Case solution

Economics, Financial Markets

Problems

Q. 1

Consider a five-year coupon bond with a face value of $1000 paying an annual coupon of 15%. If the current market yield is 8%, what is the bond's price? If the current market yield increases by 1% what is the bond's new price? Using your answers to part (i) and (ii) , what is percentage change in the bond's price as a result of 1% increase in interest rates.

Q. 2

Consider the following FI balance sheet:

Notes: All securities are selling at par (equal to book value). The two-year Treasury bonds yield 5%; the 15-year corporate bonds yield 9%; the one-year CD issue pays 4. 5% and the five-year deposit pays 8%. Assume that all instruments have annual coupon payments. What is the value of M. Match Ltd's equity? What is the weighted average maturity of FI's assets? What is the weighted average maturity of FI's liabilities? d) What is the FI's maturity gap? What does your answer to part imply about the interest rate risk exposure of M. Match Ltd? Calculate the values of all four securities on M. Match Ltd's balance sheet if all interest rates increase by 2%. What is the impact on the equity of M. Match Ltd? Calculate the percentage change in the value of equity. What would be the impact on M. Match Ltd's risk exposure if its liabilities paid semi-annually as opposed to annually?

Q. 3

An insurance company issues a $100, 000 one-year bond paying 7% annually in order tofinancethe acquisition of a $100, 000 one-year corporate

loan paying 9 % semi-annually. What is the insurance company’s maturity gap? What does the maturity model state about interest rate risk exposure given the insurance company’s maturity gap? Immediately after the insurance company makes these investments, all interest rates increase by 3%. What is the impact on the asset cash flows? What is the impact on the liability cash flows?