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https://www.100test.com/kao_ti2020/84/2021_2022_SOA_E7_9C_9F_E9_A2_98N_c50_84023.htm COURSE 8: Fall 2004 -1- GO ON TO NEXT PAGEInvestmentMorning Session**BEGINNING OF EXAMINATION**INVESTMENTMORNING SESSIONQuestions 1-4 pertain to the Case Study1. (5 points) LifeCo ’s ALM Report indicates a need to rebalance the assets supporting thenon-traditional life segment.(a) Describe the constraints on asset sales when rebalancing this portfolio.(b) Evaluate LifeCo ’s investment strategy for this segment, and recommend anynecessary changes.COURSE 8: Fall 2004 -2- GO ON TO NEXT PAGEInvestmentMorning SessionQuestions 1-4 pertain to the Case Study2. (9 points) LifeCo is considering selling its closed block of Institutional Pension (GIC).Liability book value (in $ millions) $1,500Maturity (in years) 2Annual liability crediting rate 6.60%1 year risk-free rate 1%You are given the following information:Scenario 1 Scenario 21 year risk-free rate 1 year forward 3% 2%Withdrawal rate at the end of year 1 4% 2%Withdrawal rate at the end of year 2 100% 100%Probability 30% 70%There are no new deposits.(a) (4 points) Compare the option pricing method and the actuarial appraisal methodfor estimating the fair value of liabilities.(b) (2 points) Outline practical considerations in applying the option pricing method.(c) (3 points) Calculate the fair value of liabilities using the option pricing methodwith the risk- free interest rate for discounting.COURSE 8: Fall 2004 -3- GO ON TO NEXT

PAGEInvestmentMorning SessionQuestions 1-4 pertain to the Case Study3. (9 points) You are LifeCo ’ s Investment Actuary and a member of the ALM Committee.The Committee is currently reviewing the risk exposures of the Non-Traditional Lifeportfolio as contained in your December 31 ALM Report.#61472.#8226.#61472.Your effective duration calculations use a base yield curve and a yieldcurve shocked by 1 basis point#61472.#8226.#61472.LifeCo ’ s head of Investments has proposed the sale of $50 million (inpresent value) of 15-year zero-coupon bonds in order to increase cashholdings to partially address the key rate duration mismatch(a) Describe the limitations of LifeCo ’ s reported effective durations as an interest raterisk measure.(b) Estimate the economic impact of a 100bp 0drop in interest rates based on yourreported effective durations.(c) Compare this estimate with your reported “ margin squeeze ” impact and brieflyexplain reasons for any differences to the ALM committee.(d) Describe any interest rate ‘ bets ’ evident from the reported partial durations.(e) Estimate the revised partial durations following this proposed transaction.(f) Estimate the revised impact of margin squeeze following this proposedtransaction.(g) Explain how the potential margin squeeze should be incorporated into anyassessment of interest rate bets.COURSE 8: Fall 2004 -4- GO ON TO NEXT PAGEInvestmentMorning SessionQuestions 1-4 pertain to the Case Study