Final Exam
Economics 252 Financial Markets
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There are four parts to this exam. In each part, answer seven of the ten questions, four minutes each, 112 minutes total. You have three hours to do the exam. Exam is not open book.

Part I. Answer any seven of the following ten problem questions, 4 minutes each (It is enough to show an expression for your answer without doing the final arithmetic).

1. Between April 24, 2007 and May 7, 2007 there were ten trading days and the Dow Jones Industrial Average closed up 9 times and closed down only 1 time.

   a. Assuming a random walk, what is the probability of the stock market showing this many increases in any ten day period?

   b. Is this convincing evidence that stock prices are not a random walk? Explain

2. Argent College has an unusual endowment that consists exclusively of one silver mine that produces $10 million of silver each year. Unfortunately, the mine will be exhausted after 25 years ($250 million) and will have to shut down forever. The college plans to stay in business as an educational institution forever. The college can borrow and lend at the riskless rate, which is always 5% a year. Expenses for educating one student for one year are $50,000, and will remain fixed at that level forever. Argent College pledges never to raise its tuition. There are 1000 students. Using the income from the endowment to help defray expenses, what tuition must the College charge per year to break even?

3. John owns one call for 100 shares of IBM stock with strike price of $110 and one put for $100 shares of IBM with strike price of $90. The price of a share of IBM stock is $104. Both mature one year from now.

   a. Which of his options is in-the-money?

   b. Does John hope for the price of IBM to go up or down? Explain

   c. Does John hope for big economic news or a quiet time for the next year? Explain.

   d. Can you think of another portfolio of puts and calls for which John would have the opposite hope from that in c. above?

4. Mary has a portfolio which consists of 100 shares of IBM stock and is long one put for 100 shares of IBM stock and with strike price of $100 and is *short* one call for 100 shares of IBM stock with the same strike price. IBM is not paying dividends. The interest rate is 5%. What is her portfolio worth? Explain.

5. Expecting a big surge in demand for heating oil next winter, storage facilities are so full that they are charging $10 a barrel to store a barrel for a year. The price of a barrel of oil today is $62. The interest rate is 10%. What do you expect the one-year ahead futures price to be? Explain.

6. You are managing a portfolio worth $1 billion today. Your strategy creates a 52-48 chance that the portfolio will increase by $100 million each year, otherwise it will decline by $100 million. Each year is independent. You have a winning strategy in that the portfolio is more likely to go up than go down. There is still a chance, however, that you will eventually be wiped out. What is the probability of this bad event?

7. What is the monthly payment on a $500,000 25-year mortgage if the mortgage rate is 6%?

8. If I put 50% of my portfolio in a stock with expected return of 5% and a standard deviation of 10% and 50% in a stock with expected return of 20% and a standard deviation of 60%, and assuming that the two stocks are perfectly correlated, what are the mean and standard deviation of the portfolio?

9. What is the yield of a 60-day T-bill whose asked is 6%?

10. Write an expression for the present value of a cash flow that is $x in the next period, grows at rate g for T periods, and then falls to zero.

Part II. Answer any seven of the following ten questions, 4 minutes each.

11. Describe long-term trends in household debt in the United States.

12. What is the difference between defined benefit and defined contribution pension plans?

13. What are the differences between a broker, a dealer, and a broker-dealer?

14. What is the “crowd” at the New York Stock Exchange?

15. Define the “Taylor Rule”

16. How does Basel II differ from Basel I?

17. What is the Eurozone, and how does it relate to the European Central Bank and the Bank of England?

18. What caused the Mexican crisis of 1994-5?

19. What is the Allais Paradox, and why does it contradict expected utility theory?

20. What is a first-order autoregressive model?

Part III. Answer any seven of the following ten questions, 4 minutes each.

21. Describe the functions of the Options Clearing Corporation

22. What is adjustable-rate preferred stock?

23. What is a subprime loan, and what is the news about them lately?

24. What are program trades on the stock market?

25. What is the difference between systematic risk and systemic risk?

26. What is the definition of liquidity?

27. What is the Public Securities Association (PSA) prepayment benchmark?

28. What is the difference between a load fund and a no-load fund?

29. What are abnormal returns?

30. What is a call provision?

Part IV. Answer any seven of the following ten questions, 4 minutes each.

31. What percent of Yale's endowment portfolio is in traditional US equities? What percent is "equity-like"? Does Yale differ significantly from the typical university endowment in these dimensions, and if so why?

32. What did Andrew Redleaf think about investment managers buying well-known big investments like General Electric stock versus less-known investments like Sun Country stock?

33. What was Sam Masucci's thought about the career consequences of getting involved with emerging and controversial new investment vehicles like Shared Appreciation Mortgages?

34. What was Holbrook Working's definition of a futures contract? Why does he not mention deferred delivery as part of the definition?

35. Do single-family home price resemble random walks through time? How would you characterize the difference?

36. What, in brief, did Yale Prof. Irving Fisher write in 1930 was the cause of the 1920s boom and 1929 crash of the stock market?

37. What are futures options?

38. Briefly describe Edgar Lawrence Smith's view of the stock market in his 1925 book.

39. What does Jeremy Siegel conclude about stocks as hedges against inflation?

40. A *Wall Street Journal* article (April 30, 2007) chronicles (see clip below) the increasing leverage of hedge funds. What is leverage, what is a hedge fund, and why might we be concerned about the leverage of hedge funds?