

# Private Wealth Management

## CFA三级培训项目

讲师:

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## Reading 28

### Overview of Private Wealth Management

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### Case: Noémie Acor

- Noémie Acor works for an international bank as a private wealth adviser. Acor speaks several regional languages in addition to her native language. She prepares for two client meetings next week. First, Acor will meet with Winifred Njau, who has recently retired. Njau has made a charitable pledge to a non-profit university endowment, the Udharni Fund. Acor prepares a draft of the investment objectives section of an investment policy statement (IPS) for Njau using selected client information, which is presented in Exhibit 1.

**Exhibit 1 Selected Client Information Items for Njau**

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

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## Case: Noémie Acor



- Acor's notes from her previous meeting with Njau indicate the following behavioral considerations related to Njau's retirement planning:
  - Njau would like to increase her level of spending if supported by investment projections.
  - Although Njau could pay a lump sum and receive a series of fixed payments, she prefers not to lose control over her assets.
  - Njau understands the risk-return relationship and is willing to accept some short-term losses to achieve long-term growth.

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## Case: Noémie Acor



- Next, Acor reviews a recent risk tolerance questionnaire completed by Njau, which relates to overall portfolio risk. Acor focuses on the type of capital sufficiency analysis to perform for Njau. To determine the optimal allocation, Acor seeks to ensure that Njau's charitable pledge can be met and implements a goal-based investing approach. Acor runs a Monte Carlo simulation to determine the probability of success, which is the likelihood that Njau can meet her charitable pledge objective. The simulation results are presented in Exhibit 2.

**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

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## Case: Noémie Acor



- One week after this meeting, the bank sends a client satisfaction survey to Njau. In response to questions about Acor's soft skills and technical skills, Njau responds with the following comments:

**Comment 1** Acor constructed a portfolio that is appropriate for my unique situation.

**Comment 2** Acor spoke to me in my own regional language throughout the meeting.

**Comment 3** Acor educated me about how my investments perform and affect my portfolio.

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## Case: Noémie Acor



- Acor's second meeting will be with Thanh Bañuq. Bañuq is Njau's nephew and serves on the board of directors of Udharnini. Acor obtained the essential facts about Bañuq when she opened his account, including his risk and return objectives and the origin of his wealth. In preparation for the meeting, Acor considers the high level of taxes that Bañuq pays. Acor will recommend changing the asset location of high-dividend-paying equities that Bañuq owns from a taxable account to a retirement account with tax-free earnings and withdrawals.

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## Case: Noémie Acor



- During their meeting, Acor and Bañuq discuss charitable pledges that Udharnini has recently received and the likelihood that Njau will meet her charitable pledge. Bañuq then asks Acor the following question:
- "How might my investment objectives and constraints differ from those of a typical university endowment, such as Udharnini?"
- The day after Acor's meeting with Bañuq, Acor realizes that her actions in the meeting may have raised an ethical concern.

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## Case: Noémie Acor



- Based on Exhibit 1, which of the following items is Acor most likely to include in the section of the IPS she is drafting for Njau?
  - A. Moderate risk tolerance
  - B. 40% allocation to equities
  - C. \$500,000 charitable pledge in 15 years

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## Case: Noémie Acor



### ➤ Solution: C

Acor is preparing a draft of the investment objectives section of an IPS for Njau. Investment objectives include identifying funding needs and goals for the portfolio. So, Acor should include the \$500,000 charitable pledge to Udhagini in 15 years in the investment objectives section of the IPS. Njau's goal is specific and is an important part of the investment objectives that will drive the preparation of the remainder of the IPS and the execution of the investment strategy.

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## Case: Noémie Acor



- Based on Acor's notes from her previous meeting with Njau, the behavioral consideration exhibited by Njau is most likely:
  - A. a consumption gap.
  - B. the "annuity puzzle."
  - C. heightened loss aversion.

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## Case: Noémie Acor



### ➤ Solution: B

The "annuity puzzle" describes the phenomenon that retirees tend to avoid annuity investments, which may be appropriate to best help them reach their financial goals. An annuity provides a series of fixed payments, either for life or for a specified period, in exchange for a lump sum payment. Njau's reluctance to lose control over her assets by paying the lump sum in exchange for the fixed payments is one explanation for her reluctance, and she may also believe that an annuity would minimize the chance of a substantial improvement in her lifestyle.

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## Case: Noémie Acor



- Acor's portfolio allocation for Njau is most likely optimized on the basis of:
  - A. a stated maximum level of volatility.
  - B. total portfolio mean-variance efficiency.
  - C. the results of the risk tolerance questionnaire.

