Willingness (Risk tolerance)
    - ✓ Investment style
    - ✓ Psychological profile
    - ✓ Self-statement
  - Ability (Risk capacity).
    - ✓ Time horizon
    - ✓ Relative portfolio size (spending needs/portfolio size)

Situation		Risk tolerance
Willingness > Ability		Ability (Education)
Willingness < Ability	Return Objective = Willingness	Willingness (Reevaluation)
	Return Objective = Ability	Ability (Education)

2.3 Private Client Risk Tolerance

- Wealth managers often utilize **questionnaires** to assess clients' risk tolerance.
  - The result of a risk tolerance questionnaire, typically a numerical score, is often used as an input in the investment planning process.
- **Risk Tolerance Conversation** enable the wealth manager to educate a client about investment risk.
- Clients often have **multiple goals or objectives**, their risk tolerance may vary for different goals.
  - a low risk tolerance with respect to near-term goals but a higher risk tolerance when it comes to longer-term goals.

2.4 Technical and Soft Skills for Wealth Managers

- **Technical Skills**
  - Technical skills represent the **specialized knowledge and expertise** necessary to provide investment advice to private clients.
    - ✓ Capital markets proficiency.
    - ✓ Portfolio construction ability.
    - ✓ Financial planning knowledge.
    - ✓ Quantitative skills.
    - ✓ Technology skills.
    - ✓ Language fluency.

2.4 Technical and Soft Skills for Wealth Managers

- **Soft Skills (non-technical)**
  - Soft skills typically involve **interpersonal relationships**—that is, the ability to effectively interact with others.
    - ✓ Communication skills.
    - ✓ Social skills.
    - ✓ Education and coaching skills.
    - ✓ Business development and sales skills.

Example

- John Müller, CFA, a private wealth manager, recently received feedback from clients and colleagues as part of his performance review. Clients commented favorably on how Müller coordinates with external tax and legal professionals and on how well he listens to and understands his clients' needs. Colleagues remarked on Müller's broad knowledge of traditional and alternative asset classes and his ability to obtain new client engagements.
- Describe which technical and soft skills Müller demonstrated

Example

- **Solutions:**
  - In his performance review, Müller demonstrated the technical skills of capital markets proficiency and financial planning knowledge.
    - ✓ Müller's capital markets proficiency was shown through his broad knowledge of traditional and alternative asset classes,
    - ✓ while his financial planning knowledge was shown by his successful coordination with tax and legal professionals.
  - Müller demonstrated the soft skills of communication and business development and sales.
    - ✓ Communication skills were shown by his ability to listen well and understand client needs,
    - ✓ while business development and sales skills were shown by his record of obtaining new client engagements.

3. Investment planning

- After developing an understanding of their clients, wealth managers begin **the process of helping clients meet their objectives**.
  - **Capital Sufficiency Analysis (Capital needs analysis)**
    - ✓ The process by which a wealth manager determines whether a client has, or is likely to accumulate, sufficient financial resources to meet his or her objectives.
  - **Retirement Planning**

3.1 Capital Sufficiency Analysis

- **Methods for Evaluating Capital Sufficiency**
  - **Deterministic Forecasting Method**
    - ✓ Portfolio growth occurs in **a straight-line manner**.
    - ✓ Inputs
      - ◆a portfolio return assumption (r);
      - ◆the current value of the portfolio (PV);
      - ◆anticipated future contributions to the portfolio (+CF);
      - ◆cash flows from the portfolio that represent client needs (-CF).
    - ✓ **Simple to understand;**
    - ✓ **Unrealistic** with respect to the variability in potential future outcomes.

3.1 Capital Sufficiency Analysis

- **Monte Carlo simulation**
  - ✓ Generates random outcomes according to assumed **probability distributions** for separate key variables.(not whole portfolio).
  - ✓ Allows a wealth manager to model the uncertainty or variability in the future outcome.

- The table shows the percentage of trials at a given horizon in which the client successfully achieved her objective.

Monte Carlo Simulation Results

Percentile	Year 10 Portfolio Value	Year 15 Portfolio Value	Year 20 Portfolio Value
5th	$3,519,828	$3,651,264	$3,647,328
25th	$1,981,861	$1,698,449	$1,530,372
50th	$1,239,837	$843,820	$569,974
75th	$765,821	$305,126	($249,205)
95th	$197,179	($264,048)	($1,402,608)
Successful Trials	**98%**	**88%**	**69%**

Example

- Based on Exhibits 1 and 2, the probability that Njau will be able to meet her charitable goal is *closest* to:
  A. 25%.
  B. 50%.
  C. 75%.

Exhibit 1 Selected Client Information Items for Njau

Liquidity needs	$500,000 charitable pledge to Udhamini payable in 15 years
Risk tolerance	Moderate
Asset allocation	40% equities and 60% fixed income

Exhibit 2 Monte Carlo Simulation Results for Charitable Pledge (adjusted for inflation)

	Year 10 Portfolio Value ($)	Year 15 Portfolio Value ($)	Year 20 Portfolio Value ($)
25th %	501,288	729,230	1,035,373
50th %	405,927	553,803	767,448
75th %	331,056	422,746	563,039

Example

- **Correct Answer: B.**
  - The Monte Carlo simulation shows that Njau has a 50% probability of having an amount exceeding $553,803 in Year 15. Since Njau's charitable pledge goal to Udhamini is $500,000, she has a slightly greater than 50% probability of meeting or exceeding her charitable pledge goal in Year 15.

3.1 Capital Sufficiency Analysis

➢ Interpreting Monte Carlo Simulation Results

- Wealth managers tend to guide clients toward a **75%–90% probability** of success, although no industry standard range exists.
- When the probability of success falls below an acceptable range, **potential solutions** include the following:
  - ✓ Increasing the amount of contributions toward a goal
  - ✓ Reducing the goal amount
  - ✓ Delaying the timing of a goal (e.g., retiring a few years later than originally planned)
  - ✓ Adopting an investment strategy with higher expected returns, albeit within the client's acceptable risk tolerance and risk capacity

3.2 Retirement Planning

➢ Analyzing Retirement Goals

- Wealth managers may use several different methods to analyze a client's retirement goals.
- Three common methods
  - ✓ **Mortality tables**
  - ✓ **Annuities**
  - ✓ **Monte Carlo simulation**

3.2 Retirement Planning: Mortality Tables

➢ A **mortality table** indicates individual life expectancies at specified ages.

Plan Year	Client Age	Life Expectancy	Survival Probability
0	72	12.0	100%
1	73	11.4	97%
2	74	10.8	93%
3	75	10.2	90%
4	76	9.7	86%
5	77	9.1	82%

- In practice, a wealth manager can use a mortality table to estimate the **present value of a client's retirement spending needs** by assigning associated **probabilities based on life expectancy to annual expected cash outflows**.
- **Drawbacks:**
  - ✓ an individual client's probability of living to a certain age may exceed that of the general population.
  - ✓ Cannot model difference scenarios.

3.2 Retirement Planning: Annuities

- Annuities provide a series of fixed payments, either for **life** or for **a specified period**, in exchange for a lump sum payment.
  - Two basic forms.
    - ✓ With an immediate annuity, an individual (called the "annuitant") pays an initial lump sum, in return for a guarantee of specified future monthly payments—**beginning immediately**—over a specified period of time.
    - ✓ With a deferred annuity, the specified future monthly payments **begin at a later date**.
- A relatively simple way of calculating the present value of a client's desired retirement spending is by pricing an annuity.

3.2 Retirement Planning: Monte Carlo Simulation

- **Advantages** of Monte Carlo Simulation
  - its applicability to the **client's actual asset allocation**.
  - **aggregating the results of many trials of probability-based estimates of key variables**, the overall probability of meeting retirement needs is generated,
  - can **flexibly model different scenarios** and **explore issues that are important to clients**.
- **Limitations** of Monte Carlo Simulation
  - It is only a method of estimation; it **cannot predict the future**.
  - the output from Monte Carlo simulation can **be highly sensitive to small changes in input assumptions.**
  - Monte Carlo output includes the probability of reaching a goal (or goals) **but not necessarily the "shortfall magnitude."**

Example

- **Sili next uses three approaches to analyze his retirement goals:**
  - Approach 1 Sili considers the probability that he will live to a certain age and then predicts his inflation-adjusted retirement spending according to the probability that he will still be living in a given year. This approach allows him to estimate the present value of his retirement spending needs by assigning associated probabilities to annual expected cash outflows.
  - Approach 2 Sili determines that he can specify his level of annual spending during retirement and that he can model that spending as a series of fixed payments. He calculates the present value of that series of payments as of the day of his retirement, resulting in the amount of money that he will need to fund his retirement goals.
  - Approach 3 Sili models the uncertainty of each key variable individually by assigning each one its own probability distribution and then generates a large number of random outcomes for each variable. He aggregates the outcomes to determine an overall probability of reaching his objectives. Sili sees this as a flexible approach that allows him to explore various scenarios, including unforeseen expenses.

Example: Correct Answers

Approach 1	**Identification:**	Mortality Tables
	Explanation:	A mortality table allows for estimating the present value of retirement spending needs by associating each outflow with a probability based on life expectancy. Sili uses a mortality table to determine the probability that he will live to a certain age. This information allows him to predict his anticipated inflation-adjusted retirement spending according to the probability that he will be living in a given year. A mortality table illustrates an individual's life expectancy at any given age. A wealth manager can use a mortality table to estimate the present value of a client's retirement spending needs by assigning associated probabilities to annual expected cash outflows.
Approach 2	**Identification:**	Annuity Method
	Explanation:	The calculated price of an annuity equals the present value of a series of future fixed outflows during retirement. A relatively simple way for Sili to calculate the present value of his desired retirement spending is by pricing an annuity. Annuities provide a series of fixed payments, either for life or for a specified period, in exchange for a lump sum payment.

Example: Correct Answers

Approach 3	**Identification:**	Monte Carlo Simulation
	Explanation:	Monte Carlo simulation yields an overall probability of meeting retirement needs by aggregating the results of many trials of probability-based estimates of key variables, and it is a flexible approach for exploring different retirement scenarios. Monte Carlo simulation can analyze the likelihood of Sili's portfolio meeting his anticipated retirement needs. This simulation models the uncertainty of the key variables and the uncertainty or variability in the future outcome. A Monte Carlo simulation uses assumptions of probability distributions for the key variables and then runs a large number of independent trials that generate many random outcomes. These outcomes are then aggregated to determine the probability of Sili reaching his investment objectives. An advantage of Monte Carlo simulation for retirement planning is its flexibility in modeling and exploring different scenarios. Typically, retirement goals are more complex than a fixed, annual cash flow need. For instance, if Sili wishes to determine the effect of a significant purchase/gift or large unforeseen expenses, he can model these scenarios with a Monte Carlo simulation.

3.3 Behavioral Considerations in Retirement Planning

- **Heightened loss aversion**. Some studies suggest that retirees are much more loss-averse than younger investors.
- **Consumption gaps**. Due to loss aversion and uncertainty about future financial needs, many retirees spend less than economists would predict, resulting in a gap between actual and potential consumption.
- The "**annuity puzzle".** Individuals tend **not** to prefer to invest in annuities.
  - Explanations for the puzzle include investors' reluctance to give up hope of substantial lifestyle improvement, their dislike of losing control over the assets, and, in many cases, the high cost of annuities.
- **Preference for investment income over capital appreciation**. Evidence for this behavior includes the tendency of investors to spend dividend income rather than selling shares of securities and spending the proceeds.
  - One possible explanation is that investors lack self-control with respect to spending. This theory suggests that spending only the income and not the principal is a self-control mechanism.

4. Investment Policy Statement

- The investment policy statement (IPS) is **a written planning document** that describes a client's investment objectives and risk tolerance over a relevant time horizon, along with the constraints that apply to the client's portfolio.
- The IPS is also **an operating manual**, listing key ongoing management responsibilities.
- **Advantages**
  - One advantage is that the IPS **encourages investment discipline** and **reinforces the client's commitment** to follow the strategy.
  - A second advantage is that the **IPS focuses on long-term goals** rather than short-term performance.

4. Investment Policy Statement

- An investment policy statement (IPS) for an individual includes the following parts:
  - Background and Investment Objectives
  - Investment Parameters
  - Portfolio Asset Allocation
  - Portfolio Management
  - Duties and Responsibilities
  - IPS Appendix

4.1 Background and Investment Objectives

- The client's background and investment objectives are **critical parts** of the IPS.
  - Background items commonly include the client's name and age, as well as relevant personal and financial information.
  - Common objectives include funding lifestyle needs during retirement, supporting family members, funding philanthropic activities, and meeting bequest goals.
- Investment objectives should be **detailed and quantified** whenever possible.
- In a situation involving multiple objectives, the wealth manager should note **which of the objectives is primary**.

4.1 Background and Investment Objectives

- The investment objective, when linked to the client's asset allocation and the wealth manager's capital market assumptions, should provide the basic inputs to a **capital sufficiency analysis**.
  - Whenever the capital sufficiency analysis does not support the investment objective, the wealth manager must work with the client to establish **a revised objective** that the manager judges to be achievable.
- The IPS should include the **market value of the portfolio** and of the **accounts** that make up the portfolio。
- The background and investment objectives section should describe
  - **any other investment assets** the client may have outside of the portfolio
  - **any cash flows from external sources.**

Example - Background and Investment Objectives

- Huang Zhuo Wei, age 51, is a private investor in Singapore. Wei is an engineer by trade but has also been successful in real estate development. His portfolio consists of CNY 16.5 million in a liquid securities portfolio, including some common stock positions in which he has large embedded capital gains, and several real estate investments valued at approximately CNY 9 million (combined). He expects to make additional real estate investments in the coming years. He estimates that he can invest approximately CNY 330,000 per year, inflation-adjusted, in real estate until retirement. He has a much higher than average tolerance for volatility, and historically, his liquid portfolio has consisted mostly of large-cap stocks of technology companies. He has stated that his time horizon is 10 years, since he anticipates retiring in approximately 10 years. He estimates that he will need approximately CNY 1 million per year, inflation-adjusted, to support his lifestyle in retirement. He wishes to grow his investment resources and create a significant inheritance for his children.

Example - Background and Investment Objectives

- **Discuss how Wei's wealth manager should create the investment objectives section of Wei's IPS.**

  The purpose of this portfolio is to **support Wei's lifestyle in retirement** and to **provide an inheritance for his children**. Aside from the investment assets in his portfolio, Wei **has private real estate investments valued at approximately CNY 9 million** and is likely to add to this segment of his net worth over the next several years. Wei does not anticipate needing distributions from this portfolio for at least 10 years.

  Wei estimates an annual, inflation-adjusted lifestyle need of approximately CNY 1 million per year beginning at his retirement in 10 years. His cash needs will be satisfied in part through portfolio distributions and in part from his real estate portfolio. The wealth manager will continue to work with Wei to quantify his bequest objective and ensure that his portfolio distribution rate is sustainable throughout his retirement.

4.2 Investment Parameters

- **1. Risk Tolerance**. Wealth managers should consider the client's **ability** and **willingness** to withstand portfolio volatility.
- **2. Investment Time Horizon**. A client's investment horizon is indicated in this section, but often as **a range** rather than a specific number of years.
  - e.g. exceeds 15 years, less than 10 years.

Example - Investment Time Horizon

- In Example - Background and Investment Objectives, Huang Zhuo Wei stated that his investment horizon is 10 years because he expects to retire at that point.
- **Discuss how his wealth manager should reflect Wei's investment horizon in the IPS.**

  Wei's true investment horizon is through retirement, a period that likely will be much longer than 10 years. His wealth manager should describe his **time horizon as exceeding 10 years**.

4.2 Investment Parameters

3. Asset Class Preferences

- The IPS should indicate the asset classes that will comprise a client's portfolio.
- Alternatively, the wealth manager may list the asset classes that the client has not approved.
- Some wealth managers include a **short narrative** about the importance of asset allocation and the process that the wealth manager used to educate the client about asset class risk and return characteristics.
  - ✓ The narrative captures in written form the risk–return trade-off that the client explored with the wealth manager during the information-gathering process.

4.2 Investment Parameters

➢ **4. Other Investment Preferences**

- This section may contain a general comment about or specific criteria about for these **ESG** preferences.
- Other investment preferences described in this section might be a "**legacy**" holding that the client wishes to retain or a non-recommended investment that the client wishes to make.

4.2 Investment Parameters

- **5. Liquidity Preferences**.
  - If the client has liquidity needs that are not established in the background and investment objectives section (e.g. a cash reserve).
  - If the client's liquidity preference constrains asset class selection decisions or implementation decisions.
- **6. Constraints**.
  - investment options in certain accounts (e.g. employer-sponsored defined contribution retirement plan account)
  - large unrealized capital gains
  - ESG-related constraints

4.3 Portfolio Asset Allocation

- This section contains the **target allocation** for **each asset class** in the client's portfolio.
  - Wealth managers who use a **strategic asset allocation** approach typically define a target allocation for each asset class as well as **upper and lower bounds**.
  - Wealth managers who use a **tactical asset allocation** approach may list asset class target "**ranges**" rather than specific target allocation percentages.

4.4 Portfolio Management

- **1. Discretionary Authority**
  - **Full discretion** means that the wealth manager is free to implement rebalancing trades and replace fund managers **without prior client approval**.

