

- Course Overview
- M1: Credit Risk and Financing
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- Final Test

## FINAL TEST

 Final Test

## Final Test

Question 1

What is the main advantage of a zero-coupon bond for the issuer?

- Zero-coupon bonds have lower credit risk than coupon bonds
- The issuer does not have to make periodic interest payments
- Zero-coupon bonds have higher liquidity than coupon bonds
- Zero-coupon bonds have higher yields than coupon bonds

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## QUESTIONS

- |    |    |    |    |    |
|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  |
| 6  | 7  | 8  | 9  | 10 |
| 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 |

Question 2

Which factor is least relevant when deciding whether to rent or buy a home?

- The potential for property value appreciation
- The local housing market trends
- The individual's long-term financial goals
- The color of the house

Question 3

Which regulatory measure was implemented to address fraudulent accounting practices in corporations?

- Dodd-Frank Act
- Basel III Accord
- Glass-Steagall Act
- Sarbanes-Oxley Act

Question 4

What does a negative weight in a portfolio represent?

- A risk-free asset
- A dividend-paying stock
- An error in calculation
- A short position

Question 5

Why might an investor be willing to accept lower liquidity in a bond?

- To avoid paying taxes on frequent trades
- To receive a higher yield as compensation for the liquidity risk
- To reduce overall portfolio risk
- To simplify their investment strategy

Question 6

Assume that Bank ABC has EUR 10,000,000 in cash, securities worth EUR 55,000,000, loans totalling EUR 300,000,000 and other assets worth EUR 180,000,000. The bank has also deposits for EUR 200,000,000 and other borrowings for EUR 50,000,000 and, finally, ABC has EUR 11,000,000 in reserves. What is Bank ABC's equity?

- EUR 306 mln
- EUR 284 mln
- EUR 240 mln

EUR 295 mln

Question 7

Assume that you deposit \$15,000 at a local bank. The bank offers 4% interest rate. You keep the money deposited for 5 years. How much money will you have in your deposit account after 5 years, assuming (a) compound interest, and (b) simple interest. (Round to the nearest integer.)

- \$18,250; \$15,600
- 18,000,15,600
- \$18,250; \$18,000
- \$18,000; \$18,250

Question 8

What is the primary goal of an arbitrageur in the options market?

- To provide liquidity to the market
- To maximize returns through high-risk investments
- To minimize risk through diversification
- To profit from price discrepancies between related securities

Question 9

Two years ago, a bank provided a loan to company XYZ for \$400 mln. The outstanding amount of the loan is now \$320 mln. The collateral required of XYZ is currently valued at \$190 mln. The bank estimates that for this type of loan the probability of default is 7% and the recovery rate is 50%. Furthermore, the bank's analysts estimate that the collateral could be quickly sold for \$160 mln.

- (a) Compute the LGD (loss given default) as percentage for this particular loan.  
(b) What is the expected loss in dollar amount?

- 40.6%; 18.2 mln
- 50%; 11.2 mln
- 50%; 22.4 mln
- 40.6%; 9.1 mln

Question 10

You bought a call option on FGH with a strike price of \$40 that expires in 6 months. The current price of the call is \$4 and the current share price of FGH is \$43 per share.

- (a) What is the intrinsic value of the call?  
(b) What is the time value of the call?

- Intrinsic value=1, time value =3
- Intrinsic value 0, time value potentially unlimited
- Intrinsic value 0, time value =4
- Intrinsic value = 3, time value =1

Question 11

Assume that a company TUW has Assets of \$100 and liabilities of 70. (a) How much is TUW's equity? (b) Suppose that TUW uses 20 units of its cash to pay a liability. What is the equity after completing this operation?

- 30, 50
- 30,10
- 30, cannot be determined
- 30,30

Question 12

Which of the following best describes the relationship between the

degrees of freedom in a Student's t-distribution and its similarity to a normal distribution?

- As the degrees of freedom decrease, the t-distribution approaches a normal distribution
- The t-distribution is always identical to the normal distribution regardless of degrees of freedom
- The degrees of freedom have no impact on the shape of the t-distribution
- As the degrees of freedom increase, the t-distribution approaches a normal distribution

Question 13

A fund QQQ has reported the following 3 returns for the last 3 months: 1%, -1%, and 3%. The target return investors assigned to the fund is 2% a month.

