

Answer Sheet Midterm exam II
266: Fi. Markets and Institutions
Spring 2015
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Directions:

You have 70 min. to do the exam.

The first question offers choice on which parts you do, so read carefully.

Where computations are required, full points will be given for the correct answer.

The proper formula with the relevant values plugged in will get near full points.

You may write on the backs of the exam pages and request additional paper.

If your answer extends outside the space provided, you must label clearly where the additional portion is located.

1 **Do 4 of 5.** Definitions. Give the definition of the following words.

1.1 Secondary market

Answer: Markets in which securities are traded after they have been sold to the public for the first time.

1.2 Bid-ask spread

Answer: The difference between the price at which you can sell a security (bid price) and the price at which you can buy a security (ask price) on a given market.

1.3 1-day, 95% Value at Risk

Answer: Dollar value, $\$V$, such that the firm has only a 5 percent chance of losing more than $\$V$ in 1 day. That is, 95 percent of the time the firm loses no more than $\$V$.

1.4 Shadow banking system

Answer: Broad term referring to a collection of financial institutions that are not banks but offer traditional banking services (outside the regulatory framework applied to banks).

1.5 Mark-to-market accounting

Answer: In mark-to-market accounting, the firm's balance sheet reflects the current market value of marketable securities it owns (rather than, say, the purchase price or some other notion of fair market value).

2 **Facts.** Give the approximate size of the following. Be sure to state the units.

2.1 What is a typical ROE for U.S. banks over the past few years (after the recent crisis)?

Answer: 10–12 percent.

2.2 Loans are about what share of U.S. bank assets?

Answer: About 50–60 percent.

2.3 Since the crisis a small number of banks in the U.S. have become much larger than the rest. How many of these large banks are there?

Answer: Four. (Note: JP Morgan Chase, Bank of America, Wells Fargo and Citibank)

2.4 Over most long periods, the overall return on a broad portfolio of U.S. stocks market has earned a much higher rate of return than the rate of return on government securities over the same period. True/False (circle one).

Answer: True.

2.5 Over periods of, say, several months or a few years, the return on the broad U.S. stock market has been negative. Give two prominent examples of periods like this in the time since 1980.

Answer: A few: the Dotcom bubble around 2000, the financial crisis from 2007–2009, October 1987 (Black Monday).

3 The right price for equities.

3.1 Define the price-earnings ratio of a company.

Answer: Ratio of a company's current share price to its current earnings per share.

3.2 Suppose that the typical price-earnings ratio in the soft drink industry is 20, and the soft drink company Spittle has earnings per share of \$2, what does this suggest would be a reasonable price for Spittle shares?

Answer: The following is an identity:

$$P = \frac{P}{E} * E$$

where P is price per share and E is earnings per share. To get a sense of a reasonable price for Spittle shares, we can use the industry price-earnings ratio and Spittle's earnings per share above.

$$P = 20 * 2 = 40$$

- 3.3 The Gordon growth model gives a guide to the value of a stock in the form of the following equation:

$$P_0 = \frac{d_1}{r - g}$$

The variable r is the required return on Spittle shares. Briefly describe what the variables d_1 and g are in these equations.

Answer: In the Gordon model, dividends are assumed to grow at a constant rate g starting from an initial value d_1 .

- 3.4 Suppose the price of Spittle shares is \$60. Using the Gordon growth model, a reason why Spittle shares might be priced so high relative to current earnings.

Answer: The Gordon growth model suggests a few possibilities. Perhaps Spittle dividends are expected to grow especially rapidly (more rapidly than is the norm in the industry), or perhaps the required rate of return for Spittle r is low because it has a negative beta and therefore provides a good hedge against portfolio risk.

4 The business of banking.

- 4.1 Here is a balance sheet for a bank. Fill in the three blanks with the proper values.

Balance Sheet: Bank of Zeus			
A		L	
Reserves	5	Deposits	60
Loans	55	Borrowings	11
Securities	30	Other	3
		Net worth	16
Total	90	Total	90

Note: All dollar values in this problem are in \$100 millions.

- 4.2 Suppose that the bank receives a net deposit inflow of \$3 and immediately purchases additional securities in the same amount.

What does this do to net worth? [raise it][lower it][no change] (circle one)

What does this do to leverage? [raise it][lower it][no change] (circle one)

Answer: Net worth stays the same; leverage goes up.

- 4.3 Suppose that this bank faces an unexpected net deposit outflow that it could not meet with current excess reserves. Describe two steps the bank could take to meet the outflow.

Answer: For example, the bank could try to borrow from other banks, or borrow from the Fed (using the discount window). The bank could also sell some liquid securities.

4.4 What is credit risk? Describe 3 steps banks take to manage credit risk.

Answer: The risk that the issuer of some bank asset will not make contractual payments.

Banks carefully screen borrowers and then monitor their activities. Banks often require collateral. Finally, banks diversify their portfolio of loans and other assets.

5 The role of banks in the economy.

5.1 Explain why banks are important to depositors. (That is, what essential service does the banking system provide to depositors?)

Answer: Banks provide a safe and liquid asset for the nonfinancial sector. This liquidity is essential to businesses and households.

5.2 Explain how the too-big-too-fail problem might lead to a situation in which very large banks would be able to sell debt or raise capital more cheaply than smaller banks.

Answer: Large firms with implicit backing from the government might be able to borrow cheaply because creditors will be less worried about default risk.

5.3 Name and briefly describe two steps that the government has taken to overcome the too-big-to-fail problem since the crisis.

Answer: The government is increasing monitoring and regulation of these big banks, and especially is requiring them to hold more capital than ever before and maintain high levels of liquid assets. The government is also making the large firms create 'living wills' that increase the chance that the large institution could be wound down without causing a crisis.

6 Chocolate, Balance Sheets, and Leverage Patricia Little, CFO of Hershey Company told the class that Hershey sought to have more debt and higher leverage than many companies such as Kelly services, where she was recently CFO. Why does it make sense for Hershey to have higher leverage?

Answer: Higher leverage increases the riskiness of the firm, but also increases return on equity. Hershey's income is very steady and does not vary

much with the business cycle. Hershey can run higher leverage to present equity holders a more attractive (but riskier) return. Kelly, for example, is extremely sensitive to the business cycle and has quite variable earnings. High leverage would push the risk of bankruptcy to unsustainable levels.