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## Case: Noémie Acor



### ➤ Solution: A

Acor uses the goal-based investing approach by allocating with a focus on Njau's charitable pledge to Udharni. With this method, she seeks to optimize Njau's portfolio so that the pledge goal has a high probability of being met. Acor will set aside a required amount of funds to invest, and a mean-variance optimization will be run specifically for that portion of Njau's portfolio. The funds will be invested to a stated maximum level of volatility to meet the charitable need.

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## Case: Noémie Acor



- 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%.

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➤ **Solution: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 Udharnini is \$500,000, she has a slightly greater than 50% probability of meeting or exceeding her charitable pledge goal in Year 15.

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## Case: Noémie Açor



- Which comment in Njau's response to the client satisfaction survey best describes a soft skill exhibited by Acor?
- Comment 1
  - Comment 2
  - Comment 3

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## Case: Noémie Acor



➤ **Solution:C**

Acor's ability to effectively educate Njau by showing Njau how her investments perform and affect her portfolio is a soft skill. Soft skills involve interpersonal relationships and include communication skills, social skills, education and coaching skills, and business development and sales skills.

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## Case: Noémie Acor



- Acor's recommendation regarding asset location in Bañuq's portfolio is most likely an example of tax:
  - A. deferral.
  - B. reduction.
  - C. avoidance.

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## Case: Noémie Acor



### ➤ Solution:C

Changing the location of high-dividend-paying equities away from Bañuq's taxable account to a retirement account with tax-free earnings and future liquidity events is an example of a tax avoidance strategy. Implementing this asset location change will eliminate the taxes that Bañuq would have been required to pay on investment income and gains in this account.

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## Case: Noémie Acor



- The most appropriate response to Bañuq's question is that he has:
  - A. a shorter time horizon.
  - B. less significant tax considerations.
  - C. less diverse investment objectives.

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➤ **Solution: A**

As a private client, Bañuq is more likely to have a shorter time horizon than that of Udhagini. Thus, Bañuq is likely to be more constrained with respect to risk taking and liquidity. A typical university endowment has a long time horizon, which can theoretically be infinite.

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## Case: Noémie Acor



- The ethical concern that Acor most likely raised is:
- KYC.
  - suitability.
  - confidentiality.

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## Case: Noémie Acor



➤ **Solution: C**

The confidentiality standard is likely a concern because Acor may have shared confidential private information about Njau and her finances when she discussed Njau's charitable pledge with her nephew, Bañuq. Standard III(E): Preservation of Confidentiality obliges wealth managers who possess highly personal and sensitive client information to maintain confidentiality. Keeping confidential information private may be challenging for Acor since she manages the portfolios of both family members.

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# Reading 29

## Taxes and Private Wealth Management in a Global Context



### Case: Alan Jackson

- Alan Jackson has a new client, Aldo Motelli, who expects taxable ordinary income (excluding investments) of €200,000 this tax year. Motelli currently has €250,000 in a taxable investment account for which his main objective is retirement in 15 years. He is considering making the maximum investment of €10,000 in a new type of tax deferred account permitted in his country of residence. The contribution would be deductible and distributions are expected to be taxed at a 20 percent rate when withdrawn. The income tax structure of his country is:

Taxes on Investment Income	
Interest	10% flat rate
Dividends	10% flat rate
Realized capital gains	10% flat rate



### Case: Alan Jackson

Taxes on Ordinary Income				
Taxable Income (€)		Tax on Column 1 (€)	Percentage on Excess Over Column 1	
Over	Up to			
0	20,000	—	10	
20,000	40,000	2,000	15	
40,000	60,000	5,000	20	
60,000	80,000	9,000	25	
80,000	100,000	14,000	30	
100,000		20,000	35	



## Case: Alan Jackson



- What is Motelli's average tax rate on ordinary income?
  - 22.5%.
  - 27.5%.
  - 35.0%.

- **Solution: B**

Motelli's tax liability on ordinary income is €20,000 (on the first €100,000, third column of table, last row) + (€200,000 – €100,000) × 0.35, or €55,000. The average tax rate on ordinary income is €55,000/€200,000, or 27.5 percent.

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## Case: Alan Jackson

- If Motelli's current investment account of €250,000 is invested in an asset which is expected to earn annual interest of 6.5 percent and no capital gains, what is his expected after tax accumulation in 15 years?
  - €578,664.
  - €586,547.
  - €642,960.

