SS5-6 Private Wealth Management

The human resources department of The Tredway Medical Group hired Joe Boylan, a private wealth consultant, to provide a series of presentations to its employees covering the fundamentals of financial planning.

Boylan states that when considering life insurance needs and investment strategies, it is important to understand the notion of human capital. He provides an example in Exhibit 1.

Exhibit 1	
Marie	➢ A 62-year-old cardiac surgeon who is celebrating her birthday today. ➢ Plans on retiring in two years, on the day before she turns 64. ➢ The previously-mentioned financial publication ranks cardiac surgery asthe second highest paying specialty. ➢ A member of Mensa (the largest and oldest high IQ society in the world) with the highest Mensa IQ of any other Mensa member in her profession. ➢ A widow with three financially independent adult children. ➢ Has no debt and her total assets calculated using a traditional balancesheet amount to $4 million, which includes $3 million in stocks andbonds and $250,000 in real estate.
Note: Marie is non-smokers and is in excellent health given her age.	

Boylan provides selected information from standard mortality tables along with some market data and characteristics of Marie's medical specialty in Exhibit 2. In addition, he also includes several assumptions which he uses to determine Marie's total assets under a holistic balance sheet.

Exhibit 2			
Inputs used in determining Marie's Assets under a Holistic Balance Sheet			
Mortality Statistics for Non-smoking Females			
Age	62	63	64
Probability of Dying	0.0059	0.0069	0.0079
Characteristics of Income for Cardiac Surgeons			
Annual wage growth rate		5%	
Occupational income volatility		1%	
Nominal risk free rate		3%	
Marie's current employment income		$430,000	
Marie's current pension value		$1.75 million	

Assumptions:

- All income is received at the end of the year
- All probability-based calculations are carried out to 4 decimal places.

One of the attendees at the presentation told Boylan that she had accessed several life insurance carrier websites but found that it was very hard to compare the costs of their whole life policy offerings, as the companies often used different assumptions about the amount of the death benefit, premiums, cash value growth rates and dividend reinvestment rates. Using the information in Exhibit 3 for a hypothetical whole life policy, Boylan illustrates a convenient method for comparing the cost of different policies when these variables change.

Exhibit 3	
Hypothetical Whole Life Insurance Policy	
Death benefit	$300,000
Expected holding period	25 years
Annual premium, paid at start of year	$2,750
Estimated cash value at the end of 25 years	$60,000
Discount rate	6%
Dividend reinvestment rate	6%
Estimated annual dividend, paid at year end	$850

1 Using the information in Exhibit 3, the surrender cost index per $-thousand per year for the hypothetical whole life policy is closest to:

A. $3.05.

B. $2.69.

C. $6.49

Solution: A.

Step	Item	Calculation	Value
1	FV of premiums: annuity in advance	$2,750 × FVA^{ADV}(25y, 6%)	$159,930
2	FV of dividends: annuity in arrears	$850 × FVA(25y, 6%)	46,635
	Time Value adjusted net payment		113,295
3	Estimated cash value (at end of 25 years)		60,000
4	25 year Cost of insurance		$53,295
5	Annual payment to equal cost of insurance	$53,295 ÷ FVA^{ADV}(25y, 6%)	$916
6	Cost per $1,000 coverage per year	$916 ÷ ($300,000 ÷ $1,000)	**$3.05**

Geri Buylak, a financial adviser, is preparing for a meeting with Kasey McLoughlin, the recent

widow of Bryn McLoughlin, a resident of the country of Weshvia. Kasey mentions to Buylak that she is aware that a large part of her wealth now depends on the investment property in Landlochen. She asks Buylak what cash flow will be available to her annually after taxes from its lease income and what after-tax cash proceeds she might obtain if the property were to be sold when the current lease expires. Buylak had prepared for these questions, and her responses were based on the following:

- The investment real estate property in Landlochen had a cost basis of €2,900,000 and has a present market value of €3,000,000. It produces income of €450,000 (pre-tax) annually through a lease agreement that expires in five years.
- After reviewing several reports analyzing Landlochen real estate values, Buylak estimates that the property could be sold at the termination of the lease at 30% above its present market value.
- The tax structure in Landlochen differs from Kasey's home country Weshvia, as shown in Exhibit 1. Fortunately, there is a provision for some relief from double taxation. Weshvia allows use of the deduction method with regard to income taxes and the credit method toward capital gains.

Exhibit 1

Tax Rates on Investment Property Relevant to Kasey McLoughlin

	Country	
Type of Real Estate Property Tax	Landlochen	Weshvia
➢ Wealth tax	1.5% of cost basis, accumulated annually and paid at the time of sale	None
➢ Income tax	35% of annual income	25% of annual income
➢ Capital gains	20% at time of sale	25% at time of sale
Applies to location	Locally operating within borders	Owned by residents anywhere in the world

2 Using Exhibit 1, the annual amount of after-tax cash flow that will be generated by the Landlochen property lease is closest to:

A. €219,375.

B. €230,625.

C. €175,875.

Solution: A.

In each year, the tax rate under the deduction method will be:

$T_{Residence} + T_{source}(1 - T_{Residence})$

In this case, the tax rate is calculated as follows:

(0.25) + 0.35(1 – 0.25) = 0.5125

This value is the combined tax rate net of tax relief via the deduction method.

Kasey's after-tax annual cash flow is €450,000 × (1-0.5125) = €219,375.

Rhys Jacobs is a 70-year-old resident of Sahjong, a small island country off the coast of Australia that caters to high-net-worth individuals because of its low tax rates and status as a sought-after free trade zone. Jacobs grew up in Sahjong and is a well-respected entrepreneur.