4.4 Portfolio Management

2. Rebalancing

- Some wealth managers use a "**time-based**" rebalancing policy, whereby client portfolios are rebalanced at a certain time interval regardless of the difference between current asset class weights and target asset class weights.
- It is more common for wealth managers to use a "**threshold-based**" rebalancing policy, whereby the manager initiates rebalancing trades when asset class weights deviate from their target weights by a pre-specified percentage.
- The rebalancing section also sets expectations for how **frequently** the wealth manager reviews a client's portfolio for possible rebalancing opportunities.

4.4 Portfolio Management

- **3. Tactical Changes**
  - Section indicates
    - ✓ **Whether**
    - ✓ **under what circumstances**
    - ✓ **to what degree**
  - the wealth manager is permitted to go outside those ranges when executing a tactical change.
    - ✓ Note that a wealth manager who uses only a strategic asset allocation approach would likely not include this section in the IPS.

4.4 Portfolio Management

➢ **4. Implementation**

- This section includes information about the **investment vehicles** the wealth manager recommends to clients.
  - ✓ third-party money managers ⇒ due diligence process; frequency; quantitative screens used in the due diligence process; qualitative criteria that influence the manager selection and retention decisions;
  - ✓ proprietary investment;
- This section indicates whether the wealth manager **prefers** to invest in mutual funds, exchange-traded funds (ETFs), or individual securities.
- A general discussion of the incremental cost of using third-party money managers is relevant here.

4.5 Duties and Responsibilities

- **1. Wealth Manager Responsibilities**
  - Developing an appropriate asset allocation
  - Recommending or selecting investment options, such as pooled investment vehicles or individual securities
  - Monitoring the asset allocation and rebalancing
  - Using derivatives, leverage, short sales, and repurchase agreements (repos)
  - Monitoring the costs associated with implementing the investment strategy
  - Monitoring the activities of third-party service providers (e.g., asset managers and/or custodians)
  - Drafting and maintaining the IPS
  - Reporting of performance, including an indication of the base currency
  - Reporting of taxes and financial statements
  - Voting proxies
  - Assisting with the preparation of agreements associated with private fund offerings

4.5 Duties and Responsibilities

➢ **2. IPS Review**

- The wealth manager sets expectations for how **frequently** the client and wealth manager will review the IPS.
- As part of this review, it is important for the client to affirm that the **investment objectives remain accurate**.
- Likewise, it is important for the wealth manager to confirm that the **strategy remains likely to meet those objectives**.

4.6 IPS Appendix

- **1. Modeled Portfolio Behavior**
  - Modeled portfolio behavior describes **a range of possible performance outcomes** over various holding periods and can provide more value to the client than merely stating the return objective or the "expected compound return."
- **2. Capital Market Expectations**
  - Capital market expectations include the wealth manager's modeled portfolio statistics—that is, the **expected returns** and **standard deviations** of asset classes, as well as modeled **correlations** between asset classes.

5. Portfolio Construction and Monitoring

- **Portfolio Construction**
  - Traditional Approach
  - Goals-Based Investing Approach
- **Portfolio Reporting and Review**
  - Portfolio Reporting
  - Portfolio Review
- **Evaluating the Success of an Investment Program**
  - Goal Achievement
  - Process Consistency
  - Portfolio Performance
  - Definitions of Success

5.1 Portfolio Construction

➢ Traditional Approach

- Constructing portfolios for private clients involves several key steps:
  - ✓ **1) Identify asset classes**. The wealth manager identifies the asset classes that may be appropriate for the client's portfolio.
  - ✓ **2) Develop capital market expectations**. The wealth manager considers the expected returns, standard deviations, and correlations of asset classes in relation to the client's investment horizon.
  - ✓ **3) Determine portfolio allocations**. Wealth managers sometimes use mean–variance optimization to identify possible portfolio allocations that meet the client's return requirement and risk tolerance. (Mean–variance optimization, MVO)

5.1 Portfolio Construction

- **Traditional Approach**
  - Constructing portfolios for private clients involves several key steps:
    - ✓ **4) Assess constraints**. As we noted earlier in the reading, private clients often face certain constraints.
    - ✓ **5) Implement the portfolio**. At this stage, the wealth manager faces several decisions. ⇒ active or passive; manager selection; factors(value, Size); individual securities or pooled vehicles; currency hedging;
    - ✓ **6) Determine asset location**. When a client's portfolio comprises **multiple accounts**, the wealth manager must determine **where to allocate** the various asset classes and securities.

5.1 Portfolio Construction

➢ Goals-Based Investing Approach

- The manager then performs **mean–variance optimization** for **each goal** "portfolio" rather than at the overall portfolio level.
- Goal portfolios are optimized either to **a stated maximum level of volatility** or to **a specified probability of success**.
- **An advantage** of the goals-based investing approach is that it may be easier for clients to express their risk tolerance on a goal-specific basis rather than at the overall portfolio level.
- **A disadvantage** is that the combination of goal portfolio allocations may not lead to optimal mean–variance efficiency for the entire portfolio.
- The following steps are the same as Traditional Approach：
  - ✓ asset classes, implementing the portfolio, and determining asset.

5.2 Portfolio Reporting and Review

- **Portfolio reporting** involves **periodically** providing clients with information about their **investment portfolio** and **performance**.
  - A portfolio asset allocation report, which may reflect strategic asset allocation targets
  - A performance summary report for the current (often year-to-date) period
  - A detailed performance report, which may include asset class and/or individual security performance
  - A historical performance report covering the period since the inception of the client's investment strategy
  - A contribution and withdrawal report for the current period
  - A purchase and sale report for the current period
  - A currency exposure report detailing the effects of exchange rate fluctuations

5.2 Portfolio Reporting and Review

- Wealth managers often face an **inherent conflict** between the client's investment horizon, which may be decades in length, and the typical performance evaluation horizon, which may be one calendar quarter or one year.
- When goals-based investing is used, portfolio reporting may focus on the **client's progress toward a goal** (or goals) rather than on the (often short-term) performance of asset classes or individual securities.
- **Benchmark reports** are another component of portfolio reporting.

Example - Portfolio Reporting

- Simon Crosby provides investment advice for clients in Canada. Each quarter, he sends his clients only a detailed list of all the investments in their portfolio. The list includes the acquisition cost, the acquisition date, and the current market value for each investment, as well as the percentage gain or loss on each investment relative to its cost.
- **Discuss how Crosby's reporting practice can be more effective.**

  Crosby's reports do not enable his clients to determine their asset allocation or the performance of their overall portfolios. Crosby could address this issue by including a portfolio asset allocation report and a performance report. The current reporting structure also does not provide transaction details, such as portfolio contributions, withdrawals, interest/dividends, and capital appreciation, all of which could be provided by a portfolio summary report. Finally, Crosby's portfolio reporting can be improved by including market commentary, typically in a letter or email.

5.2 Portfolio Reporting and Review

- **Portfolio reviews** provide an opportunity for the wealth manager to revisit the client's **investment plan** and reinforce the **appropriateness of the strategy**.
  - As part of the portfolio review, the wealth manager typically inquires about **any changes** in the client's **objectives, risk tolerance, or time horizon**.
  - Another common aspect of a portfolio review is a comparison of the client's **asset allocation** to **the target allocation**.
  - The key difference between portfolio reporting and portfolio review is that the wealth manager is **more actively engaged in a review**.

5.3 Evaluating the Success of an Investment Program

1. Goal Achievement

- A successful investment program for a private client is one that achieves the client's goals/objectives **with an acceptable amount of risk**.
- The client should remain likely to **meet his or her long-term objectives** without meaningful adjustments to the plan.

5.3 Evaluating the Success of an Investment Program

- **2. Process Consistency.** The following are some points that wealth managers may consider in evaluating success:
  - If the wealth manager selects third-party fund managers to implement the client's portfolio, how have the managers performed relative to their own benchmarks? When the wealth manager has recommended fund manager changes, have those changes improved or detracted from subsequent portfolio performance?
  - Has the wealth manager followed the prescribed process for rebalancing the client's portfolio?
  - Has the wealth manager taken steps to reduce costs in the client's portfolio? Is the wealth manager overlooking any opportunities to reduce fees and expenses?

5.3 Evaluating the Success of an Investment Program

- **2. Process Consistency.** The following are some points that wealth managers may consider in evaluating success:
  - Has the wealth manager considered taxation issues in the client's portfolio?
  - For clients with ESG preferences, has the wealth manager implemented the client's portfolio strategy accordingly?
  - If the wealth manager uses tactical asset allocation, how has tactical positioning impacted the portfolio's performance?
  - Is the wealth manager maintaining an ongoing dialogue with the client to assess potential changes in the client's goals, time horizon, risk tolerance, and other relevant factors?
  - Where applicable, has the wealth manager coordinated the investment strategy with the client's estate plan and philanthropic objectives?

5.3 Evaluating the Success of an Investment Program

- **3. Portfolio Performance**
  - Performance evaluation of a private client's portfolio can be expressed in either **absolute** or **relative** terms.
  - An absolute performance benchmark might be inflation plus a fixed percentage or simply a fixed percentage return that relates to a client's capital sufficiency analysis.
  - To measure relative returns, a wealth manager compares the client's investment portfolio results to those of an appropriately weighted benchmark.
  - It is also important to evaluate whether the portfolio's **actual downside risk** is consistent with the client's risk tolerance.

5.3 Evaluating the Success of an Investment Program

4. Definitions of Success

- When the wealth manager and the client have different definitions of success for the client's investment program, the potential for client disappointment can increase.
- It is good practice for **both parties to agree on the definition of success** in the early stages of the relationship.

Example

- Discuss how successful Smith's investment program has been under Wellesley's management.
  - Oliver Wellesley, CFA, a wealth manager, is preparing to meet with a longtime client, Eva Smith, age 83. Wellesley and Smith began working together when Smith was 64 and preparing for her retirement.
  - She has earned a 6.5% compound annual return with Wellesley as her wealth manager. This return is close to the annual return that Wellesley modeled in his capital sufficiency analysis of Smith's portfolio many years ago.
  - Distributions from Smith's portfolio have adequately met her need for retirement income, which has always been her highest-priority goal.
  - According to Wellesley's most recent capital sufficiency analysis, Smith's portfolio is very likely to meet her retirement income and estate bequest objectives in the future.
  - However, Smith's investment return has trailed the weighted benchmark return by 0.40% since the portfolio's inception and has exhibited slightly more volatility than the benchmark. Smith recently reviewed her IPS and concluded that Wellesley has consistently followed the process outlined in the IPS.

Example

- **Solution:**
  - From the perspective of meeting goals/objectives, Smith's investment program has been successful.
    - ✓ The strategy has met her retirement income needs, and Wellesley's capital sufficiency analysis suggests that she has a high probability of achieving future objectives (including ongoing retirement lifestyle goals and an estate bequest goal).
    - ✓ Also, Wellesley has followed a consistent process, which is an indication of a successful investment program.
    - ✓ However, if Smith and Wellesley agreed that outperforming a weighted benchmark was an important goal for her investment strategy, then the investment program has failed.

6. Ethical and Compliance Considerations

- **Fiduciary Duty and Suitability**
  - **Fiduciary duty** is the obligation to deliver a high standard of care when acting for the benefit of another party.
  - **Suitability**: when judging the suitability of a potential investment, the wealth manager should review many aspects of the client's knowledge, investing experience, and financial situation.
- **Know Your Customer (KYC)**
  - KYC requires wealth managers and their firms to obtain essential facts about every client for whom they open and maintain an account.

6. Ethical and Compliance Considerations

- **Confidentiality**
  - Preserving client confidentiality is critical to maintaining trust in the relationship.
  - This issue can be a particular challenge when a wealth manager advises multiple family members or advises clients who may know one or more of the wealth manager's other clients.
- **Conflicts of Interest**
  - The structure of wealth managers' revenue creates the potential for conflicts of interest.
    - ✓ e.g. recommend only products that generate commissions (and perhaps those with the highest commissions).

6. Ethical and Compliance Considerations

- Several **global regulations** have relevance for private wealth managers.
  - Markets in Financial Instruments Directive (MiFID II, European Union, 2018)
  - Common Reporting Standard (OECD Council/G20, 2014)
  - The Foreign Account Tax Compliance Act (FATCA, United States, 2010)

7. Private Client Segments

- **Mass Affluent Segment**
  - The mass affluent segment is generally focused on **building their investment portfolio** and may have **financial planning needs** (e.g., education funding, cash flow or budget management, and risk management).
  - In servicing the mass affluent segment, wealth managers do **not** typically **customize** their investment management approach for each client.
    - ✓ financial planning needs; insurance; retirement planning.
    - ✓ discretionary portfolio or non-discretionary portfolio.

7. Private Client Segments

- **High-Net-Worth Segment**
  - Wealth managers of high-net-worth clients tend to focus on **customized investment management**, **tax planning**, and **wealth transfer issues** (i.e., estate planning).
- **Ultra-High-Net-Worth Segment**
  - The ultra-high-net-worth segment tends to have multi-generational time horizons, highly complex tax and estate-planning considerations, and **a wider range of service needs**.
    - ✓ bill payment services, concierge services, travel planning, and advice on acquiring assets such as artwork or aircraft; family office.

7. Private Client Segments

- **Robo-advisors (part of the mass affluent client segment).** Robo-advisors have emerged in the mass affluent client segment. These advisors have a primarily digital client interface.
  - Robo-advisor service providers generally charge **lower fees** than traditional wealth management firms.
  - Scalability of technology has enabled robo-advisors to service investors with relatively **small portfolios**.
  - Robo-advisors gather information—such as risk tolerance, time horizon, goals/objectives, assets, and liabilities—directly from the client via web-based **questionnaires**.
  - Using **mean–variance optimization** or other techniques, the robo-advisor recommends a suitable asset allocation for the client and typically implements the investment strategy using **exchange-traded funds** or **mutual funds**.

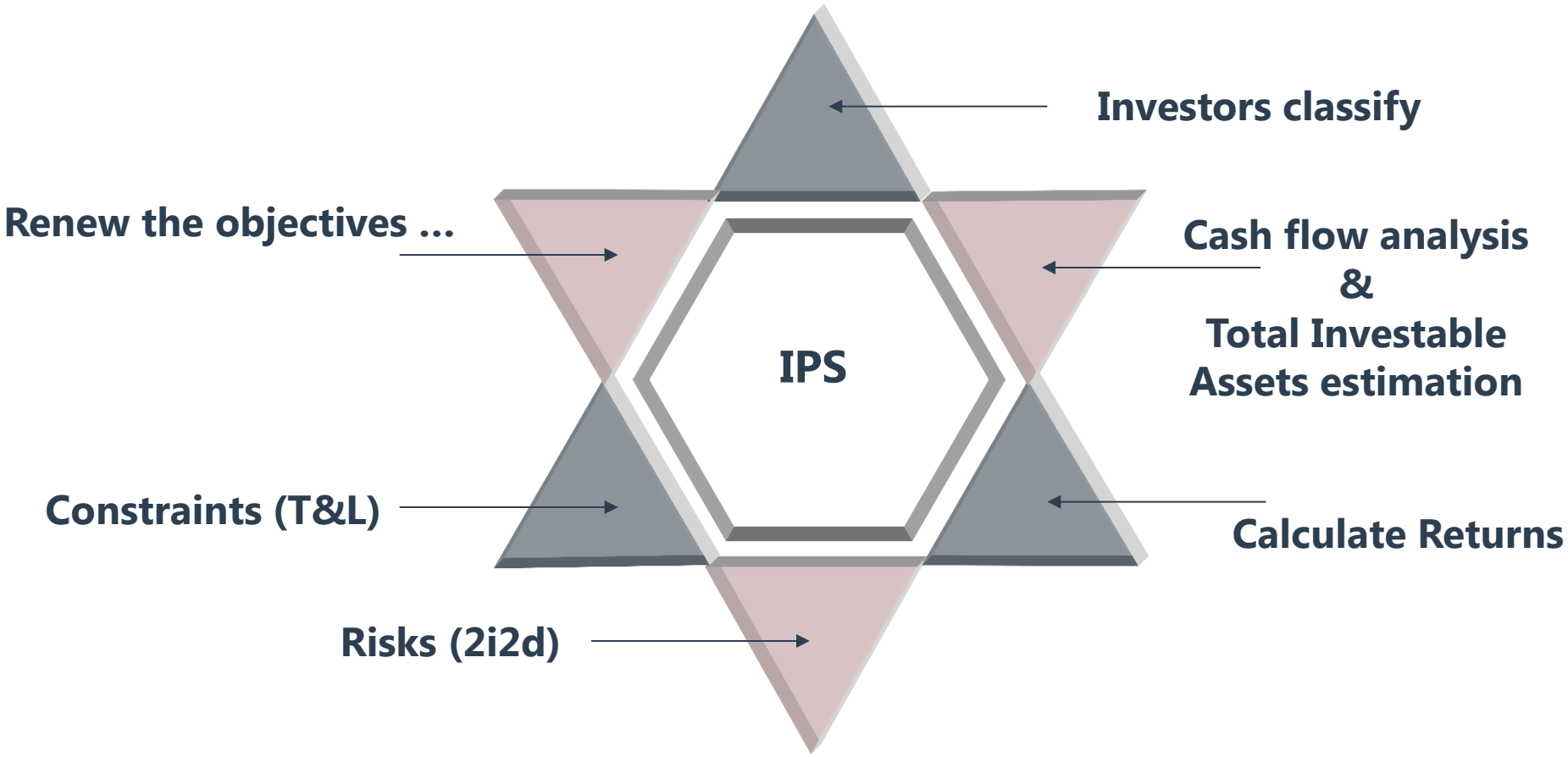
7. Private Client Segments

➢ **Summary**

Segments	Asset Level	service personnel	Characteristics
Robo-advisors	less $250,000	Robo-advisors	low-cost; small portfolio; MVO; ETF; mutual fund;
Mass Affluent	$250,000 to $1 million	professional wealth manager	build their portfolio; financial planning needs; non-customized;
High-Net-Worth	$1 million to $50 million	specialized advisers	more customized strategies; tax planning; wealth transfer issues;
Ultra-High-Net-Worth	over $50 million	a wider range of service needs	complex tax situations, estate planning, bill payment, concierge services, travel planning, and advice on acquiring high-end assets; family office.