- **Solution: B**

The after tax wealth accumulation for annually taxable income is

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

$$FV = €250,000 \times FVIF_i = €250,000 \times [1 + 0.065(1 - 0.10)]^{15} = €586,547$$

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## Case: Alan Jackson

- What is the accrual equivalent return assuming the facts in Question 2?
  - 5.85%.
  - 6.50%.
  - 7.22%.

- **Solution: A**

The accrual equivalent return is found by the following equation:

$$€250,000(1 + R_{AE})^{15} = €586,547$$

$$R_{AE} = 5.85\%$$

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## Case: Alan Jackson



- If Motelli's current investment account of €250,000 is invested in an investment which is expected to earn a return of 7.5 percent, all of which are deferred capital gains, what is his expected after-tax accumulation in 15 years? The account's market value is equal to its cost basis.
- A. €640,747.  
B. €665,747.  
C. €690,747.

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## Case: Alan Jackson



➤ **Solution: C**

The after tax wealth accumulation for deferred capital gains is

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

$$FVIF_{cg} = €250,000 \times [(1 + 0.075)15(1 - 0.1) + 0.1] = €690,747$$

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## Case: Alan Jackson



- If Motelli's current investment account of €250,000, has a cost basis of €175,000, and is invested in an investment which is expected to earn a return of 7.5 percent, all of which are deferred capital gains, what is his expected after tax accumulation in 15 years?
- A. €673,247.  
B. €683,247.  
C. €690,747.

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➤ **Solution: B**

The after tax wealth accumulation for deferred capital gains is

$$FVIF_{cg} = (1 + r)n(1 - t_{cg}) + t_{cg} - (1 - B)t_{cg}$$

$$FVIF_{cg} = €250,000 \times [(1 + 0.075)15(1 - 0.1) + 0.1 - (1 - 0.70)(0.10)] = €683,247$$

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# Case: Alan Jackson



- How much after-tax wealth would Motelli accumulate assuming the same facts as in Question 4 except that 50 percent of all capital gains are recognized each year?
- €640,747.
  - €665,747.
  - €678,158.

➤ **Solution: C**

$$r^* = r(1 - p_{cg}t_{cg}) = 0.075(1 - (0.5)(0.10)) = 0.075(1 - 0.05) = 0.07125$$

$$T^* = t_{cg}(1 - p_{cg})/(1 - p_{cg}t_{cg}) = 0.10[(1 - 0.5)/(1 - 0.5 \times 0.10)] = 0.052632$$

$$FVIF_{Taxable} = (1 + r^*)^n(1 - T^*) + T^* - (1 - B)t_{cg}, B = 1$$

$$FV = €250,000 \times [(1 + 0.07125)^{15}(1 - 0.052632) + 0.052632] = €678,158$$

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# Case: Alan Jackson



- Assuming an annual return of 7.5 percent, what would be the after-tax wealth accumulated in 15 years for a single current contribution to the TDA? Assume the contribution would be deductible but taxed at the end of 15 years at a 20 percent tax rate.
- €23,671.
  - €23,965.
  - €29,589.

➤ **Solution: A**

$$FVIF_{TDA} = (1 + r)^n(1 - T_n)$$

$$FVIF = €10,000[(1 + 0.075)^{15}(1 - 0.20)] = €23,671$$

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# Reading 32

## Risk Management for Individuals

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### Case: Richard Lansky

-  Richard Lansky is an insurance and wealth adviser for individuals. Lansky's first meeting of the day is with Gregory Zavris, age 27, a new client who works as a journalist. Gregory's only asset is \$5,000 in savings; he has \$67,000 in liabilities. During the conversation, Lansky describes the concepts of financial capital and human capital, as well as the components of economic and traditional balance sheets. Gregory asks Lansky:
  - On which balance sheet are my future earnings reflected?
- Gregory does not have medical insurance. He asks Lansky for advice regarding a policy that potentially would allow him to avoid paying for office visits related to minor medical problems.

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### Case: Richard Lansky

- In the afternoon, Lansky meets with Gregory's parents, Molly and Kirk, ages 53 and 60. Molly is a tenured university professor and provides consulting services to local businesses. Kirk is a senior manager for an investment bank. Lansky determines that Molly's income is more stable than Kirk's.
- Kirk and Molly discuss estate planning, and Lansky recommends a whole life insurance policy on Kirk's life, with Molly responsible for paying the premiums. In the event of Kirk's death, Gregory would be entitled to the proceeds from the policy. Lansky explains that one feature of the policy provides for a portion of the benefits to be paid even if a premium payment is late or missed.