Jacobs has long put it off but believes that now is the time to finally receive some much-needed assistance in tax-efficient wealth accumulation, retirement and estate planning, and other financial matters, so he recently hired Jassica Simson as his tax and financial adviser.

In preparing for their introductory meeting, Jacobs performs initial research on various tax-planning strategies available in Sahjong, where the capital gains tax rate is much lower than the income tax rate. He finds several strategies that might be appropriate for his investment portfolio and summarizes them as follows:

A strategy based on low portfolio turnover whereby assets are held for extended periods

A strategy that concentrates on tax-exempt securities

A strategy to restructure his portfolio to focus on annual capital gains versus income generation

Jacobs provides materials to Simson, including the following notes he took from a recent financial blog discussing the various tools currently being used in retirement planning:

Long-term market return and historical inflation averages are simple but effective strategies for accurately extrapolating how much wealth will be accumulated after a period of time if one could earn, say, 10% a year.

The Monte Carlo approach helps an investor get to a straightforward “yes/no” determination on whether a particular retirement income goal can be achieved.

Given a particular investment strategy, the likelihood of achieving a certain percentage return throughout retirement can be answered with a Monte Carlo simulation.

Sustainable spending rates in retirement can be approximated without the need for a Monte Carlo simulation by using the notion of ruin probabilities.

Jacobs asks Simson to evaluate these notes.

Simson states that she is very much in favor of a long-term buy-and-hold strategy focused on capital appreciation. She states that investors often do not realize just how much of their investment returns are consumed by taxes, and she provides Jacobs with the data in Exhibit 1 to illustrate the point.

Exhibit 1 Data Illustrating the Effect of Taxes on Wealth

Initial investment	$250,000
Holding period	25 years
Expected annual gain	8%

Tax rate on investment returns	10%

Turning to retirement planning, Simson confirms that sustainable spending rates in retirement can be approximated without the need for a Monte Carlo simulation by using the notion of ruin probabilities (as developed by Milevsky and Robinson). The analysis incorporates lifespan uncertainty as well as financial market risk. After they discuss the method, Jacobs asks her to determine how much he could withdraw annually from a balanced portfolio if he wants to be at least 94% certain that the portfolio will last for the remainder of his life. He states that the current value of his (balanced) portfolio is $2 million, made up of 50% income-producing equities and 50% bonds. Simson uses the ruin probabilities in Exhibit 2 as the basis for her calculation of Jacobs' lifetime sustainable annual withdrawal.

Exhibit 2 Ruin Probabilities for a Balanced Portfolio: 50% Equity and 50% Bonds

	Real Annual Spending per $100 of Initial Nest Egg									
Current Age	Hazard Rate, λ (%)	$2 (%)	$3 (%)	$4 (%)	$5 (%)	$6 (%)	$7 (%)	$8 (%)	$9 (%)	$10 (%)
70	4.75	0.8	2.8	6.3	11.4	17.6	24.7	32.2	39.8	47.2

Assumptions: Portfolio return: arithmetic: 5%; geometric: 4.28%; standard deviation: 12%

Jacobs owns a controlling interest in a rapidly growing private firm that explores for and produces oil. The firm generates steady cash flow but is considered illiquid. Simson explains that Jacobs' death could create significant inheritance taxes. She suggests an insurance policy to help fund any future inheritance taxes and help offset the risk of a tax liability combined with an illiquid asset. Jacobs is confused about the use of life insurance and asks Simson to verify the following statements:

The combination of a life insurance policy and a trust is likely to be redundant and unnecessary.

Death benefits from a life insurance policy are usually taxable at favorable rates.

Premiums paid by the policyholder are typically neither part of the policyholder's taxable estate at the time of his or her death nor are subject to a gratuitous transfer tax.

The oil firm that Jacobs controls is headquartered in the island country of Mahjong, located near Sahjong. Because of the foreign location of the oil firm, Simson believes there might be opportunities to reduce taxes.

Simson knows that Sahjong uses the exemption method, whereby it does not impose taxes on income that stems from a foreign country. However, Sahjong will soon hold parliamentary elections, and the opposition party is said to favor the deduction method. Simson plans to investigate how this possible change might affect Jacobs' tax liability. She compares the tax rates in the two countries in Exhibit 3.

Exhibit 3 Comparative Income Tax Rates

Country	Sahjong	Mahjong

Income tax rate	10.00%	15.50%

3 Based on the data in Exhibit 1 and assuming that all returns are taxed annually, the proportion of the investment's return that is consumed by taxes is closest to:

A. 19.9%.

B. 17.0%.

C. 10.0%.

Solution: A.

A is correct.

Accumulated Value	Calculation	
Investment gain	$1,712,119 – $250,000	$1,462,119
Investment gain consumed by taxes	$290,413/$1,462,119	19.9%

C is incorrect because it taxes the gain at the end.

Accumulated Value	Calculation	
Ignoring taxes	$250,000 × $[1 + 0.08]^{25}$	$1,712,119
Investment gain	$1,712,119 – $250,000	$1,462,119
Tax on gain	10% × 1,462,119	$146,212
Investment gain consumed by taxes	$146,212/$1,462,119	10.0%

B is incorrect because the wrong denominator was chosen when calculating the percent gain: $290,413/$1,712,119 = 17.0%.

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 Ordinary Income		
Taxable Income (€)	**Tax on**	**Percentage on Excess**

Over	Up to	Column 1 (€)	Over Column 1
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

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

4 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.

Solution: B

The after tax wealth accumulation for deferred capital gains is

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

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