8. Six steps to formulate individual's IPS

- 6 steps to formulate personal IPS



8. Investor's IPS - 1

- **Investor classify**
  - Personal investor

Source of wealth
- Employee with annual salaries
- Own invest-able asset (deposit)
- Trust distribution/Inherit money/one-time windfall

Size of wealth
- There is one-time windfall, size is large
- or size will be small

Stage of life
- The pre-retirement period is long
- There is also the period after retirement

Personal considerations
- With children – education expenses
- With mortgage – liquidity needs
- With tax

8. Investor's IPS - 2

- **Return objectives**
  - Personal investor

- **Asset**
  - Maintain the inflation-adjusted value
  - Asset appreciation
  - Specific targets
- **Cash flow needs**
  - Support living expense (now and retirement)
  - Support mortgage – liquidity needs
  - Support children's education
  - Support parents' living expense
  - Support families' health care expense
  - Support insurance premium payment

Always just covered by salary in exam

8. Investor's IPS - 3

- **Cash flow analysis**
  - Personal investor 1
    - **Cash inflow**
      - Salary
      - Trust distributions/inheritance
      - Other cash inflow (dividends/interest payment)
    - **Cash outflow**
      - Tax
      - Living expense
      - Down payment at T_0
      - Mortgage payment from T_1
      - Donation just on T_0 or from T_0 to T_n
      - Other one-time need now
    - **Net cash flow**
      - Net CF at $T_0 > 0$, as a part of T_{IA}
      - Net CF from $T_1 < 0$, as the liquidity needs

8. Investor's IPS - 4

Cash flow analysis

Time	T_0	T_1
Inflow		
Salary	S	S * (1+f)
Trust / inheritance	G	0
Total inflow	S+G	S * (1+f)
Outflow		
Tax	S * t	S * (1+f) * t
Living expense	L	L * (1+f)
Down payment	D	0
Mortgage payment	0	MG
Charity donation	C	0
Other one-time need	T	0
Total outflow	S * t + L + D+ C + T	S * (1+f) * t + L * (1+f) + MG
Net cash flow	Total in – Total out	Total in – Total out

8. Investor's IPS - 5

- **Return calculation**
  - Personal investor

- **TIA**
  - Current portfolio's value
  - Net CF in at T_0
  - Excluding the house and other unavailable Inheritance
- **Real Return**

$$R_r = -\frac{Net\ CFs\ at\ T_1}{TIA}$$

- **Nominal Return**

$$R_f = -\frac{Net\ CFs\ at\ T_1}{TIA} + f$$

8. Investor's IPS - 6

- **Risk**
  - **Personal investor**

Ability - 2i
- They have a long time horizon;
- They are young, with more human capital;
- They may get inheritance in future;
- Their job and income are secure;
- Their health insurance is provided.

Ability - 2d
- After-tax salary can not cover living expense;
- Sustained Cash flows (Mortgage) must be paid;
- Asset base is small;
- Other uncertainties.

Willingness
- Based on "……" in the case.

Overall
- The narrow one dominates.

8. Investor's IPS - 7

- **Investment constraints**
  - Liquidity
    - ✓ The A need portfolio to provide B for next year's C
      - ◆A: Name B: Money C: Use (Mortgage pay)
  - Time horizon
    - ✓ They have a long term two–stage horizon;
    - ✓ In the 1st stage, the A must pay B , and also pay C for their D;
    - ✓ In the 2ed stage, they are in retirement, E years from now.
      - ◆A: Name B: Living expense, mortgage payment;
      - ◆C: Education fee / health care fee;
      - ◆D: Children / parents;
      - ◆E: How many years from now (30).

8. Investor's IPS - 8

- **Tax**
  - The tax rate is … , the tax aspect should be considered;
  - The … 's tax treatment is uncertain, they need a legal counsel.
- **Regulations**
  - The prudent investor rule is applied;
  - The … need a legal counsel to create a trust to …
- **Unique**
  - The … say they do not want to invest in …
  - The … want to create a trust to care for …
  - The … want to donate … to local charity

8. Investor's IPS - 9

- **Renew objectives**
  - Main issue: Renew return objective close to retirement
    - ✓ Re-calculate the net CF need annually → PMT
    - ✓ Re-calculate the asset base now → PV
    - ✓ Calculate the target asset value when retire → FV
    - ✓ Calculate the required rate of return → I/Y
- **New objectives**
  - Support living expense in retirement
  - Support donating money to charity
  - Provide inheritance for children

Investor's IPS - Example

- **Case analysis Case – 2008 CFA level 3 morning session Q1**
  QUESTION 1 HAS FOUR PARTS (A, B, C, D) FOR A TOTAL OF 36 MINUTES. Roberto and Mariana Carvalho live in a large city in Brazil with their two children, ages four and two. Roberto is 30 years old and Mariana will be 30 years old later this month. Roberto is a manager in a manufacturing facility and Mariana is a musician in the local symphony orchestra. Roberto and Mariana's annual salaries total 120,000 Brazilian reais (BRL) after tax. Their salaries just cover their living expenses. The average annual inflation rate is four percent and their salaries and expenses are expected to increase at this rate. They are healthy and believe their jobs and earning potential are secure. The Carvalhos' salaries, dividends, and interest are taxed at 20 percent, and capital gains at 15 percent. Mariana's parents have significant wealth and funded an irrevocable personal trust for her. Brazil has a wealth transfer tax that applies to transfers into trusts and to inheritances. Brazil has adopted the Prudent Investor Rule for the administration of trusts. The current value of the trust is BRL 1,500,000.

Investor's IPS - Example

- **Case analysis Case – 2008 CFA level 3 morning session Q1(Cont'd)**
  The terms of the trust state that when Mariana reaches the age of 30, she will receive a tax-free distribution of half the value of the trust. The balance of the trust will remain invested and will distribute in total to her when she reaches age 40. Since she does not have access to the remaining balance for ten years, this balance is not considered a part of the Carvalhos' investable assets, but is part of their total net worth. In addition, Mariana expects to inherit a substantial sum of money upon the death of both parents.
  The Carvalhos have BRL 500,000 in investable assets, currently all in short-term bank deposits. It is their intention to maintain at least this amount in investable assets, on an inflation-adjusted basis, in the future.
  The Carvalhos currently live with Mariana's parents, but are now purchasing a home. The purchase price of the home is BRL 850,000. The down payment is 30 percent of the cost of the home and will be funded from the trust distribution. The Carvalhos will take out a fixed rate mortgage for the balance of the purchase price. The after-tax mortgage cost will be fixed at BRL 55,000 (principal and interest) annually for 30 years, with the first annual payment due one year from now.

Investor's IPS - Example

- **Case analysis Case – 2008 CFA level 3 morning session Q1(Cont'd)**

The Carvalhos' immediate investment goal is to have their investment portfolio cover the cost of the mortgage, while maintaining the portfolio's inflation-adjusted value. They plan to retire at the age of 60 and their long-term goal is to have an investment portfolio that will provide an annual income comparable to their current salaries adjusted by inflation. Their family health insurance is provided by Roberto's employer, both now and in retirement. They are hopeful their two children will attend the local university at no cost. The university does not charge tuition fees for qualified students who pass its entrance exam. Those who do not pass the exam are required to pay full tuition, which is high relative to the Carvalhos' living expenses.

In order to meet their investment goals, the Carvalhos realize they need to consider investments other than short-term bank deposits. The Carvalhos hire Luiz Oliveira, CFA, to manage an investment portfolio that they will fund with their BRL 500,000 in bank deposits and the net proceeds of Mariana's trust distribution at age 30.

Investor's IPS - Example

- **Case analysis Case – 2008 CFA level 3 morning session Q1(Cont'd)**

A. i. Prepare the return objectives portion of the Carvalhos' investment policy statement (IPS).

ii. Calculate the after-tax nominal rate of return that is required for the next year. Show your calculations. (12 minutes)

B. i. Identify two factors in the Carvalhos' situation that increase their ability to take risk.

ii. Identify two factors in the Carvalhos' situation that decrease their ability to take risk.

iii. Determine whether the Carvalhos have below-average, average, or above-average ability to take risk.

C. Prepare the following constraints of the Carvalhos' IPS:

i. Liquidity ii. Time horizon

Investor's IPS - Example

➢ **Correct Answer:**

A. i. The return objective for the Carvalhos' portfolio is to:

- Provide for the mortgage payments for a home;
- Support their living expenses in retirement;
- Maintain the inflation-adjusted value of the portfolio.

Investor's IPS - Example

A ii.

	Current	Year 1
Inflows		
Salary	120,000	124,800
Trust Distributions	750,000	0
Total Inflows	870,000	124,800
Outflows		
Living Expenses	120,000	124,800
Down Payment on Home	255,000	0
Mortgage on Home	0	55,000
Total Outflows	375,000	179,800
Net Inflows/ (Outflows)	495,000	(55,000)
Investment Assets		
Current Savings Portfolio	500,000	
Current Year Net Inflow	495,000	
Total Investable Assets	995,000	

Investor's IPS - Example

A ii.

Calculation of Required return		
Outflows Required Next Year	55,000	
Divided by Investable Assets	995,000=	5.53%
Plus Expected Inflation		4%
Required After-Tax Nominal Return—Arithmetic		9.53%
Required After-Tax Nominal Return—Geometric	1.0553*1.04	9.75%
Calculation of Required return		

Investor's IPS - Example

- **Correct Answer:**

  Part B: template for Question 1-B

  i. Identify two factors in the Carvalhos' situation that increase their ability to take risk

  - They have a long time horizon
  - They are young and have more human capital
  - They will receive another trust payout in 10 years
  - They will potentially inherit a large sum of money from Mariana's parents
  - They have stable income

Investor's IPS - Example

- **Correct Answer:**

  Part B: template for Question 1-B

  ii. Identify two factors in the Carvalhos' situation that decrease their ability to take risk

  - They have a moderate asset base relative to required cash flows from the portfolio;
  - There is no assurance the children's education will be covered by a scholarship and the cost could be substantial.

  iii. Determine whether the Carvalhos have below-average, average or above-average ability to take risks (circle one)

  Above-average Average Below-average

Investor's IPS - Example

- **Correct Answer:**

  Part C: template for Question 1-C

Constraint	Prepare the following constraints of the Carvalhos' IPS
i. Liquidity	The Carvalhos need their investment portfolio to provide BRL55,000 for next year's mortgage payment.
ii. Time horizon	The Carvalhols have a long-term multi-stage time horizon. In the short term, they must pay living expenses and provide a home for their family. They may also have to pay tuition for their children. Their second stage is retirement, thirty years from now.

Investor's IPS - Example

- **Case analysis Case – 2008 CFA level 3 morning session Q1(Cont'd)**

  Twenty-five years have passed. The Carvalhos are now 55 years old and their two children are grown and financially independent. Mariana's parents passed away earlier this year and left her an inheritance of BRL 8,000,000 after-tax. The Carvalhos have five years remaining on their mortgage and the BRL 55,000 annual mortgage payment will continue to be funded from their investment portfolio. They intend to work another five years and then retire at age 60. Their salaries are expected to continue to cover their living expenses until retirement. Their investment portfolio, including the inheritance, now totals BRL 10,200,000.

  The Carvalhos explain to Oliveira that in retirement, they would like to maintain their current standard of living and start a regular program of donating money to their favorite charities. They also hope to leave an inheritance of BRL 5,000,000 to each of their two children at their death. Oliveira calculates they will need a portfolio value of BRL 15,000,000 when they retire in order to support these goals.

Investor's IPS - Example

- **Case analysis case – 2008 CFA level 3 morning session Q1(Cont'd)**

D. i. Prepare the current return objectives portion of the Carvalhos' IPS.

ii. Calculate the after-tax nominal rate of return that is required for the portfolio. Show your calculations.

Investor's IPS - Example

- **Correct Answer:**

Part D:

i. The revised return objectives for the Carvalhos' portfolio is to:

- Provide for the mortgage on their home;
- Support their living expenses in retirement;
- Support charitable endeavors in retirement;
- Provide a bequest for their children.

ii. The after-tax nominal rate of return is 8.48%. The return is calculated using the following inputs:

Mortgage payments remaining	5
Annual mortgage amount	$55,000
Investment portfolio value (current)	$10,200,000
Investment portfolio value (target)	$15,000,000

Investor's IPS - Example

- **Correct Answer:**

  Part D:

  Using financial calculator, the following figures are used in the calculation when solving for i:

  N=5, PV=10,200,000, PMT=-55,000, FV=-15,000,000, compute i=8.48%

  Or

  N=5, PV=-10,200,000, PMT=55,000, FV=15,000,000, compute i=8.48%

Taxes and Private Wealth Management in a Global Context

112-252

Framework

1. Global taxation regimes
2. Simple Tax Environments
    1. Accrual Taxation
    2. Deferred capital gain tax
    3. Wealth-based taxes
3. Blended Taxing Environments
4. Accrual equivalent tax rates
5. Types of investment accounts
6. The tax effects of trading behavior
7. Tax loss harvesting and HIFO

1.1 Government tax revenue sources

- **Major sources of government tax revenue include：**
  - **Taxes on income.** These taxes apply to individuals, corporations, and often other types of legal entities. For individuals, income types can include **salaries, interest, dividends, realized capital gains, and unrealized capital gains**, among others. Income tax structure refers to how and when different types of income are taxed.
  - **Wealth-based taxes.** These include taxes on the holding of certain types of property (e.g., real estate) and taxes on the transfer of wealth (e.g., taxes on inheritance).
  - **Taxes on consumption.**
    - ✓ **Sales taxes** (which are taxes collected in one step from the final consumer on the price of a good or service)
    - ✓ **Value-added taxes** (which are collected in intermediate steps in the course of producing a good or service but borne ultimately by the final consumer).

1.2 International comparisons of income taxation

- **Progressive ordinary tax rate structure**
  - In a progressive rate structure, the tax rate increases as income increases.

Taxable income ($)		Tax on column 1	Percentage on excess over column 1
Over	Up to		
0	15,000	-	23
15,000	28,000	3,450	27
28,000	55,000	6,960	38

  - If the ordinary income is $ 19,000 , the **marginal tax rate** is 27% and the **average tax rate** is 23.84%.

1.3 General income tax regimes

- **Common progressive regime**
  - This regime has progressive tax rates for ordinary income, but favorable treatment in all three investment income categories: interest, dividends, and capital gains;
  - This was the most common regime observed.
- **Heavy dividend tax regime**
  - This regime has a progressive tax system for ordinary income and favorable treatment for some interest and capital gains but taxes dividends at ordinary rates.
- **Heavy capital gain tax regime**
  - This regime has a progressive tax system for ordinary income and favorable treatment for interest and dividends, but taxes capital gains at ordinary rates.
- **Heavy interest tax regime**
  - This regime has a progressive tax system for ordinary income and favorable treatment for dividends and capital gains, but taxes interest income at ordinary rates.

1.3 General income tax regimes

- **Light capital gain tax regime**
  - This regime has a progressive tax system for ordinary income, interest, and dividends, but favorable treatment of capital gains;
  - This was the second most commonly observed regime.
- **Flat and light regime**
  - This regime has a flat tax system and treats interest, dividends, and capital gains favorably.
- **Flat and heavy regime**
  - This regime has a flat tax system for ordinary income, dividends, and capital gains;
  - It does not have favorable treatment for dividends and capital gains, but has favorable treatment for interest income.

1.3 General income tax regimes

Regime	Ordinary income tax structure	Favorable treatment for interest income?	Favorable treatment for dividend income?	Favorable treatment for capital gains?
Common progressive	Progressive	Yes	Yes	Yes
Heavy dividend tax	Progressive	Yes	**No**	Yes
Heavy capital gain tax	Progressive	Yes	Yes	**No**
Heavy interest tax	Progressive	**No**	Yes	Yes
Light capital gain tax	Progressive	No	No	**Yes**
Flat and light	Flat	Yes	Yes	Yes
Flat and heavy	Flat	**Yes**	No	No

2.1 Simple tax- Accrual taxation

- The amount of money accumulated for each unit of currency invested after *n* years, assuming that returns (after taxes at rate t_i are paid) are reinvested at the same rate of return, *r*, is simply.

$$FVIF_i = [1 + r(1 - t_i)]^n$$

- Taxes are paid each period, so the periodic return on the account is the after-tax return, $r(1 - t_i)]$;
- The amount of tax removed from the account each period does not earn future (compounded) returns.
  - The reduction in return caused by the payment of taxes is referred to as **tax drag.**
  - Tax drag ($)= $FV_{pt} - FV_{at}$
  - Tax drag (%)=$\frac{FV_{pt} - FV_{at}}{FV_{pt} - I_0}$

2.1 Tax drag

- Vladimir Kozloski is determining the impact of taxes on his expected investment returns and wealth accumulations. Kozloski lives in a tax jurisdiction with a flat tax rate of 20 percent which applies to all types of income and is taxed annually. Kozloski expects to earn 7 percent per year on his investment over a 20 year time horizon and has an initial portfolio of €100,000.
  - What is Kozloski's expected wealth at the end of 20 years?
  - What proportion of potential investment gains were consumed by taxes?

