

Tutorial Assignment 8 - Due 4 October at 10:00am (Start of Week 10) - Valuing Risky Bonds

Started: Oct 2 at 10:27

Quiz Instructions

Please note: this is marked by a computer program. I have built in an allowance for rounding, but it is not a big allowance. It is safest to NOT round intermediate results and do all rounding at the very end.

This tutorial assignment is marked and worth 1.25 marks toward your final mark in this subject. There are 12 questions and you will be awarded $\frac{1.25}{12} = 0.10417$ marks toward your final mark for EACH question.

Please note that your tutorial assignment consists of 2 parts -

Part A is unmarked - you can download the questions as a PDF from the first question of the quiz.

Part B is marked by Canvas - it is the on-line quiz you are about to take now. Please print a pdf or take a screen shot of your answers to the computer-based quiz (Part B) at the end. This is insurance in case you write something that the program thinks is an error, but it is not really an error. **Your only time limit is the due date and time. Please note, that only your last attempt of the Quiz is saved and marked.**

Q: What if I do not have time to finish in one sitting?

A: You are permitted multiple attempts, but your **last** attempt before the due date and time is the one that is marked. Canvas, appears to save your answers after you enter them, but you might want to make note of them just in case of a computer glitch.

Please download the unmarked Part A here:

It's wise to do part A. There certainly could be final exam questions that are similar.

Question 1

1 pts

(Not really a question about risky bonds, but related) Suppose there are 4 states of the world with the following probabilities of occurring and the following payoffs. What is the expected pay off?

$$0.05 \times 100 + 0.40 \times 10 + 0.50 \times (-2) + 0.05 \times (-50)$$

State	Probability	Cash Flow
Awesome	.05	100
Pretty good	.40	10
Isn't bad	.50	-2
OMG!	.05	-50

5.5

Question 2

1 pts

Consider a bond with a 10% coupon and a yield to maturity of 8%. If necessary, you can assume that the yield to maturity of 8% is annualized as a bond equivalent yield. If the bond's yield to maturity remains constant, then in one year, will the bond price be higher, lower or unchanged? Hint 1: what is the relation between price and yields? Hint 2: What is the YTM of a bond priced at par? Hint 3: You can solve this by intuition or by math. The intuition is a lot easier. Brownie points for doing the math.

Don't just guess! Think through the logic!

☒ Lower

☐ Higher

☐ Unchanged

$$YTM < C$$

$$P > FV$$

$$YTM = 8\%$$

$$P = \frac{E(CF)}{1 + YTM}$$

$$\therefore P = FV$$

$$\frac{110}{1 + 8\%}$$

$$= 101.85$$

$$P > FV$$

$$P = FV \rightarrow YTM = CR$$

$$YTM < CR \rightarrow P > FV$$

bond is trading at premium

if interest rate Δ ,
then price must \downarrow to FV

Question 3

1 pts

If two bonds have the same risk, same coupon payments and same face value, which bond will have a higher price, a callable bond or a convertible bond?

- ☒ The Convertible bond
- ☐ The Callable Bond
- ☐ The value of the Callable and the Convertible bonds will be the same
- ☐ There is not enough information to answer this question

callable \rightarrow high $i \rightarrow$ low P

callable gives the issuer the right to buy back \rightarrow high $i \rightarrow$ lower P

This text is for questions 4 through 6: An internet company, e-Money, is offering credit card with an A.P.R. of 20%. What is the effective annual interest rate offered by e-Money if the compounding interval is

Question 4

1 pts

Annual compounding interval?

20%



Question 5

1 pts

Monthly compounding interval?

21.939%



$$\left(1 + \frac{20\%}{12}\right)^{12} - 1$$

Question 6

1 pts

Daily compounding interval?

22.1336%



$$\left(1 + \frac{20\%}{365}\right)^{365} - 1$$

This text is for questions 7 through 12: You need a financial calculator or Excel to solve for the periodic yield to maturity of a semiannual coupon-paying bond. In Excel, the function is RATE. A 20-year maturity bond with par value \$1000 makes semiannual coupon payments at a coupon rate of 8%. Find the bond equivalent and effective annual yield to maturity of the bond if the bond price is:

each payment - \$40

YTM = 4.26% semi.

Question 7

1 pts

\$950 - BEY

8.52%

0.0852



Question 8

1 pts

\$950 - EAR

0.087



$$\left(1 + \frac{4.26\%}{2}\right)^2 - 1 = 8.7\%$$

Question 9

1 pts

\$1000 - BEY

$$YTM = 4.00\%$$

$$0.08$$



Question 10

1 pts

\$1000 - EAR

$$(1 + 4\%)^2 - 1$$



Question 11

1 pts

\$1050 - BEY

$$YTM = 3.76\%$$

$$2 \times 3.76\%$$

$$= 0.0752$$



Question 12

1 pts

\$1050 - EAR

$$(1 + 3.76\%)^2 - 1$$

$$0.0766$$



Saved at 10:28

Submit Quiz