What is the semideviation of returns over the 3 month period?

- 1.63%
- 2.00%
- 2.24%
- 1.83%

Question 14

Assume that a company has Assets of JPY 120 bln and Liabilities of of JPY 100 bln.

- (a) What is the equity multiplier? (Round to 1st decimal.)
- (b) Suppose that now the company has spent JPY 20 bln to pay down some debt it owed to a bank. What is the equity multiplier now?

- 1.2x; 1.3x
- 5.6x; 4.2x
- 5.5x; 4.7x
- 6.0x; 5.0x

Question 15

A bond has a maturity of 10 years, a yield to maturity of 7.7%, a \$-duration of -505, and a \$-convexity of 7240. If the yield to maturity decreases by 0.2%, what the absolute gain (loss).

Make sure you use the best formula given the information available

- \$1.02 loss
- \$1.01 gain
- \$1.01 loss
- \$1.02 gain

Question 16

Suppose that we are considering investing in 4 possible funds. We are provided with the following annualized return and volatility for each of them over the last 10 year period:

- Fund A 15% return 22% volatility
- Fund B 12% return, 20% volatility
- Fund C 10% return, 8% volatility
- Fund D 25% return 30% volatility Assume the risk-free rate is 2%. Which fund should we choose based on the Sharpe ratio?

- Fund B
- Fund C
- Fund D
- Fund A

Question 17

Investment bank WWE has created an SPE with a total par value of \$400

min or mortgages. In the SPE the credit tranching consists of 3 classes of bonds: TRANCHE A has a par value of \$250 mln, TRANCHE B has a par value of \$100 mln, and TRANCHE C a par value of \$50 mln. Losses will be absorbed in this order: TRANCHE C, TRANCHE B, TRANCHE A. Suppose default losses amount to \$70 mln. How much loss will each tranche absorb?

- TRANCHE C: \$23.33 mln; TRANCHE B: \$23.33 mln; TRANCHE A: \$23.33 mln
- TRANCHE C: \$70 mln; TRANCHE B: \$0; TRANCHE A: \$0
- TRANCHE C: \$50 mln; TRANCHE B: \$20 mln; TRANCHE A: \$0
- TRANCHE C: \$0; TRANCHE B: \$70 mln; TRANCHE A: \$0

Question 18

Suppose that a bond has a face value of \$1,000 and pays a coupon of \$50 annually. The bond will mature in 3 years from today. As of today, similar bonds pay a coupon rate of 4%.

- (a) Will the value of the bond go up or down?
- (b) By how much?

- down \$28.16
- down, \$27.25
- up, \$27.25
- up, \$28.16

Question 19

Current stock price \$45 per share. We are given the following information about company ABC:

- Cost of equity 8.5%
- Last dividend paid \$2 per share
- Growth rate stage 1 (fast growth): 8%
- Growth rate stage 3 (stable growth): 3.5%
- Stage 2 (linearly declining growth rate) is expected to last 8 years (i.e., H=8)
- (a) Using the H model what is the value of ABC shares? (b) Are they currently over/under or correctly valued?

- \$55.80, overvalued
- \$48.60, undervalued
- \$55.80, undervalued
- \$48.60, overvalued

Question 20

How does inflation impact the purchasing power of money over time?

- Inflation decreases the purchasing power of money over time
- Inflation has no impact on the purchasing power of money over time
- Inflation increases the purchasing power of money over time
- Inflation and purchasing power are not related

Question 21

How might sentiment analysis complement technical analysis in stock valuation?

- By calculating intrinsic value more accurately
- By replacing the need for chart pattern recognition
- By eliminating the need for historical price data
- By providing insights into market psychology that may influence price movements

Question 22

How would you apply the concept of semi-deviation in portfolio risk management?

- By ignoring all returns below the risk-free rate
- By measuring the volatility of negative returns below a specified threshold
- By focusing only on positive returns above a threshold
- By calculating the average of all returns

Question 23

How might you create a hedging strategy using ETFs to protect against potential market downturns?

- Increase leverage by borrowing to buy more of the same ETFs
- Invest all assets in a single sector ETF
- Combine long positions in broad market ETFs with short positions in volatile sector ETFs or inverse ETFs
- Sell all ETF holdings and hold only cash

Question 24

If you were designing a new credit risk model, which of the following factors would be LEAST important to include?