2.1 Tax drag

➢ **Correct Answer:**

- $FV = €100,000 \times FVIF_i$

  $= €100,000 \times [1 + 0.07 \times (1 - 0.2)]^{20}$

  $= €297,357$

- Ignoring taxes, FV = €100,000 $[1 + 0.07]^{20}$ = €386,968. The difference between this and the after tax amount accumulated from above is €89,611. The proportion of potential investment gains consumed by taxes was €89,611/€286,968 = 31.23 percent.

2.1 Tax drag of Accrual taxation

- **The impact of investment time and return on tax drag**
  - Tax drag% > tax rate
  - Investment horizon increase => tax drag $ & % increase
  - Investment return increase => tax drag $ & % increase

Tax drag (%)	Investment Horizon (years)							
r (%)	5	10	15	20	25	30	35	40
2	0.308	0.319	0.33	0.34	0.351	0.362	0.373	0.384
4	0.317	0.338	0.359	0.381	0.403	0.425	0.447	0.469
6	0.325	0.356	0.389	0.421	0.454	0.486	0.518	0.549
8	0.333	0.375	0.418	0.461	0.503	0.545	0.584	0.622
10	0.341	0.393	0.446	0.499	0.55	0.598	0.643	0.684
12	0.348	0.411	0.474	0.535	0.593	0.646	0.694	0.737
14	0.356	0.429	0.501	0.569	0.633	0.689	0.739	0.781
16	0.364	0.446	0.526	0.601	0.669	0.727	0.776	0.818
18	0.371	0.462	0.551	0.631	0.701	0.76	0.808	0.848

2.2 Simple tax-Deferred capital gain tax

- Using T_{cg} as the tax rate on capital gains, the after-tax future value interest factor for deferred capital gains ($FVIF_{cg}$) is

$$FVIF_{cg} = (1+r)^n - [(1+r)^n - 1]t_{cg}$$
$$FVIF_{cg} = (1+r)^n(1-t_{cg}) + t_{cg}$$

- Summarizing the same three relationships we examined for accrual taxes, we see that they are quite different when capital gains taxes are applied on a deferred basis
  - Tax drag % = tax rate;
  - As the investment horizon increases ⇒ tax drag% is unchanged;
  - As the investment return increases ⇒ tax drag% is unchanged;
- **In addition, when taxes are deferred**
  - As investment horizon increases ⇒ the value of the tax deferral increases;
  - As investment return increases ⇒ the value of the tax deferral increases.

2.2 Simple tax-Deferred capital gain tax

- We have assumed that the cost basis for computing taxes is the investment's current value ($1,000), as if we invested after-tax dollars.
- However, the cost basis is often different from the investment's current value. For example, the cost basis could be the original purchase price and the current value of $1,000 represents the original cost plus unrealized capital gains.
- All else equal, reducing the cost basis increases the realized capital gain, increases the amount of capital gains taxes due, and reduces the net selling price. Thus we modify our **deferred capital gains tax formula** to account for the basis (B)

$$FVIF_{cgb} = (1+r)^n\left(1-t_{cg}\right) + t_{cg} - (1-B)t_{cg}$$

$$FVIF_{cgb} = (1+r)^n(1-t_{cg}) + Bt_{cg}$$

2.3 Simple tax-Wealth-based taxes

- In some countries, wealth-based taxes are assessed annually (similar to accrual income taxes) on the value of assets held. Unlike accrual taxes and capital gains taxes, which are paid on just the investment return, wealth-based taxes are applied to both the principal and return.
- They are most often applied to real estate, as in the U.K. Fortunately the wealth-based tax rate is usually lower in percentage terms than accrual and capital gains tax rates.
- Continuing the notation from before except that TW is the wealth-based tax rate, **the future value interest factor after the wealth-based tax** ($FVIF_W$) is

$$FVIF_w = [(1 + r)(1 - t_w)]^n$$

2.3 Wealth-based taxes

- Olga Sanford lives in a country that imposes a wealth tax of 1.0 percent on financial assets each year. Her €400,000 portfolio is expected to return 6 percent over the next ten years.
  1. What is Sanford's expected wealth at the end of ten years?
  2. What proportion of investment gains was consumed by taxes?

- **Correct Answer:**

  For question 1: $FV = 400{,}000 \times [1.06 \times (1 - 0.01)]^{10} = 647{,}844$

  For question 2:

  Had the wealth tax not existed, FV = €400,000$(1.06)^{10}$ = €716,339. This sum represents a €316,339 investment gain compared to a €247,844 gain in the presence of the wealth tax. Therefore, the one percent wealth tax consumed 21.65 percent of the investment gain (i.e., (€316,339 − €247,844)/€316,339).

2.3 Tax drag of Wealth-based taxes

- **For wealth-based taxes, the three primary relationships can be summarized as**
  - Tax drag % > tax rate;
  - As investment horizon increases ⇒ tax drag % and tax drag $ increase;
  - As investment return increases ⇒ tax drag $ increases; tax drag % **decreases**.

3. Blend taxing environments

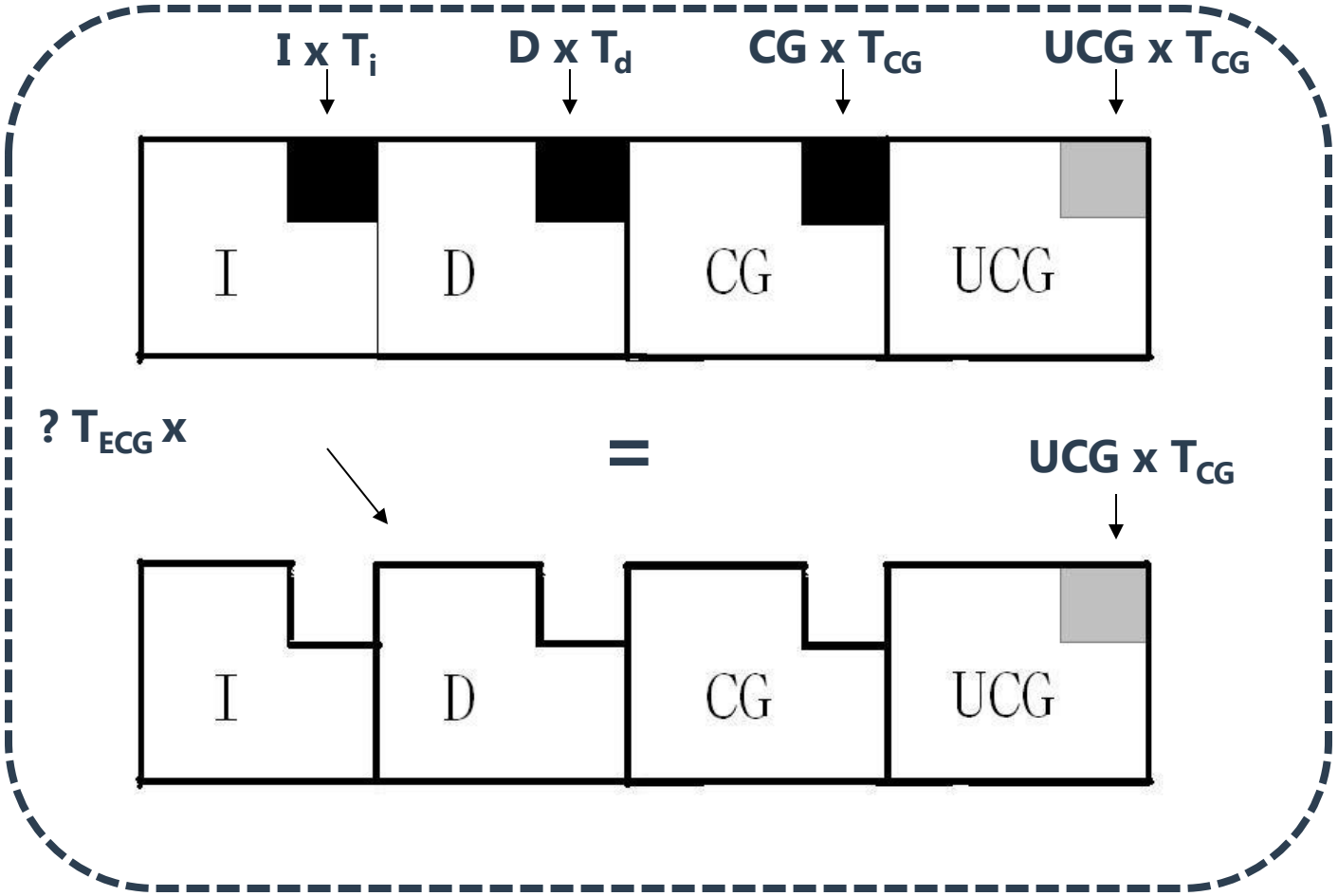
- To calculate the **after-tax return on the account**, we multiply the before tax return (*R*) times 1 minus realized tax rate, which considers the proportion of each form of gain with its specific tax rate

$$realized\ tax\ rate = P_I T_I + P_D T_D + P_{CG} T_{CG}$$

- The realized tax rate is nothing more than the weighted average tax rate paid by the investor. P is the weight (proportion) of each type of return, income, dividend, or realized capital gain, and T is the tax rate on each type of return. Multiplying each tax rate by the related proportion yields the weighted average tax rate;
- Using the same subscripts for the tax rates, T, as for the proportions, P, the annual return after realized taxes on interest income, dividends, and realized capital gains (R_{ART}) is

$$R_{ART} = R_{PT}(1 - realized\ tax\ rate) = R_{PT}[1 - (P_I T_I + P_D T_D + P_{CG} T_{CG})]$$

3. Blend taxing environments



$$T_{ECG}[1-(P_I T_I + P_D T_D + P_{CG} T_{CG})] = T_{CG}[1-(P_I + P_D + P_{CG})]$$

3. Blend taxing environments

- To calculate the effective capital gains tax rate (T_{ECG}) that adjusts for the annual taxes already paid on interest, dividends, and realized capital gains, we use the following

$$T_{ECG}[1-(P_I T_I + P_D T_D + P_{CG} T_{CG})] = T_{CG}[1-(P_I + P_D + P_{CG})]$$

$$T_{ECG} = T_{CG} \frac{[1-(P_I + P_D + P_{CG})]}{[1-(P_I T_I + P_D T_D + P_{CG} T_{CG})]}$$

- Using return after realized taxes (R_{ART}) and the effective deferred capital gains tax rate (T_{ECG}), the future value interest factor considering all taxes as well as the cost basis of the account ($FVIF_T$) is

$$FVIF_T = \left[(1+R_{ART})^N (1-T_{ECG}) + T_{ECG} - (1-B)T_{CG}\right]$$

$$R_{ART} = R(1-\text{realized tax rate}) = R\left[1-(P_I T_I + P_D T_D + P_{CG} T_{CG})\right]$$

Example: Blend tax

- Assume there is a five-year investment horizon for the account. Annual accrual taxes will be paid out of the account each year with the deferred tax on previously unrealized capital gains paid at the end of the five-year horizon. The account is rebalanced annually. Consider a €100,000 portfolio with the return and tax profile listed in table below. What is the expected after-tax accumulation in five years?

Panel A: tax profile		
	Annual distribution rate (*p*)	**Tax rate (*T*)**
Ordinary income (*i*)	5%	35%
Dividends (*d*)	25%	15%
Capital gain (*cg*)	45%	15%
Average return (*r*)		8%

Example: Blend tax

- **Correct Answer:**
  - The annual return after realized taxes, r^*, is $0.08[1 - (0.05)(0.35) - (0.25)(0.15) - (0.45)(0.15)] = 7.02\%$
  - The effective capital gains tax rate, T^*, which equals $0.15[(1 - 0.05 - 0.25 - 0.45)/(1 - 0.05 \times 0.35 - 0.25 \times 0.15 - 0.45 \times 0.15)] = 0.15(0.25/0.8775) = 4.27\%$
  - the cost basis and the current market value portfolio are both €100,000, the cost basis expressed as a percent of current market value is 1.00.
  - The expected future accumulation of the portfolio in 5 years equals $€100,000[(1 + r^*)^n(1 - T^*) + T^* - (1 - B)t_{cg}] = €100,000[(1.0702)^5(1 - 0.0427) + 0.0427 - (1 - 1.00)0.15] = €138,662.$

4. Accrual Equivalent Tax Rates

- **Calculating accrual equivalent tax rates**
  - The accrual equivalent tax rate can be derived from the accrual equivalent return, which is a hypothetical tax rate.
  - $r \times (1 - T_{AE}) = R_{AE} \rightarrow T_{AE} = 1 - \frac{R_{AE}}{r}$
  - The return may receive preferential tax treatment in either the form of a reduced rate for dividends or a reduced rate on realized capital gains combined with valuable deferral for unrealized gains.
  - The accrual equivalent tax rate would increase if
    - ✓ The return had a larger component taxed at ordinary rates;
    - ✓ Dividends and capital gains received less favorable treatment.

4. Accrual Equivalent Returns

- Kharullah has a balanced portfolio of stocks and bonds, and at the beginning of the year, his portfolio has a market value of $100,000, and the portfolio has an after tax accumulation 5 years of $138,662. Calculate the R_{AE} for Kharullah.
- **Correct Answer:**

  $\$100,000*(1+R_{AE})^5=\$138,662$

  $R_{AE}= 6.756\%$

5. Types of investment accounts

- **Types of investment accounts**
  - Sometimes, the types of investment accounts override the tax treatment of an investment based on its asset class;
- **Taxable accounts:** investments are made on an after-tax basis and returns are taxed in a variety of ways;
- **Tax-deferred accounts** allow tax-deductible contributions and/or tax-deferred accumulation of returns, but funds are taxed when withdrawn;

$$FVIF_{TDA} = (1 + r)^{n}(1\text{-}T_{n})$$

- **Tax-exempt accounts** do not allow tax-deductible contributions, but allow tax-exempt accumulation of returns even when funds are withdrawn.

$$FVIF_{TEA} = (1 + r)^{n}$$

5.1 Types of investment accounts

- **Calculation related to each four accounts**
  - **Taxable account**

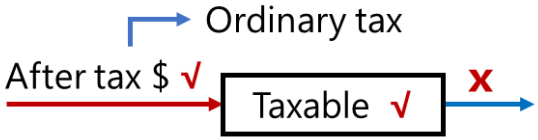
    $FVIF_{AT}=[1+R(1-T_I)]^N$

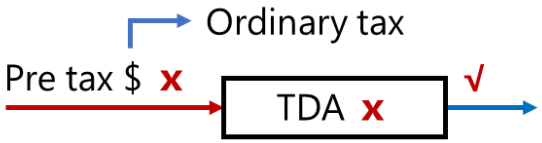
  - **Taxed deferred account**

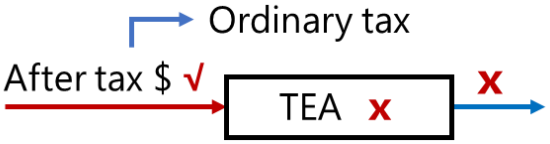
    $FVIF_{TDA}=(1+R)^N\ (1-T_N)$

  - **Tax exempt account**

    $FVIF_{TEA}=(1+R)^N$







- **$FVIF_{TDA}=(1+R)^N(1-T_N)$**
- **$FVIF_{TEA}=(1-T_0)(1+R)^N$**
  - If $T_0 > T_N \Rightarrow FV_{TDA} > FV_{TEA}$
  - If $T_0 = T_N \Rightarrow FV_{TDA} = FV_{TEA}$
  - If $T_0 < T_N \Rightarrow FV_{TDA} < FV_{TEA}$

Example: Choosing Among Account Types

- Bettye Mims would like to invest for retirement and is willing to reduce this year's spending by €3,000. She will invest €3,000 after taxes this year and is in a 25 percent tax bracket, which is the top marginal tax rate in her jurisdiction. Mims is considering three types of accounts but would invest in the same portfolio which is expected to have a pre-tax return of 6 percent annually. If invested in a taxable account the income would be taxed each year at the same 25 percent rate.
- Assuming Mims will make a single contribution today and withdraw all funds—paying any necessary taxes in 30 years—which of the following accounts will result in the largest after-tax accumulation?
  - Account A. A taxable account with an initial investment of €3,000.
  - Account B. A tax deferred account, where Mims can make a €4,000 tax deductible contribution (a €3,000 after tax cost to Mims).
  - Account C. A tax exempt account, where a €3,000 contribution is not deductible.

Example: Choosing Among Account Types

Solution:

- The taxable account would accumulate €11,236 after taxes:
  For A, FV = €3,000[1 + 0.06(1 – 0.25)]^{30} = €11,236

- The tax deferred account would accumulate €17,230 after taxes:
  For B, FV = €4,000[(1 + 0.06)^{30}(1 – 0.25)] = €17,230

- The tax exempt account would also accumulate €17,230 after taxes:
  For C, FV = €3,000[(1 + 0.06)^{30}] = €17,230

- Both B and C achieve the same after-tax accumulation assuming her tax rates in the contribution year and withdrawal year are the same.

5.2 After-Tax Asset Allocation

- Consider, for example, an investor with €1,500,000 worth of stock held in a TDA and €500,000 of bonds held in a tax-exempt account. Withdrawals from the TDA account will be taxed at 40 percent.