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## Case: Richard Lansky



- Molly tells Lansky that she has recently been reading about annuities and would like to clarify her understanding. Molly makes the following statements.
  - Statement 1: Both deferred and immediate annuities provide the same flexibility concerning access to invested funds.
  - Statement 2: The income yield for a given amount invested in a life-only immediate annuity is higher for an older person than for a younger person.

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## Case: Richard Lansky



- At the end of the consultation, Molly asks Lansky for advice regarding her retired aunt, Rose Gabriel, age 69. Molly believes that Gabriel's life annuity and pension benefits will provide enough income to meet her customary lifestyle needs. Gabriel lives in her mortgage-free home; her medical insurance plan covers basic health care expenses. Women in Gabriel's family generally have long life spans but often experience chronic health problems requiring extended nursing at home. Therefore, Molly is concerned that medical expenses might exceed Gabriel's net worth during her final years.

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## Case: Richard Lansky



- Gregory's human capital is:
  - A. lower than his financial capital.
  - B. equal to his financial capital.
  - C. higher than his financial capital.
- **Solution: C**

Gregory is in the early career stage of life, and human capital represents a large proportion of his total wealth. Gregory is relatively young; therefore, the present value of his expected earnings implies positive human capital. Furthermore, Gregory's savings are rather low, so his financial capital is small. Consequently, his human capital is greater than his financial capital.

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## Case: Richard Lansky



- The *most* appropriate response to Gregory's balance sheet question is:
  - the economic balance sheet only.
  - the traditional balance sheet only.
  - both the economic and the traditional balance sheets.

- **Solution: A**

The present value of expected future earnings is reflected on an economic balance sheet but not on a traditional balance sheet.

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## Case: Richard Lansky



- Given Gregory's policy preference, which type of medical insurance should Lansky recommend?
  - Indemnity plan
  - Preferred provider plan
  - Health maintenance organization plan

- **Solution: C**

A health maintenance organization plan is a type of medical insurance that allows office visits at no, or very little, cost. Gregory would like to avoid paying for office visits related to minor medical problems; hence this alternative is the most appropriate.

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## Case: Richard Lansky



- In estimating Molly's human capital value, Lansky should apply an income volatility adjustment that is:
  - less than Kirk's.
  - the same as Kirk's.
  - greater than Kirk's.

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### ➤ Solution: A

The income volatility adjustment reflects the fact that income from different professions can vary significantly. Molly works in an industry that has low correlation with the capital markets; she also earns income from an additional source. Kirk works in an industry that has high correlation with capital markets, and so he might experience higher income variability than Molly. Consequently, in estimating Molly's human capital, the income volatility adjustment for Molly should be lower than Kirk's.

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- Regarding the whole life insurance policy recommended by Lansky, Kirk would be the:
  - A. owner.
  - B. insured.
  - C. beneficiary.

### ➤ Solution: B

The policy would be on Kirk's life; his death would trigger the insurance payment. Therefore, Kirk would be the insured.

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- The whole life insurance policy feature described by Lansky is a:
  - A. non-forfeiture clause.
  - B. waiver-of-premium rider.
  - C. guaranteed insurability rider.

### ➤ Solution: A

The whole life insurance policy feature described is a non-forfeiture clause, whereby there is the option to receive some portion of the benefits if premium payments are missed (i.e., before the policy lapses).

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## Case: Richard Lansky



- Which of Molly's statements about annuities is/are correct?
  - A. Statement 1 only
  - B. Statement 2 only
  - C. Both Statement 1 and Statement 2

➤ **Solution: B**

Statement 2 is correct because, all else equal, the income yield is higher when expected longevity is shorter; therefore, the income yield will be higher for an older person.

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## Case: Richard Lansky



- The type of insurance that will *best* address Molly's concern about Gabriel is:
  - A. disability insurance.
  - B. longevity insurance.
  - C. long-term care insurance.

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## Case: Richard Lansky



➤ **Solution: C**

Molly is concerned about a potential late-life medical condition that may require extended home care for Gabriel. Long-term care insurance is designed to cover a portion of the cost of home care, assisted living facilities, and/or nursing home expense. Gabriel has enough resources to cover her living expenditures, but her medical insurance might be insufficient to cover the costs of extended home care, medicine, or hospital stays. Consequently, long-term care insurance is the most appropriate insurance choice given Gabriel's situation.