- Debt-to-Income ratio
- Borrower's favorite watch value
- Borrower's credit score
- Loan-to-Value ratio

Question 25

Assume that Bank ABC has EUR 15,000,000 in cash, securities worth EUR 200,000,000, loans totalling EUR 310,000,000 and other assets worth EUR 190,000,000. The bank has also deposits for EUR 210,000,000 and other borrowings for EUR 60,000,000 and, finally, ABC has EUR 15,000,000 in capital reserves. What is Bank ABC's equity?

- EUR 410 mln
- EUR 434 mln
- EUR 445 mln
- EUR 460 mln

Question 26

You have deposited \$300,000 in a saving account in a US bank that is FDIC insured. Recently, the bank made some bad investments that led to heavy losses. The bank is only able to return \$20,000 of the money you deposited. What is your loss?

- \$0 as deposits are protected by FDIC
- \$50,000
- \$280,000
- \$30,000

Question 27

In the context of mortgages, what does "underwater" mean?

- The house has been damaged by flooding
- The house is worth less than the mortgage on it
- The house has a high risk of foreclosure
- The homeowner has missed several mortgage payments

Question 28

Assume that a bank has made a loan of \$300 mln to firm XYZ with no collateral required. The bank estimates that in case firm XYZ defaults, the

RR (recovery rate) is 0.60.

- (a) What is the LDG (loss given default) dollar amount faced by the bank?  
(b) How would the LDG dollar amount change if the bank had asked for \$150 mln of collateral in order to provide the loan, assuming that the collateral can be easily sold for that value.

- \$120 mln; \$60 mln  
 \$300 mln; \$20 mln  
 \$180 mln; \$120 mln  
 \$150 mln; \$10 mln

Question 29

You bought a contract call on the shares of a company PQR with a strike price of \$50/share. You also sold a put contract on the same stock with a strike price also of \$50 per share. The premium for the call is \$3 and the premium for the put is \$1.

- (a) What is the cost of setting up your position?  
(b) What is the most downside for this position?

- Cost = \$200, Max downside = \$5000  
 Cost = \$2, Max downside = \$50  
 Cost = \$2, Max downside is undetermined before expiration  
 Cost = \$200, Max downside is unlimited

Question 30

MNQ shares are currently trading for \$22/share. We just bought 100 shares, and then 1 year later we sell them for \$24/share. During the period MNQ paid dividends in the amount of \$1/share. What is our rate or return on his investment? (Assume that there are no transaction fees and commissions.)

- 9.09%  
 13.64%  
 10.05%  
 8.70%

Question 31

What is the primary difference between the coefficient of variation and the Sharpe ratio?

- The coefficient of variation uses standard deviation while the Sharpe ratio uses variance  
 The Sharpe ratio is only applicable to stocks while the coefficient of variation can be used for any asset  
 The coefficient of variation is always larger than the Sharpe ratio  
 The Sharpe ratio uses excess return over standard deviation

Question 32

A bond with a maturity of 5 years, a coupon rate of 4%, and a yield to maturity of 3.5% has a modified duration of 4.0. If the yield decreases by 0.3% what is the approximate change in bond price as a percentage?

- 1.20%  
 1.20%  
 -0.01%  
 0.01%

Question 33

Assume that a company has Assets of EUR 150 bln and Liabilities of EUR 140 bln. (a) What is the equity multiplier? (Round to 1st decimal) (b) Suppose that now the company has spent EUR 20 bln to pay down some debt it owed to bank. What is the equity multiplier now?

- 15x, 15x

15x, 13x

1.1x, 1.1x

14x, 12x

Question 34

A bond matures in 9 years, has a yield to maturity of 10%, and its \$-duration is -\$15. What is the absolute gain (loss) when the yield to maturity decreases by 0.3%

1.55% loss

1.55% gain

\$1.55 loss

\$1.55 gain

Question 35

Consider the following simple dataset that contains the variables  $X$  and  $Y$   $X = \{-3, -2, -1, 0, 1, 2, 3\}; Y = \{9, 4, 1, 0, 1, 4, 9\}$ . Both Pearson and Spearman correlations turn out to be zero. Why?

The relationship between X and Y is quadratic and not linear

There is no relationship between X and Y so correlation is zero with both methods

The relationship between X and Y is neither linear nor monotonic

The relationship between X and Y is completely random.

SUBMIT