Account Type	Asset Class	Pretax Market Value (€)	Pretax Weights (%)	After-Tax Market Value (€)	After-Tax Weights (%)
TDA	Stock	1,500,000	75	900,000	64.3
Tax-Exempt	Bonds	500,000	25	500,000	35.7
Total Portfolio		2,000,000	100	1,400,000	100

5.2 After-Tax Asset Allocation

- **Solutions:**
  - A traditional view of asset allocation based on pretax values would suggest the investor has €2,000,000 of assets, 75 percent of which are allocated in stocks and 25 percent of which are allocated in bonds.
  - In after-tax terms, however, the total portfolio is worth only €1,400,000 because the TDA has a built-in tax liability of €600,000, money the investor cannot spend. Moreover, because the investor is holding stock in the TDA, her after-tax equity exposure is less than a pretax analysis would suggest. Specifically, the after-tax equity allocation is only 64.3 percent rather than 75 percent.

5.2 After-Tax Asset Allocation

- **Solutions:**
  - The notion that a TDA is worth $(1 - T_n)$ times an otherwise equivalent tax-exempt account has implications for after-tax asset allocation, which is the distribution of asset classes in a portfolio measured on an after-tax basis.
  - This simple example excludes taxable accounts and does not depend on an investor's time horizon. Another challenge is improving client awareness, understanding, and comfort with asset allocation from an after-tax perspective.

5.4 Tax Accounts and Investment Risk

- **In taxed account-** the government (taxing authority) bears part of the investment risk;
  - $r_{AT} = r\ (1\text{-}t)$
  - $\sigma_{AT} = \sigma\ (1\text{-}t)$
- **In tax-exempt account** – the investors bears all the investment risk.

Example

- Consider an investor with 50 percent of her wealth invested in equities and 50 percent invested in fixed income, both held in taxable accounts. The equity has a pretax standard deviation of 20 percent and is relatively tax-efficient such that all returns are taxed each year at a 20 percent tax rate.

  The fixed income is also taxed annually but at a 40 percent rate with pretax volatility of 5 percent.

  If the two asset classes are perfectly correlated, what is the pretax portfolio volatility?

Example

- **Correct Answer:**
  - 0.50(0.20) + 0.50(0.05) = 0.125 = 12.5 percent.
  - On an after-tax basis, however, portfolio volatility is 0.50(0.20)(1 − 0.20) + 0.50(0.05)(1 − 0.40) = 0.095 = 9.5 percent.
- **This example illustrates that annually paid taxes reduce portfolio volatility.**

Example

- Recall previous example, suppose that the equity is held in a taxable account and the fixed income is held in a tax-exempt account like those described in the previous section.
  In this case, the investor absorbs all of the bond volatility in the tax-exempt account, and what is the new portfolio volatility?

- **Correct Answer:**
  - The new portfolio volatility is 0.50(0.20)(1 − 0.20) + 0.50(0.05) = 0.105 = 10.5 percent.
  - After-tax volatility increased from the previous measure of after-tax volatility of 9.5 percent because one of the assets (bonds) became tax sheltered. The government therefore absorbed less investment risk through taxes, and the investor is left bearing more investment risk.

6. The Tax Effects of Trading Behavior

- Investors would place in TDAs and tax-exempt accounts those securities that would otherwise be heavily taxed if held in taxable accounts.
- The taxable account would hold lightly taxed assets. The value created by using investment techniques that effectively manage tax liabilities is sometimes called **tax alpha.**
- In most countries the strategy would be to place equity in taxable accounts, because their current income is lower than that for bonds and capital gains can often be deferred. Bonds, with their higher current income, would be placed in a tax-protected account, such as a TDA.

6. The Tax Effects of Trading Behavior

- In addition to examining asset location as a source of tax minimization, we can also examine an investor's trading behavior.
  - **Traders**— trades frequently and recognizes all portfolio returns in the form of annually taxed short term gains.
    - ✓ This equity management style may subject investment returns to tax burdens.
  - **Active investors**— trades less frequently so that gains are longer term in nature, may receive more favorable tax treatment.
  - **Passive investors**—passively buys and holds the stock.
  - **Exempt investors**— not only buys and holds stocks, but he never pays capital gains tax.

7. Tax Loss Harvesting—HIFO

- Depending on the tax system, investors may be allowed **to sell the highest cost basis lots first (HIFO)**, which **defers realizing the tax liability** associated with lots having a lower cost basis.
- Opportunities to create value through tax loss harvesting and HIFO are greater in jurisdictions with high tax rates on capital gains.
  - Tax loss harvesting program can yield substantial benefits;
  - The annual tax alpha is largest in the early years and decreases through time as deferred gains are ultimately realized;
  - The complementary strategies of tax loss harvesting and HIFO tax lot accounting have more potential value when securities have relatively high volatility;
  - However, harvesting losses is not always an optimal strategy.

Reading 30

Estate Planning in a Global Context

149-252

Framework

1. Estate Planning
2. Core Capital
    1. Joint mortality
    2. Monte Carlo Simulation (MCS)
3. Relative after-tax values
4. Estate planning strategy
5. Estate planning tools
6. Relief from double taxation

1. Estate planning

- **Estate planning is the process of preparing for the disposition of one's estate (e.g. the transfer of property) upon death and during one's lifetime.**
  - The core document most closely associated with an estate plan is a will or testament.
    - ✓ A will (or testament) outlines the rights others will have over one's property after death.
  - A testator is the person who authored the will and whose property is disposed of according to the will.
- **Probate** is the legal process to confirm the validity of the **will** so that executors, heirs, and other interested parties can rely on its authenticity.

1.1 Probate

- A decedent without a valid will or with a will that does not dispose of their property is considered to have died intestate.
  - A court will often decide on the disposition of assets under applicable intestacy laws during the probate process.
- Some individuals may wish to avoid probate.
  - Court fees may be sizable, and the process can cause a delay in the transfer of assets to intended beneficiaries;
  - Moreover, many problems can arise in probate when multiple jurisdictions are involved.
- In some instances, probate can be avoided or its impact limited by holding assets in other forms of ownership
  - Joint ownership;
  - Living trusts;
  - Retirement plans.
- Ownership of property is **transferred to beneficiaries** without the need for a will and hence the probate process can be avoided or substantially reduced.

1.2 Wealth transfer taxes

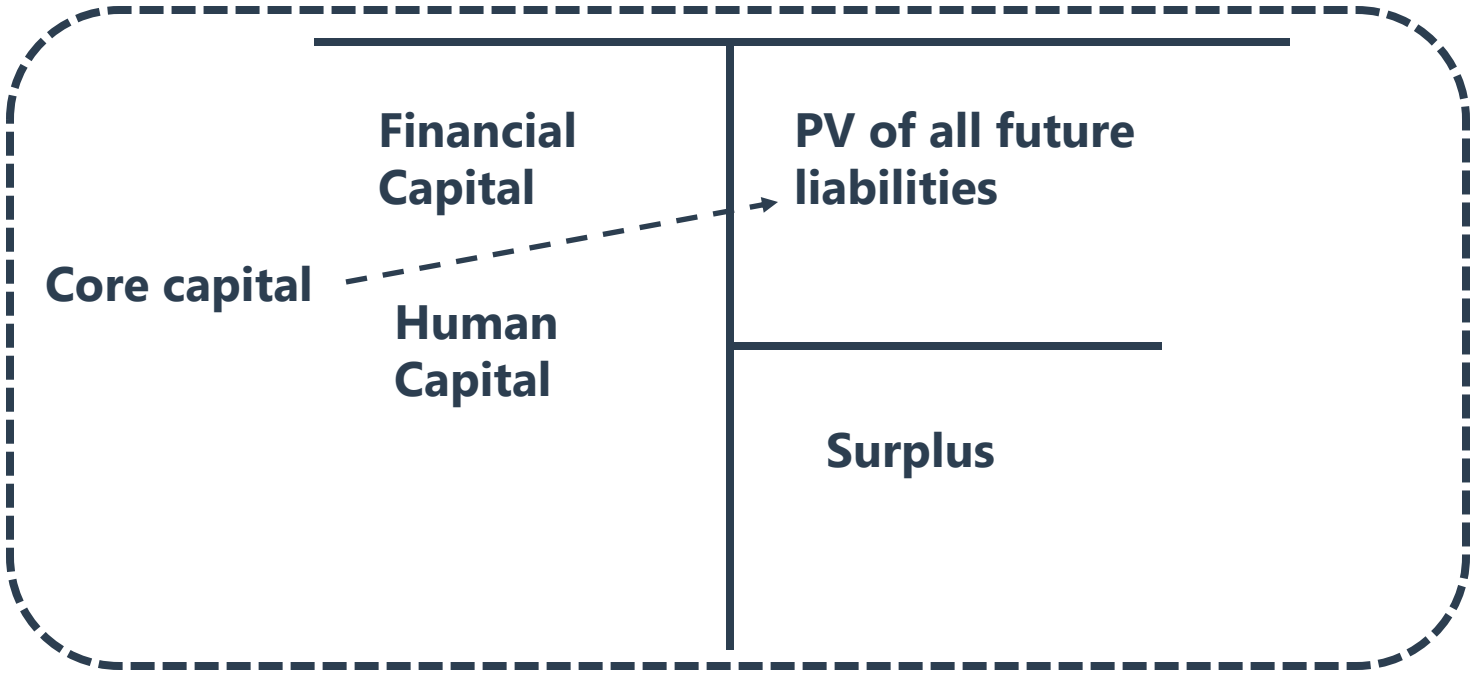
- **Lifetime gifts are sometimes referred to as *lifetime gratuitous transfers*, or *inter vivos* transfers, and are made during the lifetime of the donor.**
  - Gifts may or may not be taxed depending on the jurisdiction.
  - Taxation may also depend on other factors such as
    - ✓ The residency or domicile of the donor;
    - ✓ The residency or domicile of the recipient;
    - ✓ The tax status of the recipient;
    - ✓ The type of asset;
    - ✓ The location of the asset (domestic or foreign).
- **Bequeathing assets or transferring them in some other way upon one's death is referred to as a testamentary gratuitous transfer.**
  - The taxation of testamentary transfers (transfers at death) may depend upon
    - ✓ The residency or domicile of the donor, the residency or domicile of the recipient;
    - ✓ The type of asset;
    - ✓ The location of the asset (domestic or foreign).

1.3 Ownership rights

- **Forced heirship rules**
  - Children have the right to a fixed share of a parent's estate. This right may exist whether or not the child is estranged or conceived outside of marriage;
  - "Claw-back" provisions bring such lifetime gifts back into the estate to calculate the child's share.
- **Community property rights**
  - Each spouse has an indivisible one-half interest in income earned during marriage.
- **Separate property rights**
  - Each spouse is able to own and control property as an individual, which enables each to dispose of property as they wish, subject to a spouse's other rights.

2. Core capital

- **Core Capital is the amount of assets (i.e., present value) necessary to meet all future liabilities**
  - Retirement expenses and any other needs
- **Any amount above core capital is considered excess capital**
  - Excess capital can be transferred to the next generation, charities, etc

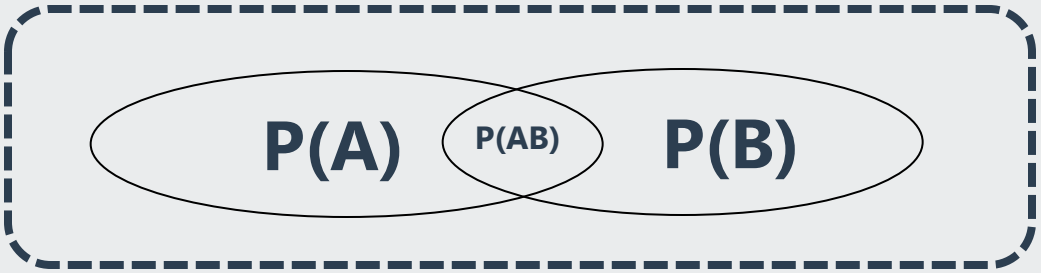


2.1 Core Capital Using a Mortality Table

- Husband and wife currently 79 and 68. From the table the wife has a 98.31% probability of living one more year (to age 69) and 90.25% probability of living 5 more years (to age 73). For the husband the percentages are 93.55 and 66.86, respectively.
  A. Using the table, determine the probability that the husband, wife, or both live 6 years
  B. Using the table, calculate core capital for years if the risk-free rate is 2%
  C. If the family has a portfolio of $1,500,000, determine (based solely on the information provided) the maximum amount they could give to charity
- **Determining the individual's remaining expected life is a major problem**
  - Mortality tables show average remaining years based on attaining a given age

2.1 Core Capital Using a Mortality Table

- **Correct Answer for A:**
  - From the mortality table, we see the probability of surviving 6 years for the husband and wife are 60.01% and 87.85%, respectively. The probability that one or both will survive 6 years (Comb. Prob.) is calculated as follows:
  - = Prob(husband survives) + Prob(wife survives) - Prob(husband survives)*Prob(wife survives) = 0.6001+0.8785-(0.6001)(0.8785) = 95.14%



2.1 Core Capital Using a Mortality Table

- **Correct Answer for B:**
  - The amount of core capital required for 6 years is:

Core Capital 6 years:

$$=\sum_{t=1}^{6}\frac{P(surv_t)(spending_t)}{(1+r)^t};r=\text{real risk-free rate}$$

$$=\frac{P(surv_1)(spending_1)}{(1.02)^1}+\ldots+\frac{P(surv_6)(spending_6)}{(1.02)^6}$$

$$=\$1,153,472$$

Safety Reserve

- **Correct Answer for C:**
  - Mortality tables assume there is 0% probability of living one more than 100 years.
    - ✓ In reality there is a non-zero probability.
  - Mortality rates are based on the averages individual's expected life span.
    - ✓ Your client could live longer than the average number of years.
  - Incorporate a safety reserve into core capital calculations.

Joint Mortality Probabilities and Core Capital

➢ **Correct Answer:**

	Husband		Wife		Comb. Prob.	Real Annual Spending (2% inflation)	Expected Real Spending	Present Value (2% RFR)	Total
Yrs	Age	Prob.	Age	Prob.					
1	80	**0.9355**	69	**0.9831**	0.9989	200,000	199,780	195,863	195,863
2	81	0.8702	70	0.9649	0.9954	204,000	203,062	195,177	391,040
3	82	0.8038	71	0.9457	0.9893	208,080	205,854	193,981	585,021
4	83	0.7339	72	0.9249	0.9800	212,242	207,997	192,157	777,178
5	84	**0.6686**	73	**0.9025**	0.9677	216,286	209,494	189,745	966,923
6	85	**0.6001**	74	**0.8785**	**0.9514**	220,816	210,084	186,549	**1,153,472**

2.2 Monte Carlo Simulation (MCS)

- Often utilized in retirement planning to determine the size of the portfolio required to meet a desired retirement lifestyle;
- The output is a distribution of portfolio sizes along with their respective probabilities of meeting the client's cash flow desires;
- Using different portfolio compositions, distributions of possible macro variable values, and even variable retirement dates, the simulation indicates the probability of each current portfolio allocation meeting the desired portfolio value at retirement;
- The interactions between distribution and sequence of returns can be perceived by Monte Carlo Simulation, which featured as path dependency;
- This represents the **probability of ruin**, or the probability that his spending is unsustainable. This analysis incorporates life-span uncertainty as well as financial market risk(i.e., the probability of depleting one's financial assets before death).

Example: Core Capital with Monte Carlo Analysis

- Sophie Zang is a recent widow, 55-years old, living in Singapore. Upon his passing, her husband's estate and life insurance proceeds provided a total of SGD 2,000,000 to maintain her lifestyle. With no children, Zang has no bequest motives but she has established a charitable remainder trust (CRT) upon which she will rely to maintain her lifestyle in real terms for the rest of her life, with the balance going to her favorite charity upon her death. Assume the trust's asset allocation conforms to the capital market expectations from Exhibit 3.
- How much can Zang withdraw from the CRT if she wants to be at least 98 percent certain that the portfolio will last for the remainder of her life?

Example: Core Capital with Monte Carlo Analysis

- **Solution:**
  - The 55-year old retirement age row in Exhibit 3 indicates that Zang's median age at death is approximately 83 years old, or 28 years away. However, she is as likely to live longer than age 83 as she is to die prior to age 83. To be at least 98 percent certain that she does not run out of money, Zang's maximum probability of exhausting her assets should not exceed 2 percent. A spending rate of $2 per $100 of assets has a ruin probability of 1.8 percent. So Zang can withdraw approximately 0.02 × SGD 2,000,000 = SGD 40,000 with 98% certainty that the portfolio will last for the remainder of her life.

