

**St. Lawrence University**

*Second Midterm Exam– November 2021*

**FINANCIAL ECONOMICS**

**ECON 313**

**Full Name:**

**Student ID:**

*Writing Time: 90 Minutes*

*Permitted Materials: Non-programmable Calculators*

**Instructions:** Do not begin the exam yet. The professor will announce the beginning of the exam when he makes sure that everyone has a copy of the exam. In the mean time, go ahead and put your full name and ID number on the space provided. You should feel free to make use of the reference sheet throughout the exam.

**Part A: Multiple-choice Questions (40 points)**

1. If there is no relationship between the rates of return of two assets over time, these assets are
  - A. positively correlated.
  - B. negatively correlated.
  - C. perfectly negatively correlated.
  - D. uncorrelated.
  
2. Two assets have a coefficient of correlation of  $-0.4$ . Asset A has a standard deviation of 20% and asset B has a standard deviation of 40%. Relative to holding a portfolio consisting of 100% of Asset B, what happens to risk if you combine these assets into a 50-50 weighted portfolio?
  - A. Combining these assets will increase risk.
  - B. Combining these assets will have no effect on risk.
  - C. Combining these assets may either raise or lower risk.
  - D. Combining these assets will reduce risk.
  
3. Which of the following represent undiversifiable risks?
  - I. The Federal Reserve raises interest rates.
  - II. A product is recalled because of safety problems.
  - III. The economy slips into a recession.
  - IV. The CEO's divorce settlement forces him to sell off half of his stock holdings.
  - A. I, II and IV only
  - B. II and IV only
  - C. I and III only
  - D. I, II and III only
  
4. Stock of Gould and Silber Inc. has a beta of  $-1$ . If the market declines by 10%, Gould and Silber would be expected to
  - A. decline by 10%.
  - B. rise by 10%.
  - C. not respond to market fluctuations.
  - D. decline by 1%.
  
5. MacroN Company has a beta of 1.75. By what percent will the required rate of return on the stock of MacroN Company increase if the expected market rate of return rises by 4%?
  - A. 7.00%
  - B. 7.5%
  - C. 4.5%
  - D. 5.75%
  
6. Portfolios falling to the right of the efficient frontier
  - A. have too much risk for the expected return.
  - B. would be desirable if only they were possible.
  - C. do not use all of the assets in the portfolio.
  - D. fall within the set of feasible portfolios.

7. An investor's degree of risk aversion will determine their
- A. optimal risky portfolio
  - B. risk-free rate
  - C. optimal mix of the risk-free asset and risky asset
  - D. capital allocation line
8. If an investor does not diversify his portfolio and instead puts all of his money in one stock, the appropriate measure of security risk for that investor is the
- A. stock's standard deviation
  - B. variance of the market
  - C. stock's beta
  - D. correlation with the market index
9. Investing in two assets with a correlation coefficient of 1 will reduce which kind of risk?
- A. Market risk
  - B. Unique risk
  - C. Unsystematic risk
  - D. With a correlation of 1, no risk will be reduced.
10. The efficient frontier represents a set of portfolios that:
- A. maximize expected return for a given level of risk.
  - B. minimize expected return for a given level of risk.
  - C. maximize risk for a given level of return.
  - D. None of the options are correct.
11. Since each share of common stock represents ownership in a company, shares of common stock are often referred to as
- A. illiquid investments
  - B. equity securities.
  - C. fixed-income securities.
  - D. unit-cost securities.
12. VGG, Inc. declares a 2-for-5 stock split. The stock currently sells for \$4 a share. A shareholder who owned 1000 shares of VGG stock prior to the split will now own
- A. 400 shares valued at about \$10.00 a share.
  - B. 440 shares valued at about \$1.60 a share.
  - C. 2500 shares valued at about \$1.60 a share.
  - D. 250 shares valued at about \$11.60 a share.
13. Stock which has been issued and subsequently reacquired by the issuing corporation is called
- A. letter stock.
  - B. treasury stock.
  - C. classified stock.
  - D. book stock.

14. The Charbridge Inc. has 4 million shares of stock outstanding. The stock has a par value of \$1.00 per share and is currently trading at \$36 per share. Nicole estimates the investment value of this stock at \$38.50. According to this information, the market capitalization of Charbridge is
- A. \$144,000,000.
  - B. \$154,000,000.
  - C. \$4,000,000.
  - D. \$72 million.
15. The common shares of the Chevrotin Ltd have a book value of \$43.20 and a market value of \$57.20. The company pays \$0.56 in dividends each quarter. What is the dividend yield?
- A. 1.0%
  - B. 10%
  - C. 3.9%
  - D. 5.2%
16. Which one of the following statements is correct?
- A. Stock prices are independent of the economic cycle.
  - B. Stock prices change simultaneously with the economy.
  - C. Stock prices often start to rise before the end of a recession.
  - D. Changes in stock prices generally lag changes in the economy.
17. Which of the following would be typical of a Statement of Cash Flows for a healthy firm in a sustainable business?
- A. Cash flow from operations is negative, cash flows from investment activities and financing activities are positive.
  - B. Cash flow from operations, investment activities and financing activities must all be positive.
  - C. Cash flow from operations is positive, cash flows from investment activities and financing activities are negative.
  - D. If the Statement shows a net increase in cash, the source is unimportant.
18. Which of the following positively impacts the stock market?
- A. An increase in interest rate
  - B. A decrease in the inflation rate
  - C. A contractionary monetary policy
  - D. An increase in the unemployment rate
19. Which of the following businesses will be positively impacted by a strong dollar?
- A. a retail firm that sells only domestic made products
  - B. a firm that buys 55% of its inputs from Japan
  - C. a firm that sells 85% of its product to buyers in other countries
  - D. a financial planner
20. The government has an expansionary economic policy when it
- A. increases taxes.
  - B. increases government spending.
  - C. promotes rising interest rates.
  - D. limits exports of goods and services.