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## Case: Henri Blanc



- Henri Blanc is a financial adviser serving high-net-worth individuals in the United States. Alphonse Perrin, age 55, meets with Blanc for advice about coordinating his employee benefits with his investment and retirement planning strategies.
- Perrin has adopted a life-cycle portfolio strategy and plans to retire in 10 years. Recently, he received a promotion and \$50,000 salary increase to manage a regional distribution center for a national retail firm. Perrin's spending needs are currently less than his annual income, and he has no debt. His investment assets consist of \$2,000,000 in marketable securities (90% equity/10% fixed income) and a vineyard with winery valued at \$1,500,000.

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## Case: Henri Blanc



- Blanc leads Perrin through a discussion of the differences between his financial capital and his human capital, as well as between his traditional balance sheet and his economic balance sheet. Perrin is vested in a defined benefit pension plan based on years of service and prior salary levels. Future benefits will vest annually based on his new salary. Perrin makes the following statements regarding his understanding of pension benefits.
  - Statement 1: Unvested pension benefits should be classified as human capital.
  - Statement 2: Vested pension benefits should not be classified as financial capital until payments begin.

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## Case: Henri Blanc



- Perrin asks Blanc to compare his traditional and economic balance sheets. Blanc calculates that the sum of the present values of Perrin's consumption goals and bequests exceeds that of his unvested pension benefits and future earnings.
- Perrin tells Blanc that he expects a slower rate of growth in the US economy. Perrin expresses the following concerns to Blanc.
  - Concern 1: Holding all else equal, I wonder what the effect will be on my human capital if the nominal risk-free rate declines?
  - Concern 2: My employer projects a slower rate of sales growth in my region; therefore, I am anxious about losing my job.

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- Perrin is a widower with three adult children who live independently. Perrin's oldest son wishes to inherit the vineyard; the two other children do not want to be involved. Perrin would like to accommodate his children's wishes; however, he wants each child to inherit equal value from his estate. Blanc explains potential uses of life insurance to Perrin and suggests that one of these uses best meets Perrin's immediate needs.

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## Case: Henri Blanc



- Perrin expresses a preference for a life insurance policy that provides a range of investment options. Perrin selects a policy and asks Blanc to calculate the net payment cost index (per \$1,000 of face value, per year), using a life expectancy of 20 years and a discount rate of 5%. Table 1 provides information about Perrin's policy.

**Table 1. Perrin's Life Insurance Policy**

Face value	\$500,000
Annual premium (paid at beginning of the year)	\$12,000
Policy dividends anticipated per year (paid at end of the year)	\$2,000
Cash value projected at the end of 20 years	\$47,000

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## Case: Henri Blanc



- Which of Perrin's statements regarding his pension is/are correct?

- Statement 1 only
- Statement 2 only
- Both Statement 1 and Statement 2

➤ **Solution: A**

Unvested pension benefits are typically contingent on future work and are thus considered to be part of human capital. Statement #2 is incorrect: vested pension benefits can be considered components of financial capital.

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- Blanc's calculations show that Perrin's economic net worth is:
  - less than his net worth.
  - equal to his net worth.
  - greater than his net worth.

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## Case: Henri Blanc



### ➤ Solution: A

Economic net worth is calculated as follows:

Economic net worth = Net worth from the traditional balance sheet + (Present value of future earnings + Present value of unvested pension benefits) – (Present value of consumption goals + Present value of bequests)

Perrin's economic net worth is less than his net worth because the sum of the present values of consumption and bequests is greater than the sum of the present values of future earnings and unvested pensions.

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## Case: Henri Blanc



- In response to Perrin's Concern #1, human capital will *most likely*:
  - decrease.
  - remain the same.
  - increase.

### ➤ Solution: C

Human capital,  $HC_0$ , is calculated as follows:

$$HC_0 = \sum_{t=1}^N \frac{p(s_t)w_{t-1}(1+g_t)}{(1+r_f+y)^t}$$

Holding all else equal as Perrin directs, a reduction in the nominal risk-free rate,  $r_f$ , would decrease the total discount rate, thus increasing the present value of human capital.

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## Case: Henri Blanc



- Perrin's Concern #2 identifies a risk related to:
  - human capital only.
  - financial capital only.
  - both human and financial capital.

- **Solution: C**

The projected slowdown in his employer's sales growth may result in Perrin's unemployment, indicating that he may be subject to earnings risk. Human capital would be reduced by the loss of future earnings and halt accrual of pension benefits at Perrin's present employer. Financial capital could also be affected because assets may need to be sold to make up for any loss of income.