Exhibit 3 Ruin Probability for Balanced Portfolio of 50 Percent Equity and 50 Percent Bonds

Retirement Age	Median Age at Death	Hazard Rate, λ (%)	Real Annual Spending per $100 of Initial Nest Egg								
			$2.00 (%)	$3.00 (%)	$4.00 (%)	$5.00 (%)	$6.00 (%)	$7.00 (%)	$8.00 (%)	$9.00 (%)	$10.00 (%)
Endowment	Infinity	0.00	6.7	24.9	49.0	70.0	84.3	92.5	96.6	98.6	99.4
50	78.1	2.47	1.8	6.4	14.0	24.0	35.2	46.3	56.8	66.0	73.8
55	83.0	2.48	1.8	6.3	14.0	24.0	35.1	46.2	56.7	65.9	73.7
60	83.4	2.96	1.5	5.2	11.6	20.1	29.9	40.1	50.0	59.1	67.2
65	83.9	3.67	1.1	4.0	9.0	15.8	24.0	32.8	41.8	50.5	58.5
70	84.6	4.75	0.8	2.8	6.3	11.4	17.6	24.7	32.2	39.8	47.2
75	85.7	6.48	0.5	1.7	3.9	7.2	11.4	16.3	21.9	27.8	33.9
80	87.4	9.37	0.3	0.9	2.0	3.8	6.2	9.1	12.5	16.3	20.5

3 Relative after-tax values

- In general, the value of making taxable gifts rather than leaving them in the estate to be taxed as a bequest, can be expressed as **ratio** of the after-tax future value of the gift and the bequest, or:
- **The basic Equation of the ratio is**

$$RV_{TaxableGift} = \frac{FV_{Gift}}{FV_{Bequest}} = \frac{\left[1+r_g\left(1-t_{ig}\right)\right]^n\left(1-T_g\right)}{\left[1+r_e\left(1-t_{ie}\right)\right]^n\left(1-T_e\right)}$$

- Considering the following scenarios
  ① Both donor and recipient will not be taxed;
  ② The recipient pays gift tax and the donor's estate will not be taxable;
  ③ The donor pays gift tax and the recipient's estate will not be taxable.

3.1 Tax Free Gift

- Whether we use donor or testator, recipient or beneficiary depends on whether the asset is transferred as a lifetime gift (donor and recipient) or as part of an estate (testator and beneficiary).

$$RV_{\text{tax-free gift}} = \frac{FV_{\text{tax-free gift}}}{FV_{\text{bequest}}}$$

$$RV_{\text{tax-free gift}} = \frac{\left[1+r_g\left(1-t_{ig}\right)\right]^n}{\left[1+r_e\left(1-t_{ie}\right)\right]^n\left(1-T_e\right)} = \frac{2.756226}{1.653735} \simeq 1.67$$

- The tax-free gift is worth 1.67 times the value of the bequest, so it would be better to gift the assets immediately than to leave them to the beneficiary in a will.
- It is generally better to transfer high return assets (i.e., growth investments) to those with the lowest tax rates.
- To efficiently allocate the family's assets, growth investments are gifted to family members with the lowest tax rates and lower return assets are bequeathed as part of the estate.

3.2 Taxable Gift, paid by receiver

- **The formula is as following**

$$RV_{\text{taxable gift}} = FV_{\text{gift}} / FV_{\text{bequest}}$$

$$= \frac{(1-T_g)\times[1+r_g(1-t_{ig})]^n}{[1+r_e(1-t_{ie})]^n\times(1-T_e)}$$

- **3.3** if $r_g=r_e$, $t_{ig}=t_{ie}$

$$RV_{\text{taxable gift}} = \frac{(1-T_g)}{(1-T_e)}$$

Example

- Consider a Japanese family contemplating a JPY 30 million lifetime gratuitous transfer in 2009.
  - JPY 18 million can be transferred free of tax, but the remaining JPY 12 million transfer is subject to a 50 percent tax rate.
  - The same 50 percent rate applies if the gift is delayed and transferred as a bequest, so no tax advantage related to transfer tax rates exists.
  - However, if the recipient of the JPY 12 million gift had a lower marginal tax rate on investment returns (perhaps due to a progressive income tax schedule) of, say, 20 percent compared to the estate's marginal tax rate of, say, 50 percent, the gift can still create a tax advantage.
- Over a ten year horizon, the advantage for locating an asset with an 8 percent pretax return with the donee rather than the donor would be?

Example

- **Correct Answer:**
  - Equation

$$RV_{\text{taxable gift}} = \frac{FV_{\text{gift}}}{FV_{\text{bequest}}} = \frac{[1 + r_g(1 - t_{ig})]^n \times (1 - T_g)}{[1 + r_e(1 - t_{ie})]^n \times (1 - T_e)}$$

$$= \frac{\left[1 + 0.08 \times (1 - 0.2)\right]^{10} \times (1 - 0.5)}{\left[1 + 0.08 \times (1 - 0.5)^{10}\right]^{10} \times (1 - 0.5)} = 1.256$$

  - The lower 20 percent tax rate associated with the gift recipient will create 25.6 percent more wealth in 10 years than if the asset had remained in the estate and been taxed at 50 percent annually for 10 years.

3.4 Taxable Gift, paid by donor

- $RV_{TaxableGift} = \frac{FV_{Gift}}{FV_{Bequest}} = \frac{[1+r_g(\mathbf{1}-t_{ig})]^n[1-T_g+(T_gT_e)]}{[1+r_e(1-t_{ie})]^n(1-T_e)}$
  - TgTe: partial gift tax credit.
    - ✓ represents the tax benefit from reducing the value of the taxable estate by the amount of the gift tax.

3.5 Charitable Gift

- A donor is allowed to take a tax deduction in the amount of the **charitable gift.**
- Value of a gift to charity relative to leaving it in a bequest

$$RV_{\text{charitable donation}} = \frac{FV_{\text{charitable gift}}}{FV_{\text{bequest}}} = \frac{(1+r_g)^n + T_{oi}\left[1+r_e(1-t_{ie})\right]^n (1-T_e)}{\left[1+r_e(1-t_{ie})\right]^n (1-T_e)}$$

  - r_e is pretax return to the estate making the gift;
  - t_{ie} is the effective tax rates on investment return on the estate making the gift;
  - n is the expected time until the donor's death at which point the asset would transfer and be subject to estate tax if it had not been gifted.
  - T_{oi} is the tax rate on ordinary income and represents the current income tax benefit associated with a charitable transfer.
  - T_e is the estate tax if the asset is bequeathed at death;

3.5 Charitable Gift

- **Further explanation on the 2nd term of numerator**

$$RV_{\text{charitable donation}} = \frac{FV_{\text{charitable gift}}}{FV_{\text{bequest}}} = \frac{(1+r_g)^n + T_{oi}\left[1+r_e(1-t_{ie})\right]^n(1-T_e)}{\left[1+r_e(1-t_{ie})\right]^n(1-T_e)}$$

- $T_{oi} = 1 \times T_{oi}$ represents the current income tax benefit because of the charity
- $T_{oi}[\,1 + r_e(\,1 - t_{ie}\,)\,]^n$ represents "tax benefit" invested after n years
- $(\,1 - T_e\,)$ represents after estate tax.

4. Estate Planning Strategy

1. Generation skipping

- Special generation skipping transfer tax is imposed on transfers to, among others, grandchildren or subsequent generations and is intended to produce the same overall tax effect had the assets passed sequentially through two generations.

$$FV_{noskipping} = pv\left[(1+r)^{n1}(1-t)\right]\left[(1+r)^{n2}(1-t)\right]$$

$$FV_{skipping} = pv\left[(1+r)^{N}(1-T_e)\right]$$

$$N = n_1 + n_2$$

- The relative value of skipping generations to transfer capital that is excess for both the first and second generations is $1/(1 - T_1)$ where T_1 is the tax rate of capital transferred from the first to the second generation.

4. Estate Planning Strategy

- **2.Spousal Exemptions.** Most jurisdictions with estate or inheritance taxes allow decedents to make bequests and gifts to their spouses without transfer tax liability.
- **3.Valuation discounts** can be employed to reduce the taxable value of gifts or the estate. Liquidity discount and minority discount. The total discount is subject to court approval and both tend to be inversely related to firm sizes.

5.1 Estate Planning Tools-Trusts

- In a **revocable trust arrangement,** the settlor (who originally transfers assets to fund the trust) retains the right to rescind the trust relationship and regain title to the trust assets.
- **Irrevocable trust** is a trust arrangement wherein the settlor has no ability to revoke the trust relationship.
  - An irrevocable trust structure generally provides greater asset protection from claims against a settlor than a revocable trust.
- **Fixed trust** is a trust structure in which distributions to beneficiaries are prescribed in the trust document to occur at certain times or in certain amounts.
- **Discretionary trust** is a trust structure in which the trustee determines whether and how much to distribute in the sole discretion of the trustee.
- **Spendthrift trusts** can be used to provide resources to beneficiaries who may be unable or unwilling to manage the assets themselves, perhaps because they are young, immature, or disabled.

5.2 Estate Planning Tools-Life Insurance

- **Premiums** paid on life insurance are not usually considered part of the grantor's estate for tax purposes, but are sometimes considered gifts to the beneficiary.
- From a tax perspective, life insurance is afforded beneficial tax treatment in many jurisdictions. In addition, premiums paid by the policy holder are typically neither part of the policy holder's taxable estate at the time of his or her death, nor subject to a gratuitous transfer tax.
- The use of life insurance in combination with a **trust** may be useful if the ultimate beneficiaries (i.e., beneficiaries of the trust) are unable to manage the assets themselves (e.g., in the case of minors, disabilities, or spendthrifts).

6 Tax Jurisdiction

- A country that taxes income as a source within its borders is said to impose **source jurisdiction**, also referred to as a **territorial tax system**.
  - This jurisdiction is derived from the relationship between the country and the source of the income;
  - Countries imposing income tax exercise source jurisdiction.
- Countries may also impose tax based on residency, called **residence jurisdiction,** whereby all income (domestic and foreign sourced) is subject to taxation.
  - In this case, the jurisdiction is derived from the relationship between the country and the person receiving the income;
- **Most countries use a residential tax system.**

6 Double Taxation

- **Residence–residence conflict** means two countries may claim residence of the same individual, subjecting the individual's worldwide income to taxation by both countries.
- **Source–source conflict** means two countries may claim source jurisdiction of the same asset.
  - Both countries may claim that the company income is derived from their jurisdiction;
  - For example, on income from a company situated in country A but managed from country B. Both countries may claim that the company income is derived from their jurisdiction.
- In a **residence-source conflict** an individual is subject to residence jurisdiction and receives income on assets in a foreign country with source jurisdiction.
  - For example, a US citizen owning Singapore situated real estate would be subject to US income tax and Singapore income tax on rental income from the property.

6 Relief from Double Taxation

- **Residence-source conflicts** are the most common source of double taxation and the most difficult to avoid through tax planning without a separate mechanism for relief that can mitigate or eliminate double taxation through either **foreign tax credit provisions** or **double taxation treaties**.
- **A source country is commonly viewed to have primary jurisdiction** to tax income within its borders, **the residence country is typically expected to provide double taxation relief**.

6.1 Foreign Tax Credit Provisions

- A residence country may choose to unilaterally provide its taxpayers relief from residence-source conflicts within its own tax code: credit method, exemption method, or deduction method.
- Under **the credit method ,**the residence country allows a tax credit for taxes paid to a source country. (complete resolution)
  - $T_{\text{credit Method}} = \text{Max}\ (T_{\text{Residence}}, T_{\text{Source}})$
- Under **the exemption method**, the country of residence charges no income tax on income generated in a foreign country. (complete resolution)
  - $T_{\text{exemption Method}} = T_{\text{Source}}$
- Under **the deduction method ,**the individual is only allowed to deduct the amount of taxes paid to the source country. (partial resolution)
  - $T_{\text{Deduction Method}} = T_{\text{Residence}} + T_{\text{Source}}\ (1- T_{\text{Residence}}) = T_{\text{Residence}} + T_{\text{Source}} - T_{\text{Residence}}\ T_{\text{Source}}$

Double Taxation Credit Provisions

- Boris Yankevich is a citizen and resident of Country A and has investments in Country B. The tax rates on investment income and bequests for both countries are listed below. Country A has a residence-based tax system and Country B has a source jurisdiction on income generated within its borders. Country A and Country B have a double tax treaty (DTT) to address this residence-source conflict.

	Country A (%)	Country B (%)
Investment Income Tax	25	40
Estate Tax	50	30

- 1. What is Yankevich's tax rate on investment income under the DTT if it provides for the credit method? How much is remitted to Country A and how much is remitted to Country B?
- 2. What is Yankevich's tax rate on bequests under the DTT if it provides for the exemption method?
- 3. What is Yankevich's tax rate on bequests under the DTT if it provides for the deduction method?

Double Taxation Credit Provisions

- **Correct Answer to 1:**

  Under the credit method, $T_{creditmethod}=Max[T_{residence}, T_{source}]$. Therefore, $T_{creditmethod}=Max[0.25, 0.40]=40\%$. In this case, 40% is remitted to Country B. Nothing is remitted to Country A because it provides Yankevich with a credit for his entire domestic tax liability.

- **Correct Answer to 2:**

  Under the exemption method, the resident country relinquishes the tax jurisdiction, so that the tax rate on bequests would be only 30%, all of which is remitted to Country B.

- **Correct Answer to 3:**

  Under the deduction method, Yankevich receives a home country tax deduction (rather than a credit) for estate taxes paid to Country B. In this case:

  $$T_{deductionmethod}=T_{residence}+T_{source}-T_{residence}T_{source}$$
  $$=0.50+0.30-(0.50 \times 0.30)=0.65$$

  Country A receives 35%, and Country B receives 30%.

6.2 Double Taxation Treaties (DTT)

- **DTT solves:**
  - **Residence-source conflicts**
    - ✓ Interest and dividends taxed in source country by limited withholding tax rates.
    - ✓ Capital gains are taxed in the seller's country of residence.
    - ✓ Gains on immovable property, are taxed in the source country.
  - **Residence-residence conflicts.** For a dual resident taxpayer, OECD model outlines tie-breakers in the following order based on the location of an individual's:
    - ✓ 1. permanent home
    - ✓ 2. center of vital interests
    - ✓ 3. habitual dwelling
    - ✓ 4. citizenship
- DTTs typically **do not resolve** source-source conflicts.

Reading 31

Concentrated Single-Asset Positions

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Framework

1. Concentrated position
   - Risk in illiquid assets
   - Objectives and constraints
   - Psychological consideration
2. Goal-based decision process
3. Asset location and transfer
4. Techniques to manage concentrated position
5. Managing concentrated stock position
6. Privately held business
7. Real estate positions

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1 Concentrated position

- **Concentrated position:**
  - A position that has been held by the private client for a long period, and that has greatly appreciated in value over its original cost (cost basis).
  - Exposures to any of these risks may not be consistent with the individual's willingness and capacity to bear risk or may be suboptimal with respect to asset allocation.
  - Some concentrated positions may not be expected to earn fair risk-adjusted returns.
- **Three asset classes in which concentration risk most commonly arises.**
  - Public stocks
  - Private equity
  - Investment real estate.

1.1 Risks in concentrated position

- **Systematic risk:** risk that cannot be eliminated by holding a well-diversified portfolio. The capital asset pricing model as practically implemented equates systematic risk to equity market risk. More recently developed asset pricing models identify multiple sources of systematic risk.
- **Company-specific risk (non-systematic or idiosyncratic risk)**
  - Risks specific to a particular company's operations, reputation, and business environment, affecting a company but not the industry or market as a whole.
  - An extreme example of company-specific risk: a corporate bankruptcy;
  - Increases volatility not expected return.
- **Property-specific risk:** risk specific to owning a particular piece of real estate. The possibility that the value of that property might fall because of an event that could affect that property but not the broader real estate market.

1.2 Objectives and Constraints

- **Common objectives**
  - Appropriateness **of risk reduction**;
  - **Cash flow needs should be identified**;
  - Optimize tax efficiency: **maximize after-tax return**.
- **Specific objectives and constraints**
  - **Be mandated to hold shares** for a long time period to motivate the executive to work hard.
  - The owner of a concentrated position might wish to **maintain effective voting control** of the company.
  - The owner of a concentrated position might wish to **enhance the current income** of his or her stock position in the short term but in the long term still retain significant upside potential with respect to the stock.
  - The property is an essential asset **necessary for the successful operation of a business enterprise.**

1.2 Other Constraints

- **Simply selling the asset outright will usually trigger an immediate and sometimes significant taxable capital gain for the owner.**
  - Concentrated positions are often highly appreciated versus their original cost.
- **Concentrated positions are generally illiquid**
  - Owners of concentrated publicly traded stock positions may face illiquidity.
    - ✓ If the trading volume of the company's shares is small relative to the size of the concentrated position;
    - ✓ If the shareholder is an insider and the timing or amount of any sales is restricted by applicable securities laws and regulations.
  - Determination of revenue of sale of his or her business
    - ✓ The strategy that is employed;
    - ✓ Who the buyer is.
  - A buyer needs to be found for a particular property, and different classes of potential buyers may place different values on that property.

1.2 Other Constraints

- **The legal relationship** that exists between the owners of a business depends on the type of entity that is being used (e.g., sole trader, partnership, limited partnership, or limited company, among other forms, in the United Kingdom), the laws governing that type of entity, and any documentation or agreements those laws require.
- **Margin lending rules** Margin rules determine how much a bank or brokerage firm can lend against securities positions that their customers own.
  - Under a rule-based system, the amount that can be borrowed against a security that the investor owns will depend on strict rules dealing with the use of the loan proceeds.
  - Portfolio margining is an example of a margin regime that is risk based.
- **Company insiders and executives** must often comply with a myriad of rules and regulations promulgated by governmental authorities.

1.2 Other Constraints

- **Contractual restrictions and employer mandates**
  - Contractual restrictions
    - ✓ Such as initial public offering “lockups”.
  - Employer mandates and policies
    - ✓ Such as a prohibition of trading during certain “blackout periods” (i.e., periods when insiders cannot sell their shares)
  - Can greatly restrict the flexibility of insiders and employees to either sell or hedge their shares.
- **Capital market limitations**
  - Certain characteristics of the underlying stock ultimately determine the feasibility of hedging different concentrated positions and in what degree they can be hedged.

