

Final Examination Practice Questions

The final exam for Econ 423 will be held at 8:00 on Thursday, December 14, 2006, in our regular class room. The following are practice questions for the exam. Students may work together to prepare these questions. The exam itself is closed books and closed notes.

Here are points to keep in mind in preparing for the final.

1. The exam will comprise approximately 20 multiple choice questions and one essay examination.
2. The examination will focus on material, exercises and readings that we covered in class or that were partially covered and left for students to finish. Questions about present value and internal rate of return are also fair game.
3. Answering some of the multiple choice questions will require computation. Students should bring calculators with them to class.
4. My office hours for the examination period will be posted on the web page as soon as I set them

Practice Questions

1. It is January, 2006, and you have decided to plan your life. You plan to have one child who will enroll at UNC in January, 2031. You estimate that you will need \$100,000.00 in January, 2031, to finance the expense of your child's college education package. You expect to earn, on average, 8 percent on any funds that you save during the next 25 years.
 - a. UNC offers you the following prepayment option. Pay \$20,000.00 now and UNC will cover the cost of your child's education package in 2031 provided (s)he is admitted. If (s)he is not admitted, UNC will refund your money including compound interest computed at 8 percent? You do not have \$20,000 but your parents will lend it to you. Should you take advantage of the prepayment option? Explain your answer completely and show any calculations in complete detail. There will be a substantial penalty for an incomplete answer.
 - b. Suppose that you decide to turn down the prepayment option for some reason. You decide instead to save a constant amount at the end of each year to finance your child's college education package. How much must you save each year? Explain your answer completely and show any calculations in complete detail. There will be a substantial penalty for an incomplete answer.
2. Financial economists argue that asymmetric information helps explain many of the features of financial contracts. They also believe that asymmetric information problems have contributed to financial crises.
 - a. Define "adverse selection." Provide an example that explains how commercial banks face adverse selection problems.
 - b. Define moral hazard. Explain clearly the difference between moral hazard and adverse selection.
 - c. In what sense did asymmetric information problems contribute to the Asian financial crisis of 1997-98? Explain.
 - d. In what sense does FDIC insurance of transactions balances create asymmetric information problems? Explain.

3. This question is about the expected utility hypothesis.
- Why is it that an individual whose utility of wealth function is $U = \log(W)$ is said to be risk averse?
 - Suppose an individual whose initial wealth is \$100.00. Will this individual play a game where a fair coin is tossed and the individual wins \$11.00 if the outcome is heads and loses \$10.00 if the outcome is tails? Explain.
 - Suppose 100 people are endowed with the above game. Each person has the preferences and initial wealth described in part b. Each will face an independent toss of the coin. Explain how you can form an "insurance" company that will trade with each individual and make a profit.
4. In *A Monetary History of the United States: 1867-1960*, Milton Friedman and Anna Schwartz attribute the widespread bank failures that occurred during the Great Depression to contagion. Why, according to Walter ("Depression-Era Bank Failures: The Great Contagion or the Great Shakeout?"), is the reason for the large number of bank failures do to an industry shakeout rather than contagion?
- What does Walter mean by "contagion."
 - What does Walter mean by a shakeout?
 - Why, according to Walter, was the banking industry ripe for a shakeout in the years of the Great Depression?
 - What evidence presented by Walter is most compelling that forces other than panic contributed to bank failures that occurred during the Depression?
 - Why, according to Walter, is it appropriate to compare the banking industry with others that experienced shakeouts?
5. Consider a bond with a face value of \$1000.00 and a coupon rate of 5 percent which matures in 4 years.
- Assume that the market rate of interest is 4 percent and is expected to remain constant for at least four years. Give an expression for the present value of this bond. You need not evaluate this expression but you do need to say whether the market price of the bond is greater or less than \$1000.00? Explain why.
 - Suppose that the market rate of interest is 4 percent and expected to remain there. Then testimony by the Chairman of the Federal Reserve Board about future monetary policy leads people to believe that the market interest rate will rise to 6 percent in two years time. **How and when will the price of the bond change? Explain.**
6. Consider a world with many agents. Each is an expected utility maximizer with the utility function $\log(W/W_0)$ where W is wealth and W_0 is initial wealth. Each agent has initial wealth of \$1000. Each agent faces the risk of an accident which will cost \$100. Type G agents have a .25 probability of an accident. Type B agents have a .75 probability of an accident. The population contains equal numbers of Type G and Type B agents. Suppose there is an insurance company can not identify G and B agents in advance.
- Define adverse selection and explain why the insurance company faces an adverse selection problem?
 - Define "incentive compatibility" and "individual rationality."
 - Suppose the insurance company offers two types of contracts. A Type-1 contract pays 20 percent of any loss and has a premium of \$5.00. A Type-2 contract pays 100 percent of any loss and has a premium of \$65.00. Why would the insurance company offer two different contracts such as these? Explain.
 - Show that the contracts in part c satisfy incentive compatibility.

7. A decision maker (Ari) has initial wealth of \$100 and a utility function given by $\log(W/W_0)$ where W is wealth and W_0 is initial wealth.
- Define risk aversion and verify that Ari is risk averse.
 - Ari has the opportunity to buy an investment project. The project cost \$25 and pays zero with probability p and \$50 with probability $1-p$. How large must p be for Ari to be just willing to buy the investment. Be as explicit as you can and show your work.
8. What, according to Fisher, determines the equilibrium value of the rate of interest?
- Is Fisher's theory a theory of nominal interest rates or inflation-adjusted interest rates?
 - How does the impatience of an economy's population affect its rate of interest?
 - In what sense, does a market for loans produce coordination among those who initially may have very different investment opportunities and very different degrees of impatience?
9. The treasury yield curve for December 10, 1993 provided the following term structure of rates.

Maturity	Rate
3 months	5.40
1 year	5.30
2 year	5.27
3 year	5.40
5 year	5.65

- According to the expectations hypothesis what interest rate is "the market" forecasting to occur for the one year period Dec 10, 1995 to Dec. 9, 1996? Use the data from the diagram and show your work in complete detail.
- Contrast how proponents of the liquidity premium hypothesis and the expectations hypothesis would explain the steepness of the yield curve. Along the way, explain clearly the differences in the two theories especially with respect to each theory's assumptions concerning attitudes of bond holders toward risk.