**Part B: Numerical and Essay Questions (60 points)**

Answer **all** questions in this section using the space provided. Answers are expected to be succinct but complete. Answers that are too long and irrelevant will be penalized.

**Question 1** A complete portfolio consists of two parts: An optimal risky portfolio and some risk-free assets. There are two assets in the optimal risky portfolio: A stock and a bond. We find that the weights of each asset in the optimal risky portfolio are  $W_b(O) = 0.7$  and  $W_s(O) = 0.3$ . Also, the rate of return on bonds and stocks are 8% and 16%, respectively. Assume the preferred complete portfolio, C, consists of 45% risk-free assets and the rate of return on risk-free assets is 4.5%.

1. [ 6 points ] Find the rate of return for C.
2. [ 3 points ] Find the Sharpe ratio for the optimal portfolio if the SD of the portfolio is 10%.
3. [ 3 points ] Interpret the value for the Sharpe ratio.

**Question 2** Last year, Rocket Inc. earned a 32% return. Farmer's Corp. earned 8.5%. The overall market return last year was 15%, and the risk-free rate was 2%. Rocket stock has a beta of 1.8 and Farmer's has a beta .5.

1. [ 3 points ] Considering beta, assess the impact on the required return of Farmer's Corp if the market return increases by 12%.
2. [ 4 points ] Calculate the expected rate of return on each asset using CAPM.
3. [ 3 points ] Which stock performed better once you take risk into account?

**Question 3** Ron's Rodents Co. has total assets of \$4.5 million and total short- and long-term debt of \$2.1 million. Also, the EPS of the firm is \$3.8 and is paying a dividend of \$1.1 per share. This firm does not have any preferred stock outstanding.

1. [ 3 points ] What is the firm's total book value?
2. [ 3 points ] What would its book value per share be if the firm had 330,000 shares of common stock outstanding?
3. [ 5 points ] Calculate the dividend payout ratio. What is the importance of this ratio for an income-oriented investor.

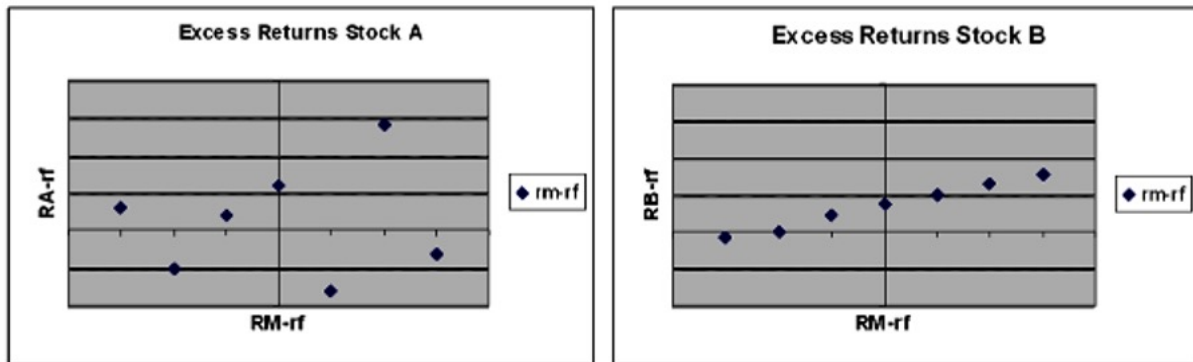
**Question 4** Consider the following table.

Portfolio	Expected Return	Portfolio Risk
A	15	4
B	12	6
C	18	8
D	22	12

1. [ 3 points ] Briefly explain the mean-variance criterion.
2. [ 4 points ] Which of the given portfolios would be off the efficient frontier? Briefly explain your answer
3. [ 3 points ] What portfolio is the mean-variance portfolio? Why?



**Question 5** The figures below show plots of monthly excess returns for two stocks plotted against excess returns for a market index.



1. [ 4 points ] Which stock is riskier to a nondiversified investor who puts all his money in only one of these stocks? Briefly explain.
2. [ 4 points ] Which stock is likely to further reduce risk for an investor currently holding her portfolio in a well-diversified portfolio of common stock? Briefly explain.

**Question 6** An investor is interested in investing in the computer manufacturing industry in the U.S. Some examples are HP, Dell, and Apple.

1. [ 6 points ] In relation to a study of the industry, briefly explain the effects of the following. Please be precise and concise.
  - More companies allow workers to work remotely.
  - A decrease in the interest rate.
2. [ 4 points ] What is the life cycle stage of this industry? Briefly explain your answer.
  - Initial Development
  - Rapid Expansion
  - Mature Growth
  - Stability or Decline

——— *End of Examination* ——