1.3 Psychological consideration

- **Cognitive biases**
  - **Conservatism** (in the sense of reluctance to update beliefs);
  - **Confirmation** (looking for what confirms one's beliefs);
  - **Illusion of control** (the tendency to overestimate one's control over events);
  - **Anchoring and adjustment** (the tendency to reach a decision by making adjustments from an initial position, or "anchor");
  - **Availability heuristic** (the probability of events is influenced by the ease with which examples of the event can be recalled).

1.3 Psychological consideration

- **Emotional biases**
  - **Overconfidence and familiarity** (illusion of knowledge);
  - **Status quo bias** (preference for no change);
  - **Naïve extrapolation of past returns**;
  - **Endowment effect** (a tendency to ask for much more money to sell something than one would be willing to pay to buy it);
  - **Loyalty effects.**
- Comparing to emotional biases, **cognitive biases are more easily** to be corrected.

2. Goal-based decision process

- A **goal-based methodology** expands the traditional Markowitz framework of diversifying market risk by incorporating several notional "risk buckets."
- **Risk buckets and sequence of priority**
  - **First, personal risk bucket**
    - ✓ Goal: protection from poverty or a dramatic decrease in lifestyle;
    - ✓ E.g. Allocate home (primary residence), certificates of deposit, Treasury bills, and other "safe haven" investments;
    - ✓ Limit loss but yield below-market rates of return.
  - **Secondly, market risk bucket**
    - ✓ Goal: maintain the current standard of living;
    - ✓ E.g. stock and bond portfolio.

2. Goal-based decision process

- **Risk buckets and sequence of priority (cont.)**
  - **Thirdly, aspirational risk bucket**
    - ✓ Goal: opportunity to increase wealth substantially
    - ✓ E.g. concentrated positions, including privately owned businesses, investment real estate, concentrated stock positions, stock options, and the like.
- **Implement a goal-based plan**
  - **Primary capital:** whether the proceeds, when combined with the assets the owner already has outside the concentrated position, are at least sufficient to provide for the owner's lifetime spending needs.
  - **Surplus capital:** the sale or monetization will generate even more than the primary capital requirement.
  - Discuss with the client whether the sale or monetization of the concentrated position can achieve financial independence for the owner.

3. Asset location and transfer

- **Asset location (distinct from the asset allocation decision.)**
  - Determines the method of taxation that will apply.
  - What type of account an asset is held within?
  - Location in a tax-deferred account would defer all taxes to a future date.
  - Interest income, dividends and long-term capital gains are all taxed differently in a taxable account.

3. Asset location and wealth transfer

- **Wealth transfer:** estate planning or gifts.
  - Advisers who are able to work with clients ***before*** **the concentrated position has appreciated greatly in value** can have the most impact. No limitation of transferring wealth if there are no unrealized gains.
  - **Donation** to charity is free from taxes.
  - **An estate tax freeze:** transfer future appreciation to the next generation at little or no gift or estate tax cost.
    - ✓ One class is voting preferred;
    - ✓ The other is non-voting common. The non-voting common stock is gifted to the next generation.

4. Techniques to manage concentrated position

- **Outright sale:** Owners can sell the concentrated position, which gives them funds to spend or reinvest but often incurs significant tax liabilities.
- **Monetization strategies:** These provide owners with funds to spend or re-invest without triggering a taxable event. A loan against the value of a concentrated position is an example of a simple monetization strategy.
- **Hedging the value of the concentrated asset:** Derivatives are frequently used in such transactions.

Derivatives used in hedging	
OTC	**Exchange-traded**
• Trade with counterparty (default risk) • Flexible choices	• Standardized liquidity • Function of discover price • Higher fees concerning transparency and transactions

5. Managing concentrated common stocks

- **Equity monetization**
- **Hedging**
- **Yield Enhancement**

5.1 Equity monetization

- **Equity monetization** generally refers to the transformation of a concentrated position into cash.
  - Two-step process
    - ✓ Step 1: Remove a large portion of the risk inherent in the concentrated position.
      - ◆The process of hedging the concentrated stock position could be fraught with complex tax regulations. Care should be taken in structuring the hedge such that the economic incentives (as well as disincentives) of holding the concentrated stock position are not eliminated.
    - ✓ Step 2: borrow against the hedged position.
      - ◆A high loan-to-value (LTV) ratio can be achieved because the stock position is hedged.

5.1 Equity monetization

- **Four techniques**
- Assume an investor owns 1 million shares of ABC Corp. stock and ABC Corp. shares are currently trading at $100 per share. To **establish an exactly offsetting short position** in ABC Corp. shares, the investor could use any of the **four techniques** described below.
  - **1. A short sale against the box:** shorting a security that is held long;
  - **2. A total return equity swap**: a contract for a series of exchanges of the total return on a specified asset in return for specified fixed or floating payments;
    - ✓ The investor and a derivative dealer could agree to an exchange of cash flows based on a $100 million notional amount of ABC Corp. shares.

5.1 Equity monetization

- **3. Options (forward conversion):** the construction of a synthetic short forward position against the asset held long;
  - ✓ The investor could buy ABC Corp. puts and sell ABC Corp. calls with the same strike price (i.e., $100) and the same termination date covering 1 million shares
- **4. A forward sale contract/single-stock futures contract:** a private contract for the forward sale of an equity position.
  - ✓ The investor could agree today to sell her ABC shares to a dealer three years from now.

➢ If the tax authorities of a country respect legal form over economic substance, **equity monetization techniques should not trigger an immediate taxable event for unrealized gains.**

5.2 Lock in Unrealized Gains: Hedging

- **Lock in unrealized gains: hedging**
  - **1. Purchase of puts:** Investors holding a concentrated position can purchase put options to
    - ✓ Lock in a floor price;
    - ✓ Retain unlimited upside potential;
    - ✓ Defer the capital gains tax.
    - ✓ **Methods**
      - **Protective puts**;
      - **A pair of puts**: Long a put at a higher strike price of X_H and short a put at a lower strike price of X_L.
      - **Knock-out put**: the protection "knocks out" or disappears before its stated expiration if the stock price increases to a certain level.

5.2 Lock in Unrealized Gains: Hedging

- **Lock in unrealized gains: hedging (cont.)**
  - **2. Cashless (zero-premium) collars:**
    - ✓ Hedge against a decline in the price of a stock;
    - ✓ Retain a certain degree of upside potential with respect to the stock;
    - ✓ Defer the capital gains tax while avoiding any out-of-pocket expenditure.

5.2 Lock in Unrealized Gains: Hedging

- **Lock in unrealized gains: hedging (cont.)**
  - **3. Prepaid variable forwards (PVF)**
    - ✓ A combination of hedge and margin loan.
    - ✓ E.g. An investor holding ABC Corp. shares currently trading at $100 might enter into a PVF requiring the dealer to pay the investor $88 up front in exchange for the right to receive a variable number of shares from the investor in three years pursuant to that embodies the economics of a particular **collar** (e.g., a long put with a $95 strike and a short call with a $110 strike).

5.2 Lock in Unrealized Gains: Hedging

- **Choosing the best hedging strategy.**
  - Tax attributes and characteristics of the shares or other instrument that is being hedged can influence the decisions
- **Mismatch in character:**
  - Potential tax inefficiency that can result if the instrument being hedged and the tool that is being used to hedge it produce income and loss of a different character.
  - For example, a collar established by long put and short call. The option premium received now from call is taxed at 25% versus a future reduction in long-term gain that would be taxed at 15%.

5.3 Yield Enhancement

- **Yield enhancement**
  - **1. Write covered calls and earn premium as excess return.**
    - ✓ Yield enhancement;
    - ✓ Retain full downside exposure;
    - ✓ Capped the upside potential.
    - ✓ Attractive if the holder believes the stock will be stuck in a trading range.

5.4 Other tools

- **1. Tax-optimization equity strategies**
  - **Index tracking with active tax management**
    - ✓ Funded by cash (from a partial sale of the investor's concentrated stock position or/and the monetization proceeds derived from the hedged stock position) to track a broad-based market on a pre-tax basis and outperform it on an after-tax basis with strategies use opportunistic capital loss harvesting and gain deferral techniques.
    - ✓ E.g. If tax of dividends > capital gains, choose stocks with lower dividend yield and higher price appreciation.
  - **A completeness portfolio**
    - ✓ The combination of the concentrated portfolio and newly added stocks tracks the broadly diversified market benchmark.
    - ✓ E.g. concentrated position in auto stock + other stocks with low correlation of auto stocks.

5.4 Other tools

- **2. Cross hedge**
  - **Short a security or basket of securities** that have the highest correlation with the investor's concentrated stock position.
  - **Short a broad or targeted index** that is investable to serve as the substitute asset. The investor is at least able to hedge market and industry risk. However, the investor retains all of the company-specific risk of the concentrated position.
  - **Purchasing puts on the proxy asset**
- **3. An exchange fund** is an investment fund structured as a partnership in which the partners have each contributed their low-basis concentrated stock positions to the fund. Each partner then owns a pro rata interest in the partnership. (not taxable event; minimum 7 years)

6. Privately held business

- **Characteristic of privately held businesses**
  - Considerable concentration risk;
  - High company specific risks;
  - Illiquidity.
- **Exit strategies**
  - Valuation level of target companies;
  - Tax rate applicable to a particular exit strategy;
  - Condition of the credit markets;
  - Level of interest rates;
  - Amount of buying power in the marketplace (strategic and financial buyers);
  - Currency valuation.

6. Privately held business

- **Strategies in managing a private business equity**
  - **1.Strategic buyers:** Most strategic buyers tend to take a long-term view of their investments in other companies. Because of this fact, they will typically pay the highest price for a business because of potential revenue, cost, and other potential synergies.
  - **2.Private equity firms** (financial buyers/ financial sponsors) make direct investments in mature and stable middle-market businesses and target earning a high internal rate of return over a fairly short period of time (3-5 years).
  - **3.Recapitalization** (attractive to middle-market business)
    - ✓ The owner transfers a portion of her stock (60%-80%) for cash and retains a minority ownership interest (20%-40%) in the freshly capitalized entity. Because of the retained stake, the owner should remain highly motivated to grow the business.

6. Privately held business

- **Strategies in managing a private business equity**
  - **4.Sale to (other) management or key employees**, disadvantages:
    - ✓ Cannot raise sufficient funds to make a serious cash offer.
    - ✓ Finance a substantial amount of the purchase price in the form of a promissory note.
      - ◆**The promissory note** contingent on the financial performance of the company with considerable risk of unknown entrepreneurial capabilities.
    - ✓ A failed attempt to do an MBO (management buyout) has the potential to negatively affect the dynamics of the employer–employee relationship.

6. Privately held business

- **Strategies in managing a private business equity**
  - **5.Divestiture (sale, or disposition of non-core business assets):** If a business owner is not yet ready to retire and wishes to continue to run the business but would like to generate some liquidity now in order to diversify, she/he may consider selling a certain line of business or closing a division.
  - **6.Sale or gift to family members:** Implement through a combination of tax- advantaged gifting strategies, to a family member or members who are typically actively involved in the business. **Existing disadvantages**:
    - ✓ Family members may not have the necessary capital to buy the business. (Same problem as MBO)
    - ✓ Unless the owner has accumulated sufficient investable assets outside the business to sustain his or her desired lifestyle without regard to the business, gifting might not be feasible.

6. Privately held business

- **Strategies in managing a private business equity**
  - **7.Personal line of credit secured by company shares:** The owner might consider arranging a personal loan secured by his or her shares in the private company. This strategy will not cause an immediate taxable event to the company or the owner if structured properly.
  - **8.Initial public offering (IPO):** An IPO should be viewed as a financing tool that can be used to grow and take the company to a new level, assuming the owner wishes to remain actively involved in the company at least for the foreseeable future.
  - **9.Employee stock ownership plan (ESOP):** Sell some or all of his or her company shares to certain types of pension plans. In a leveraged ESOP, if the company has borrowing capacity, the ESOP borrows funds (typically from a bank) to finance the purchase of the owner's shares.

7. Real estate positions

- **Real estate** owners are often exposed to a significant degree of **concentration risk and illiquidity**.
- **Factors determine the attractiveness of the market from the seller's perspective**
  - Current valuation of real estate relative to historical levels and future expectations;
  - Tax rate applicable to a particular property and transaction;
  - Condition of the credit markets and lending conditions;
  - Level of interest rates.

7. Real estate positions

- **Monetization strategies for real estate owners**
  - **Mortgage financing** is used to lower concentration in a particular property and generate liquidity to diversify asset portfolios without triggering a taxable event. With a non-recourse loan (meaning that the lender's only recourse upon an event of default is the property that was mortgaged to the lender), the investor has economically acquired the equivalent of a **put** issued by the lender.
  - **Charitably inclined:** tax advantages created by donor-advised fund (DAF) , tax-exempt charitable trust.
  - **Sale and leaseback:** The owner of a property sells that property and then immediately leases it back from the buyer. The primary goal of a sale and leaseback is to raise capital or free up the owner's equity (that is invested in the property) for other uses while retaining use of the facility. Rental payments for the lease can be deducted before taxed.

Reading 32

Risk Management for Individuals

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Framework

1. Human Capital and Financial Capital
2. The Financial Stages of Life for an Individual
3. The Individual Balance Sheet
4. The Risk Management Strategy for Individuals
5. Individual Risk Exposures
6. Life Insurance
7. Annuities
8. Implementation of Risk Management (Individual)

1. Human capital and financial capital

- **Human capital.** future wages or earnings can be thought of as analogous (in a rough sense) to future interest or dividend payments that flow from an individual's work-related skills, knowledge, experience, and other productive attributes that can be converted into wage income.
- **Financial capital** can be subdivided into various components besides tangible and intangible, such as **current assets, personal assets and investment assets.**

1.1 Human capital

- we can estimate human capital by **discounting** the expected future cash flows generated from wages or other income sources.

$$\mathrm{HC}_0 = \sum_{t=1}^{N} \frac{w_t}{(1+r)^t}$$

Where,

- HC_0, estimate the value of an individual's human capital today, at Time 0;
- w_t, the income from employment in year t;
- r, the appropriate discount rate;
- N, the length of working life in years.

1.1 Human capital

- **The income from different professions can vary significantly.** The risk adjustment should consider the inherent stability of the income stream as well as the possibility that the income stream will be interrupted by job loss, disability, or death that may be completely unrelated to the type of employment. Additionally, we **incorporate mortality**.

$$\mathrm{HC}_0 = \sum_{t=1}^{N} \frac{p(S_t) w_{t-1}(1+g_t)}{(1+r_f+y)^t}$$

Where,

- $w_{t-1}(1+g_t)$, where we define the wage in time period t as a product of the wage in period t – 1 and the sum $(1+g_t)$;
- $1+r_f+y$, modify the discount rate to be the sum of the nominal risk-free rate r_f and a risk adjustment y based on occupational income volatility;
- $p(S_t)$, where $p(S_t)$ is the probability of surviving to a given year (or age).

1.2 Financial capital

- **An individual's assets can be described as "personal" assets or "investment" assets.**
  - **Personal assets** are consumed. Automobile, clothes, furniture and even a personal residence. Real estate and collectibles could be considered a **"mixed"** asset.
  - **Investment assets** are held for their potential to increase in value and fund future consumption.
    - ✓ Marketable
      - Publicly traded marketable assets;
      - Non-publicly traded marketable assets: real estate, some types of annuities, cash-value life insurance, business assets, and collectibles.
    - ✓ Non-marketable assets
      - Employer pension plans (vested);
      - Government pensions.

2. Financial stages of life for an individual

- **1）Education phase：**
  - The education phase occurs while an individual is **investing in knowledge (or human capital)** through either formal education or skill development.
    - ✓ An individual in the education phase may be **largely financially dependent on his or her parents or guardians** and have little, if any, accumulated financial capital.
    - ✓ Generally **little focus on savings or risk management**.
    - ✓ Some individuals in this phase may already have families and could benefit from products, such as life insurance, that hedge against the risk of losing human capital.

2. Financial stages of life for an individual

- **2）Early career：**
  - The early career phase normally begins when an individual has **completed his or her education and enters the workforce**.
    - ✓ The individual often marries, perhaps has young children, may purchase a home, and usually begins to save for their children's college expenses.
    - ✓ Significant family and housing expenses may **not allow for much retirement savings**.
    - ✓ **Insurance may be especially valuable** during this phase because human capital represents such a large proportion of total wealth and family members are highly dependent on the human capital of one or two individuals to fund expected future consumption.

2. Financial stages of life for an individual

- **3）Career development：**
  - The career development phase normally occurs during the **35–50 age range** and is often a time of specific skill development within a given field, upward career mobility, and income growth.
    - ✓ This phase often **includes accumulation for the children's college educations as well as expenditures for college**.
    - ✓ Concern intensifies about retirement income planning and financial independence.
    - ✓ Higher earners will begin building wealth beyond education and retirement objectives and may make large purchases.
    - ✓ **Retirement saving tends to increase at a more rapid pace** during this phase compared with the early career phase.

2. Financial stages of life for an individual

- **4）Peak accumulation：**
  - In the peak accumulation phase, most people either have **reached or are moving toward maximum earnings** and have the greatest opportunity for wealth accumulation. Generally during the ages of 51–60.
    - ✓ This phase may include accumulating funds for other goals and objectives. (continuation of retirement income planning, coordination of employee benefits with investment and retirement strategies, and travel）
    - ✓ Investors following a life-cycle portfolio strategy will begin to **reduce investment risk** to emphasize income production for retirement and become increasingly **concerned about minimizing taxes, given higher levels of wealth and income**.
    - ✓ There is also potentially **more career risk** in this phase because if an individual were to lose his or her job, it might be relatively difficult for that individual to find another job with similar pay.