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## Case: Henri Blanc



- Which of the following uses of life insurance *best* meets Perrin's immediate needs?
  - Provides estate liquidity
  - Acts as a tax-sheltered savings instrument
  - Replaces lost earning power for dependents

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## Case: Henri Blanc



- **Solution: A**

Life insurance best meets Perrin's immediate need for estate liquidity. A life insurance policy can provide liquidity without the delay involved in the legal process of settling the estate. This liquidity can be particularly valuable if the estate contains illiquid assets or assets that are difficult to separate and distribute equitably among heirs. Currently, it would be difficult to separate and equitably distribute Perrin's financial assets to his three children such that the oldest son inherits the vineyard and winery while keeping the other two children uninvolved because the business is worth more than one-third of Perrin's investment assets. The problem of separating and equitably distributing the estate exists presently regardless of the value of Perrin's personal property.

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- The type of life insurance *most appropriate* for Perrin is:
  - term.
  - universal.
  - whole life.

➤ **Solution: B**

Perrin's estate distribution plan indicates a need for estate liquidity funded by permanent insurance that can remain in force until his death. Perrin prefers a policy that offers a range of investment options. Universal life is thus most appropriate because it is a form of permanent insurance that can remain in force until Perrin's death and typically has more options for investing the cash value than do whole life policies.

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# Case: Henri Blanc

- The net payment cost index that Blanc should calculate is *closest* to:
  - \$17.48.
  - \$20.00.
  - \$20.19.

➤ **Solution: C**

The net payment cost index assumes that the insured will die at the end of a specified period—in this case, the given life expectancy of 20 years. Calculating the net payment cost index includes the following steps.

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# Case: Henri Blanc

<b>Future value of premiums (annuity due, 5%, 20 years)</b>	<b>\$416,631.02</b>
Financial calculator operations: N = 20, I = 5, PV = 0, PMT = -12,000, mode = begin: FV → 416,631.02	
<b>Future value of dividends (ordinary annuity, 5%, 20 years)</b>	<b>(\$66,131.91)</b>
N = 20, I = 5, PV = 0, PMT = 2,000, mode = end: FV → -66,131.91	
<b>20-Year insurance cost</b>	<b>\$350,499.11</b>
<b>Annual payments for insurance cost (annuity due, 5%, 20 years)</b>	<b>(\$10,095.24)</b>
N = 20, I = 5, PV = 0, FV = 350,499.11, mode = begin: PMT → -10,095.24	
<b>Net payment cost index (\$10,095.24/500)</b>	<b>(\$20.19)</b>

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## Case: Adrian and Olivia Barksdale



- Adrian and Olivia Barksdale live in Australia with their 16-year-old twins. Adrian, 47, works in a highly cyclical industry as an engineering manager at a bauxite mine. Olivia, 46, is an accountant. The Barksdales are saving for their retirement and college funding for both children. Adrian's annual salary is A\$190,000; Olivia's annual salary is A\$85,000. The family's living expenses are currently A\$95,000 per year.
- Both Adrian and Olivia plan to work 18 more years, and they depend on their combined income and savings to fund their goals. The Barksdales' new financial adviser, Duncan Smith, recommends an appropriate disability insurance policy to cover Adrian, given his large salary. Because he has a highly specialized job, Adrian is willing to pay for the most comprehensive policy available.

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## Case: Adrian and Olivia Barksdale



- Smith is also concerned about the Barksdales' existing life insurance coverage. Currently, the Barksdales have a term life policy insuring Adrian with a death benefit of A\$100,000. Smith assesses the family's insurance needs in the event Adrian were to die this year. To do so, Smith uses the needs analysis method based on the financial data presented in Exhibit 1 and the following assumptions:
  - The discount rate is 6.0%, and the tax rate is 30%.
  - Salary and living expenses grow at 3.5% annually.
  - Salary and living expenses occur at the beginning of each year.

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## Case: Adrian and Olivia Barksdale



- The following assumptions apply in the event of Adrian's death:
  - ✓ Olivia will continue to work until retirement;
  - ✓ Family living expenses will decline by \$30,000 per year;
  - ✓ Olivia's projected living expense will be \$50,000 per year for 44 years; and
  - ✓ The children's projected living expenses will be \$15,000 per year for 6 years.

