Multinational Finance and Investment Assessment: Individual Coursework INSTRUCTIONS TO CANDIDATES •Only a single Microsoft Word documentis accepted for submission. The permissible formats are limited to the following file extensions: .doc, .docx. COURSEWORK BRIEF The individual coursework requires you to answer three questions. You should complete the coursework independently. There is no (upper/lower) limit on the number of words for this coursework. Guidance on how to write mathematical equations in Microsoft Wordis provided below: Math equation examples Descriptions How to write in Microsoft Word 2 + 2 = 4 Two plus two equals four 2 + 2 = 4 2 -2 = 4 Two minus two equals zero 2 -2 = 0 2 ×2 = 4 Two times two equals four 2\*2 = 4

2÷2 = 1 OR =1Two divided by two equals one 2/2 = 1 2! =4Two to the power of two equals four 2^2 = 4 √4= 2 Square root of four equals two sqrt(4) = 2 OR 4^(0.5) = 2 ((2+2)!/4=2sqrt((2+2)^2/4) = 2 𝛽"beta\_A OR b\_A Answer ALLthe questions. Details of calculations are required.Question 1. (Total 30 Marks) A five-year 2.4% defaultable coupon bond is selling to yield 3% (Annual Percent Rate and semi-annual compounding). The bond pays interest semi-annually. The risk-free yield is 2.4%. Therefore, its current credit spread is 3% -2.4% = 0.6%. Two years later its credit spread increases from 0.6% to 1% while the risk-free yield doesn’t change. Assuming the face value of the coupon bond and risk-free bond is 100. a)What is the return of investing in this bond over the two year? (10 marks) b)If we define credit value as the difference between the prices of risk-free bond and defaultable bond, what is the currentcredit value of the bond, and what is it after two years? (10 marks)

c)Decompose the return into two components attributable to moving to maturity and the increase in the credit spread. (10 marks) Question 2: (Total 35 marks) Answer the following independentquestions: a)Explain why international stock might have high volatility but low betas. (5 marks) b)Do you agree withthe following statement? And explain why. (5 marks) “The Capital Asset Pricing Model [CAPM] assumes that the stock market is dominated by welldiversified investors who are concerned with specific risk. “ c)Illustrate how to synthesize a forward hedging strategy by using only the money markets, in order to hedge against the foreign exchange risk. (5 marks) d)Use a numerical example to illustrate that when there is a large change in the interest rate, the approximation error by using the duration and convexity rule is smaller than the approximation error by using the duration rule only. (5 marks) e)Why do we say a coupon bond can be seen as a package of zero-coupon bonds? Please use a numerical example for illustration. (5 marks) f)If the spot exchange between Euro and pound is Euro 1.1/Pound, and the UK Guilt returns a 0.5% yield. It is also known that the Euro is expected to depreciate against the pound by 0.5%. What is the yield of a French government bond? (10 marks) Question 3. (Total: 35 marks) Kirstin Brown is a portfolio manager at Standard life plc. She wants to estimate the interest rate risk of assets of the company consisting of 1 million shares of Bond A, 2 million shares of Bond B, and 2 million shares of Bond C. The duration of Bond A is 5.59, a valuation model found that if interest rates decline by 30 basis points, the value of Bond A will increase to 83.5 pounds, and if interest rates increase by 30 basis points, the value of Bond to A will decline to 80.75 pounds. The same valuation model also found that if interest rates decreases by 50 basis points, the value of Bond B increases to 104.6 pounds, and if interest rates increases by 50 basis points, the value of Bond B decreases to 96.4 pounds, and the current value of Bond B is 100 pounds. Kirstin also knows from the valuation model that, by using the duration and convexity rule, if interest rates decline by 1%, the price of bond C increases approximately by 8.46 pounds, and if interest rates increase by 3%, the price of Bond C decreases approximately by12.77 pounds. The convexity of Bond C is 300. a ) What is current value of the bond portfolio? (10 Marks) b)What is the duration and convexity of the bond portfolio? (13 Marks) c)Assuming that Standard life plc has a liability obligation with a current value that is the same as the current value of the bond portfolio as calculated in a). The liability has a duration of 8.0748 and a convexity of 212.9606. Kirstin wants to rebalance the bond portfolio by changing the number of shares of Bond A, B and C so thatthe Standard life plc is immunised to the interest rate risk. Please help Kirstin to find out how many shares of Bond A, B and C should Standard life plc hold. (12 marks)