2. Financial stages of life for an individual

➢ **5）Pre-retirement：**

- The pre-retirement phase consists of the few years preceding the planned retirement age, and it typically represents an individual's **maximum career income**.
  - ✓ Many people in this phase continue to **restructure their portfolios to reduce risk and may consider investments that are less volatile**.
  - ✓ There is further emphasis on **tax planning**, including the ramifications of retirement plan distribution options.

2. Financial stages of life for an individual

➢ **6）Early retirement：**

- The early retirement phase in the cycle is generally defined as the **first 10 years of retirement** and, for successful investors, often represents a period of comfortable income and sufficient assets to meet expenses.
  - ✓ This is generally the most active period of retirement and is when an individual is **less likely to suffer from cognitive or mobility limitations**.
  - ✓ The primary objective of the retiree is to use resources to produce activities that provide enjoyment.
  - ✓ It is important to note that upon entering retirement, the need for asset growth does not disappear.
  - ✓ For many households, the length of retirement could exceed two decades; given this potential horizon, it is important to continue **taking an appropriate level of investment risk** in retirees' portfolios.

2. Financial stages of life for an individual

- **7）Late retirement：**
  - The late retirement phase is especially unpredictable because the exact length of retirement is unknown. This uncertainty about longevity for a specific individual is known as **longevity risk**, which is the risk that retirement could be very short or very long.
    - ✓ Although many individuals live comfortably and are in good health until their final days, others experience a long series of physical problems that can deplete financial asset reserves.
    - ✓ Cognitive decline can **present a risk of financial mistakes**, which may be hedged through the participation of a **trusted financial adviser or through the use of annuities**.

2. Financial stages of life for an individual

- **Two additional concerns may be appropriate to any financial stage.**
  - First, depending on the family situation, the need to provide for long-term health care may become apparent.
  - Second, some people may need to devote resources to care for parents or a disabled child for an extended period of time.

2. Financial stages of life for an individual

Stages	Age	Features
Education	<18	• largely financially dependent on his or her parents or guardians • little financial capital • little focus on savings or risk management
Early career	18-35	• usually begins to save for their children's college expenses • significant family and housing expenses may not allow for much retirement savings • insurance may be especially valuable
Career development	35-50	• accumulation for the children's college educations • concern intensifies about retirement income planning and financial independence • retirement saving tends to increase at a more rapid pace

2. Financial stages of life for an individual

Stages	Age	Features
Peak accumulation	51-60	• investors following a life-cycle portfolio strategy will begin to reduce investment risk • concerned about minimizing taxes, given higher levels of wealth and income • potentially more career risk
Pre-retirement	few years before retirement age	• restructure their portfolios to reduce risk • tax planning
Early retirement	first 10 years of retirement	• need for asset growth does not disappear • taking an appropriate level of investment risk in retirees' portfolios
Late retirement	before death	• longevity risk • cognitive decline can present a risk of financial mistakes

3. Net worth

- An individual's **net worth** consists of the difference between traditional assets and liabilities that are reasonably simple to measure, such as investment assets, real estate, and mortgages.
- **Net wealth** extends *net worth* to include claims to future assets that can be used for consumption, such as human capital and the present value of pension benefits.

3. Individual balance sheet

- **Traditional balance sheet** includes A/L that are easy to quantify.

Assets		**Liabilities**	
Liquid Assets		Short-Term Liabilities	
Checking account	€ 35,000	Credit card debt	€ 25,000
Certificates of deposit	€ 100,000	Total short-term liabilities	€ 25,000
Total liquid assets	€ 135,000		
Investment Assets		Long-Term Liabilities	
Taxable account	€ 750,000	Car loan*	€ 25,000
Retirement plan	€ 600,000	Home mortgage	€ 500,000
Cash value of life insurance	€ 25,000	Home equity loan	€ 90,000
Total investment assets	€ 1,375,000	Total long-term liabilities	€ 615,000
Personal Property			
House	€ 2,200,000		
Cars	€ 160,000		
House contents	€ 150,000		
Total personal property	€ 2,510,000		
Total Assets	€ 4,020,000	Liability	€ 640,000
		Net worth	€ 3,380,000

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3. Individual balance sheet

- **Economic (holistic) balance sheet** allows an individual to anticipate how available resources can be used to fund consumption over the remaining lifetime. discuss risks (earnings, premature death, longevity, property, liability, and health risks) in relation to human and financial capital.

Assets		**Liabilities**	
Financial capital	€ 4,020,000	Debts	€ 640,000
Liquid assets		Credit card debt	
Investment assets		Car loan	
Personal property		Home mortgage	
		Home equity loan	
Human capital	€ 1,400,000	Lifetime consumption needs (present value)	€ 4,200,000
Pension value	€ 500,000		
		Bequests	€ 400,000
Total Assets	€ 5,920,000	Total Liabilities	€ 5,240,000
		Net Wealth	€ 680,000

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4. Risk management strategy for individuals

- **Risk management for individuals** is the process of identifying threats to the value of household assets and developing an appropriate strategy for dealing with these risks.
- **There are typically four key steps in the risk management process**
  - Specify the objective.
  - Identify risks.
  - Evaluate risks and select appropriate methods to manage the risks.
    - ✓ Risk avoidance;
    - ✓ Risk reduction;
    - ✓ Risk transfer (insurance);
    - ✓ Risk retention (self-insurance).
  - Monitor outcomes and risk exposures and make appropriate adjustments in methods.

4. Risk management strategy for individuals

- **For individual**
  - The decision to retain risk or to manage risk through insurance or annuities is determined by a household's risk tolerance.
  - Optimal risk management strategies are as follows.

Risk Management Techniques		
Loss characteristics	High frequency	Low frequency
High severity	Risk avoidance	Risk transfer
Low severity	Risk reduction	Risk retention

5. Individual risk exposures

- **Risk exposures**
  - **Earnings risk (insure with disability insurance)**: the risks associated with the earning potential of an individual—that is, events that could negatively affect the individual's human and financial capital.
  - **Premature death risk (insure with life insurance)**: the risk of the death of an individual earlier than anticipated whose future earnings, or human capital, were expected to help pay for financial needs and aspirations of the individual's family.
  - **Longevity risk (insure with annuities)**: the uncertainty surrounding how long retirement will last and specifically the risks associated with living to an advanced age in retirement (e.g., age 100).
  - **Property risk (insure with property insurance)**: the possibility that a person's property may be damaged, destroyed, stolen, or lost.
  - **Liability risk (insure with liability insurance)**: the possibility that an individual or household may be held legally liable for the financial costs associated with property damage or physical injury.
  - **Health risk (insure with health insurance)**: the risk and implications associated with illness or injury.

6. Life insurance

- **Life insurance** protects against the loss of human capital for those who depend on an individual's future earnings.
- **Use of life insurance**
  - A hedge against the risk of the premature death of an earner;
  - An important estate-planning tool;
  - A tax-sheltered savings instrument.
- **Types of life insurance**
  - **Temporary life insurance** provides insurance for a certain period of time specified at purchase (term life insurance);
  - **Permanent life insurance** provides lifetime coverage, assuming the premiums are paid over the entire period.
    - ✓ **Whole life insurance** remains in force for an insured's entire life;
    - ✓ **Universal life insurance** is constructed to provide more flexibility than whole life insurance.

6. Life insurance

- **Whole life insurance** remains in force for an insured's entire life and requires regular, ongoing fixed premiums.
  - Can be divided into two subgroups
    - ✓ **Participating life insurance policies** allow potential growth at a higher rate than the guaranteed value, based on the profits of the insurance company.
    - ✓ **A non-participating policy** is one with fixed values: The benefits will not change based on the profits and experience of the insurance company.
- **Universal life insurance** is constructed to provide more flexibility than whole life insurance.
  - The policy owner, generally the insured, has the ability to pay higher or lower premium payments and often has more options for investing the cash value. The insurance will stay in force as long as the premiums paid or the cash value is enough to cover the policy expenses of the provider.

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6. Life insurance

- **The basic elements of a life insurance policy**
  - The **term** and type of the policy (e.g., A 20-year temporary insurance policy);
  - The amount of benefits (e.g., £100,000);
  - Limitations under which the death benefit could be withheld (e.g., If death is by suicide within two years of issuance);
  - The **contestability period** (the period during which the insurance company can investigate and deny claims);
  - The identity (name, age, gender) of the **insured**;
  - The policy **owner** (generally needs to have an insurable interest in the life of the insured);
  - The **beneficiary** or beneficiaries;
  - The premium schedule (the amount and frequency of premiums due);
  - Modifications to **coverage** (保额) in any **riders** to the policy.

6. Life insurance

- **The basic elements of a life insurance policy**
  - **Elimination/waiting** period
  - **Non-forfeiture** clause: 不丧失现金价值
  - **Guaranteed insurability**

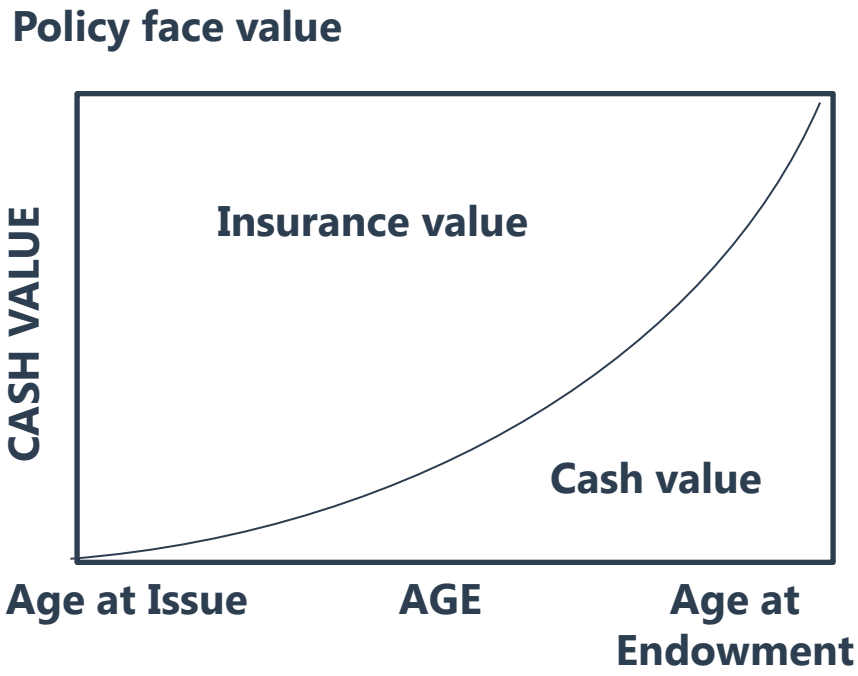
6. Life insurance

- **Three key considerations in the pricing of life insurance**
  - **Mortality expectations:** Actuaries at insurance companies estimate mortality based on both historical data and future mortality expectations. Generally speaking, life expectancies in most regions of the world have been increasing. Certain attributes, such as age and gender, are obvious factors in evaluating life expectancy. To avoid adverse selection and undercharging for the risk assumed.
  - The **net premium** of a life insurance policy represents the discounted value of the future death benefit.
    - ✓ A probability of 0.15% of dying within the year, death benefit $100,000, discount rate 5.5%. Net premium = (0.15%*$100,000 + 99.85% * $0)/1.055= $142.18
  - The **gross premium** adds a load to the net premium, allowing for expenses and a projected profit for the insurance company.

6. Cash value and policy reserves

- Although initial premiums are higher, whole life policies offer the advantage of level premiums and an accumulation of cash value within the policy that
  - Can be withdrawn by the policy owner when the policy endows (or matures) or when he or she terminates the policy;
  - Can be borrowed as a loan while keeping the policy in force.
- These cash values build up very slowly in the early years, during which the company is making up for its expenses.

Build-up of cash value in a whole life insurance policy



6. Life Insurance Costs

- **Net premium cost index (per $1000 of face value, per year)**

FV of premium
-FV of dividend
= FV of net payment
↓
CPT PMT
↓

$$\text{Net premium cost index} = \frac{\text{PMT}}{\text{coverage}/1000}$$

- **Surrender cost index (per $1000 of face value, per year)**

FV of premium
-FV of dividend
-cash value
= FV of net payment
↓
CPT PMT
↓

$$\text{Surrender cost index} = \frac{\text{PMT}}{\text{coverage}/1000}$$

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7. Annuities

- **Deferred variable annuities**: In its most basic form, a deferred variable annuity is similar to a mutual fund, although it is structured as an insurance contract and typically sold by someone licensed to sell insurance products.
- **Deferred fixed annuities:** Deferred fixed annuities provide an annuity payout that begins at some future date.

7. Annuities

- **Immediate variable annuities:** With an immediate variable annuity, the individual permanently exchanges a lump sum for an annuity contract that promises to pay the annuitant an income for life.
- **Immediate fixed annuities:** The most common and the most utilized type of annuity, an individual trades a sum of money today for a promised income benefit for as long as he or she is alive.
- **Advanced life deferred annuities:** The final type of annuity that we discuss is a hybrid of a deferred fixed annuity and an immediate fixed annuity. An ALDA's payments begin later in life, for example, when the individual turns 80 or 85. pure longevity insurance.

7. Annuities

- **Relative advantages and disadvantages of fixed and variable annuities**
  - **Volatility of benefit amount:** Fixed annuities provide a constant income stream that is guaranteed not to change, whereas the income from a variable annuity could change considerably depending on the terms of the annuity payout.
  - **Flexibility: The flexibility of an annuity varies materially** with the type of annuity and its individual features.
  - **Future market expectations:** A fixed annuity locks the annuitant into a portfolio of bond-like assets at whatever rate of return exists at the time of purchase. This scenario creates some interest rate risk because the value of these underlying securities will fall if interest rates rise.
    - ✓ **Mortality credits**: Some individuals will die before, and some after, their expected lifespan. Annuitants who die earlier collect fewer payouts, effectively subsidizing those who die later. That is why insurance is called risk sharing or transfer.

7. Annuities

- **Relative advantages and disadvantages of fixed and variable annuities**
  - **Inflation concerns:** Inflation can have a significant negative impact on the real income received from a fixed annuity. For example, if annual inflation averages 3%, after approximately 24 years, the income would be worth approximately half as much as it was worth when the annuity began.
  - **Payout methods:** The payout methods available from an annuity are similar regardless of whether the annuity is fixed or variable, including joint life, period-certain annuity, life annuity with period certain (确保最少年份数), and life annuity with refund.
  - **Annuity benefit taxation:** In some locations, annuities can offer attractive tax benefits, such as tax-deferred growth.
  - **Appropriateness of annuities:** The individual can choose either to receive periodic withdrawals from an investment portfolio (i.e., not annuitize) or to purchase an annuity (i.e., annuitize).
  - **Fees:** The fees associated with variable annuities tend to be higher than those for fixed annuities (the costs of hedging market risk, administrative expenses, and reduced price competition).

7. Other types of insurance

- **Disability income insurance** is designed to mitigate earnings risk as a result of a disability, which refers to the risk that an individual becomes less than fully employed because of a physical injury, disease, or other impairment.
  - Waiver of premium：投保人免缴保险费
- **Property insurance** is used by individuals to manage property risk . The primary areas to cover are the home/ residence and the automobile.
- **Health/Medical** Insurance is highly dependent on the country of residence. In certain countries, health care is governmentally funded and there is no private health insurance. In others, there is a two-tiered system, with governmental coverage for everyone and upgraded coverage for additional payments.
- **Liability insurance** is used to manage liability risk.

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8. Implementation of risk management

- **For individual**
  - The effect of human capital on asset allocation policy
    - ✓ For **equity-like** human capitals: less aggressive portfolio;
    - ✓ For **bond-like** human capitals: more aggressive portfolio;
    - ✓ For **younger**: more equities;
    - ✓ For **older**: more bonds.
  - The risk faced with the individuals can be classified as
    - ✓ **Idiosyncratic risks** include the risks of a specific occupation, the risk of living a very long life or experiencing a long-term illness, and the risk of premature death or loss of property;
    - ✓ **Systematic risks** affect all households. For example, a diversified investment portfolio of risky assets will be exposed to the systematic risk that the overall market will fall in value.

It’s not the end but just beginning.

By training your thoughts to concentrate on the bright side of things, you are more likely to have the incentive to follow through on your goals. You are less likely to be held back by negative ideas that might limit your performance.

试着训练自己的思想朝好的一面看，这样你就会汲取实现目标的动力，而不会因为消极沉沦停滞不前。

问题反馈

- 如果您认为金程**课程讲义/题库/视频**或其他资料中**存在错误，欢迎您告诉我们**，所有提交的内容我们会在最快时间内核查并给与答复。
- **如何告诉我们？**
  - 将您发现的问题通过电子邮件告知我们，具体的内容包含：
    - ✓ 您的姓名或网校账号
    - ✓ 所在班级（eg.2111CFA三级长线无忧班）
    - ✓ 问题所在科目（若未知科目，请提供章节、知识点）和页码
    - ✓ 您对问题的详细描述和您的见解
  - 请发送电子邮件至：academic.support@gfedu.net
- **非常感谢您对金程教育的支持，您的每一次反馈都是我们成长的动力**。后续我们也将开通其他问题反馈渠道（如微信等）。