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## Case: Adrian and Olivia Barksdale



### Exhibit 1. Barksdale Family Financial Needs Worksheet

Cash Needs	AUD (A\$)
Final expenses and taxes payable	20,000
Mortgage retirement	400,000
Education fund	300,000
Emergency fund	30,000
<b>Total cash needs</b>	<b>750,000</b>
Capital Available	
Cash and investments	900,000
Adrian: Life insurance	100,000
<b>Total capital available</b>	<b>1,000,000</b>

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## Case: Adrian and Olivia Barksdale



- Next, Smith discusses the advantages and disadvantages of annuities. The Barksdales are interested in purchasing an annuity that offers the following characteristics:
  - a payout that begins at retirement,
  - the ability to invest in a menu of investment options, and
  - a payout that continues as long as either Olivia or Adrian is living.
- Olivia's mother, Sarah Brown, is also a client of Smith. She is age 75 and retired, and she needs a known income stream to assist her with current and future expenses. Brown's parents both lived longer than average, and she is concerned about outliving her assets. Smith recommends an annuity.

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## Case: Adrian and Olivia Barksdale



- The Barksdales also worry about longevity risk given their family history and healthy lifestyle. Both spouses want an annuity for their later years (beginning in 40 years) that will ensure the greatest supplemental, level income stream relative to the cost. The Barksdales are willing to forgo the right to cash out the policy.
- Smith turns to a discussion about the Barksdales' investment portfolio and how total economic wealth (human capital plus financial capital) might affect asset allocation decisions. The Barksdales' human capital is valued at \$2.9 million and estimated to be 35% equity-like. Smith determines that an overall target allocation of 40% equity is appropriate for the Barksdales' total assets on the economic balance sheet.

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## Case: Adrian and Olivia Barksdale



- Smith makes two recommendations regarding the Barksdales' investment portfolio.
  - Recommendation 1: The portfolio should have lower risk than a portfolio for similar investors in the same lifestyle stage.
  - Recommendation 2: The portfolio should underweight securities having a high correlation with bauxite demand.

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## Case: Adrian and Olivia Barksdale



- Based on Adrian's job and salary, the *most appropriate* disability policy would define disability as the inability to perform duties of:
  - A. any occupation.
  - B. Adrian's regular occupation.
  - C. any occupation for which Adrian is suited by education and experience.
- **Solution: B**

The most comprehensive policy would define disability as the inability to perform Adrian's regular occupation. For professionals with specialized skills, policies that use regular occupation are generally preferred even though they are more expensive. Mr. Barksdale works in a specialized, high-paying occupation, and the family depends on his income.

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## Case: Adrian and Olivia Barksdale



- Based on the given assumptions and the data in Exhibit 1, the additional amount of life insurance coverage needed is *closest* to:
  - A. A\$0.
  - B. A\$331,267.
  - C. A\$2,078,101.

- **Solution: B**

The additional amount of life insurance coverage needed is calculated as the difference between the family's total financial needs and total capital available.

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## Case: Adrian and Olivia Barksdale



**Total financial needs are calculated as follows.**

Cash Needs	AUD (A\$)
Final expenses and taxes	20,000
Mortgage retirement	400,000
Education fund	300,000
Emergency fund	30,000
<b>Total cash needs</b>	<b>750,000</b>
Capital Needs	Present Value
Olivia's living expenses, 44 years	1,377,175
Children's living expenses, 6 years (Olivia's income, 18 years)	84,848
Total capital needs	-880,756
<b>Total financial needs</b>	<b>1,331,267</b>

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## Case: Adrian and Olivia Barksdale



Capital needs are determined as the present value of an annuity due: growth rate = 3.5%, discount rate = 6.0%. Growth of payments is incorporated by adjusting the discount rate to account for the growth rate of earnings. As long as the discount rate is larger than the growth rate, the adjusted rate  $i$  can be calculated as follows:  $[(1 + \text{Discount rate})/(1 + \text{Growth rate})] - 1$ , or  $i = (1.06/1.035) - 1 = 2.42\%$ .

**The present value of Olivia's living expenses is calculated as follows:**

$\text{PMT} = -\$50,000; i = 2.42\%, n = 44$ . Set for payments at beginning of year.  $\text{PV} = \$1,377,175$ .

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## Case: Adrian and Olivia Barksdale



**The present value of the children's living expenses is calculated as follows:**

$\text{PMT} = -15,000; i = 2.42\%, n = 6$ . Set for payments at beginning of year.  $\text{PV} = \$84,848$ .

**The present value of Olivia's income is calculated as follows:**

$\text{PMT} = -\$85,000 \times (1 - \text{Tax rate}); \text{PMT} = \$85,000 \times 0.70 = 59,500; i = 2.42\%, n = 18$ . Set for payments at beginning of year.  $\text{PV} = -\$880,756$ .

