

Second Midterm Exam

Fall 2019

Econ 180-266

Closed Book.

Calculators OK.

Time Allowed: 1 Hour 15 minutes

All Questions Carry Equal Marks

Section A: True or False

3 points for each correct answer; -3 points for each incorrect answer; 0 points for questions left unanswered. Total score on section A cannot be negative.

Please say if each of these statements is true or false.

1. Federal Home Loan Banks can receive interest on the reserves that they hold at the Fed.
TRUE or FALSE.
2. The Taylor rule states that higher levels of unemployment should imply a higher level of interest rates.
TRUE or FALSE.
3. Residential mortgages are recourse loans in all states.
TRUE or FALSE.
4. The European Central Bank has a dual mandate to have low and stable inflation and maximum sustainable employment.
TRUE or FALSE
5. The number of public companies in the US has fallen in the last twenty years.
TRUE or FALSE.

Section B: Multiple Choice.

4 points for each correct answer; -1 points for each incorrect answer; 0 points for questions left unanswered. Total score on section B cannot be negative.

1. Which of the following best describes the semi-strong form of the efficient markets hypothesis?
 - A. Stock price returns cannot be predicted using any information, public or private.
 - B. Stock prices returns cannot be predicted using any public information.
 - C. Stock prices returns cannot be predicted using any past price movements.
 - D. Stock prices returns cannot be predicted using past price movements and trading volume.
 - E. Stock prices returns cannot be predicted using any private information.
2. At the end of 2017, a stock price is \$40. At the end of 2018, it's price has fallen to \$38, but in 2018 it paid a dividend of \$2. What is the holding period return for this stock in 2018?
 - A. -5 percent.
 - B. 0 percent.
 - C. 5 percent.
 - D. 10 percent.
 - E. 96 percent.

3. Which of the following is the definition of *latency* in market microstructure?
- A. The number of orders in an order book that cannot be seen.
 - B. The size of transactions.
 - C. The time that it takes to execute a trade.
 - D. The difference between the bid price and the ask price.
 - E. The number of trades that are not on organized exchanges.
4. According to the standard version of Okun's law discussed in class, if unemployment is 1 percent below NAIRU, what is the output gap?
- A. 2 percent.
 - B. 1 percent.
 - C. 0.5 percent.
 - D. -1 percent.
 - E. -2 percent.
5. Which of the following is the best definition of an investment grade bond?
- A. A bond that trades on the New York Stock Exchange.
 - B. A bond that issued by a firm that has never filed for bankruptcy.
 - C. A bond that has an S&P rating of BBB or higher.
 - D. A bond where the face value of the amount outstanding is at least \$100 million.
 - E. A bond that has been registered with the Securities and Exchange Commission.
6. Which of the following is following is the Federal Reserve's inflation target?
- A. A target of 0 percent inflation as measured by the CPI price index.
 - B. A target of 2 percent inflation as measured by the CPI price index.
 - C. A target of 3 percent inflation as measured by the CPI price index.
 - D. A target of 2 percent inflation without specifying a specific price measure.
 - E. A target of 2 percent inflation as measured by the PCE price index.
7. Which of the following best describes the Treasury-Fed Accord?
- A. An agreement that led to the founding of the Fed in 1913.
 - B. An agreement that gave the Fed control of short term interest rates in 1951.
 - C. An agreement that gave the Fed independence from the Treasury in 1997.
 - D. An agreement that the Fed would buy government bonds during World War 2.
 - E. An agreement that the Treasury would control interest rates in 1932.
8. The study of Keys et al. (2009) found that default rates on mortgages with FICO scores just above 620 were higher than on mortgages with FICO scores just below 620. Which of the following explanations did they propose:
- A. FICO scores are poor measures of default risk.
 - B. Mortgages with borrower FICO scores above 620 get a tax break.
 - C. Mortgages with borrower FICO scores above 620 get better treatment for Basel regulation purposes.
 - D. Borrowers with no income and no assets are eligible for mortgages with a FICO score above 620.
 - E. Mortgages with borrower FICO scores above 620 were easier to securitize.

9. Which of the following is closest to a typical bid-ask spread in the interdealer foreign exchange market (say for a trade of 1 million euro)?

- A. 1 basis point.
- B. 10 basis points.
- C. 50 basis points.
- D. 1 percentage point.
- E. 2 percentage points.

10. When securities are issued under a rights issue, which of the following is true?

- A. Shares are offered to the public at a discount.
- B. Existing shareholders have the right to sell their shares back to the issuer.
- C. Existing shareholders have the right to convert their shares into debt.
- D. Existing shareholders have the opportunity to buy additional shares.
- E. Existing shares should increase in price.

Section C: Other questions

1. (10 points). Suppose that Shaffer enterprises goes bankrupt, owing \$1 million to preferred shareholders, \$1 million in taxes, \$1 million to employees (wages and salaries) and \$2 million to its bondholders. Liquidating the assets of Shaffer enterprises raises \$2.5 million. If strict priority rules apply and there are no other creditors:

- (a) How much will be paid to employees owed wages and salaries?
- (b) How much will be paid in taxes?
- (c) How much will be paid to bondholders?
- (d) How much will be paid to preferred shareholders?

2. (10 points). Suppose that a collateralized mortgage obligation has three tranches: senior, mezzanine and junior. It pays no coupons. The value of the senior tranche is \$300,000,000. The value of the mezzanine tranche is \$100,000,000. The value of the junior tranche is \$100,000,000. The underlying mortgages end up paying off \$390,000,000.

- (a) How much money will be paid to the holders of the senior tranche?
- (b) How much money will be paid to the holders of the mezzanine tranche?
- (c) How much money will be paid to the holders of the junior tranche?

3. (15 points).

- (a) Give a reason why firms may prefer to buy back stock instead of paying dividends.
- (b) Why is the Federal Reserve operating a reverse repo facility?
- (c) Name two other actions that the Federal Reserve can take to boost the economy if it has already cut the federal funds rate to zero, and cannot drive rates below zero.

4. (10 points). Suppose that a stock is expected to return 10 percent per year with a standard deviation of 16 percent a year. The riskfree rate is 2 percent. What is the Sharpe ratio for this stock?

Solutions

Section A.

1. False.
2. False.
3. False.
4. False.
5. True.

Section B.

1. B.
2. B.
3. C.
4. A.
5. C.
6. E.
7. B.
8. E.
9. A.
10. D.

Section C.

1. (a) \$1million.
(b) \$1 million.
(c) \$500,000.
(d) \$0.

5 points for reversing (c) and (d). No credit for other errors.

2. (a) \$300,000,000.
(b) \$90,000,000.
(c) \$0.

No partial credit.

3. (a) Because it is easier to cut share repurchases than to cut dividends.

(b) To maintain control of short term interest rates. Otherwise, the Fed is worried that short term interest rates might fall below the target.

- (c) Large scale asset purchases and forward guidance.

5 points for each part. I accepted answers such as reduce reserve requirements in part (c) because they could support the economy, even though they are not really options that the Fed would think of for dealing with a downturn.

4. $(16-2)/10=0.5$.