**Total capital needs are calculated as follows:**

$\$1,377,175 + \$84,848 - \$880,756 = \$581,267$ . Adding this amount to total cash needs of \$750,000 results in total financial needs of \$1,331,267.

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## Case: Adrian and Olivia Barksdale



The total capital available is calculated as follows.

Capital Available	AUD (A\$)
Cash and investments	900,000
Current life insurance	100,000
<b>Total capital available</b>	<b>1,000,000</b>

The additional life insurance need is calculated as follows.

Total financial needs	1,331,267
Total capital available	1,000,000
<b>Life insurance shortfall (excess)</b>	<b>331,267</b>

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## Case: Adrian and Olivia Barksdale

- Based on the Barksdales' annuity preferences, which type of annuity should they purchase?
  - A. Deferred fixed
  - B. Deferred variable
  - C. Immediate variable
- **Solution: B**

The Barksdales want an annuity with a deferred payout (beginning at retirement) and an ability to invest in a diversified mix of securities. Most deferred variable annuities offer a diversified menu of potential investment options, whereas a fixed annuity locks the annuitant into a portfolio of bond-like assets at whatever rate of return exists at the time of purchase.

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## Case: Adrian and Olivia Barksdale

- Based on the Barksdales' annuity preferences, which annuity payout method should they choose?
  - A. Joint life annuity
  - B. Life annuity with refund
  - C. Life annuity with period certain
- **Solution: A**

A joint life annuity best addresses the Barksdales' goal of receiving a payout as long as either of them is alive. Under a joint life annuity, two or more individuals, such as a husband and a wife, receive payments until all beneficiaries die.

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## Case: Adrian and Olivia Barksdale



- Based on Brown's goals and concerns, which type of annuity should Smith recommend for her?
  - A. Deferred fixed
  - B. Immediate fixed
  - C. Immediate variable

- **Solution: B**

With immediate fixed annuities, Brown will trade a sum of money today for a promised income benefit for as long as she is alive. Brown is already age 75 and is concerned about longevity risk; she wants a known income stream currently and in the future. Therefore, an immediate fixed annuity is the most appropriate choice.

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## Case: Adrian and Olivia Barksdale



- Which type of annuity *best* satisfies the Barksdales' desire for supplemental income in their later years?
  - A. Deferred fixed
  - B. Deferred variable
  - C. Advanced life deferred

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## Case: Adrian and Olivia Barksdale



- **Solution: C**

In contrast to an immediate payout annuity, an advanced life deferred annuity's (ALDA's) payments begin later in life—for example, when the individual turns 80 or 85. An ALDA would provide the greatest supplemental level income relative to the cost because the payments are made far in the future, life expectancy is shorter when the payments begin, and some policyholders will die without receiving payments.

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## Case: Adrian and Olivia Barksdale



- Based on Exhibit 1, and meeting the Barksdales' target equity allocation for total economic wealth, the financial capital equity allocation should be *closest to*:
- 35.0%.
  - 54.5%.
  - 56.1%.

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## Case: Adrian and Olivia Barksdale



➤ **Solution: C**

The equity allocation of the Barksdale's financial capital is calculated as follows:

Total economic wealth = Human capital + Financial capital = \$2,900,000 + \$900,000 = \$3,800,000.

Target equity allocation of total economic wealth =  $\$3,800,000 \times 40\% = \$1,520,000$

Human capital equity allocation =  $\$2,900,000 \times 35\% = \$1,015,000$

Financial capital equity allocation =  $\$1,520,000 - \$1,015,000 = \$505,000$

% Financial capital equity allocation = Financial equity allocation/Total financial capital =  $\$505,000/\$900,000 = 0.5611$ , or 56.1%

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## Case: Adrian and Olivia Barksdale



- Which of Smith's recommendations regarding the Barksdales' investment portfolio is/are correct?
- Recommendation 1 only
  - Recommendation 2 only
  - Both Recommendation 1 and Recommendation 2

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## ➤ Solution: C

People with higher risk and potential volatility in income (human capital) should take on lower risk in their investment portfolios. Adrian's income is more than two-thirds of the household total and is somewhat volatile because of cyclical demand for his employer's product. Additionally, because income is tied to a particular industry or sector, the Barksdales should underweight securities having a high correlation with bauxite demand.

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  - 将您发现的问题通过电子邮件告知我们，具体的内容包含：
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    - ✓ 所在班级（eg.1906CFA一级长线无忧班）
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    - ✓ 您对问题的详细描述和您的见解
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