

## Second Test, Spring 2000

1. (8 points) Suppose these three Treasury issues currently (4/19/00) trade at these prices:

	Issue	Coupon	Bid	Ask
Feb 05 note	7½	105:08	105:10	
Feb 05-10	11¾	122:30	123:04	
Feb 05 np	0	74:12	74:15	

All three mature on the 15<sup>th</sup>, and Feb 05-10 becomes callable at par on 2/15/05. Is there an arbitrage here? If yes, what does your arbitrage argument depend on, and if no, why not?

2. (8 points) “Allowing insiders to trade boosts trading, and thereby increases liquidity, so we should stop criminalizing and start encouraging this activity.” Comment on this statement carefully.
3. (8 points) You and some classmates decide to enter private equity by starting the Wharton VC fund, and your pitch to potential limited partners is that your fund dominates those of existing VC firms because of your connections to other new Wharton grads. How might the potential LP’s respond?
4. Everybody is risk-neutral, and the risk-free rate is 0%. There are prime and sub-prime consumers, and if you, the owner-entrepreneur, invest \$100M in a portfolio of consumer receivables, then they payoffs of that portfolio, at current market prices, depend on the type of consumer, and whether there is Depression (D) or Prosperity (P) which each have probability ½:

	Depression	Prosperity
Subprime	\$0M	\$180M
Prime	\$90M	\$120M

- a. (5 points) Suppose you have no way to commit to which type of consumer you invest in. Does it work to finance with \$80M face value of debt (and paying the rest of the \$100M yourself)?
- b. (5 points) Suppose that, right after you choose the portfolio, it can be liquidated for 50 cents on the dollar (i.e. for \$50M). If creditors can observe the type of consumer you choose and you give them the right to liquidate right after you choose, is it now possible to finance with \$80M face value of debt?

5. (8 points) An insurance company holds a \$100M portfolio of BBB-rated bonds. Because of ratings-based capital requirements, they would rather hold \$100M- $x$  of AAA-rated bonds and \$ $x$  of B-rated bonds, where  $x$  is as small as possible. But they still want to get the returns they would get from the portfolio of BBB-rated bonds. How, generally speaking, could an investment bank help out?
6. (9 points) Here's a picture from the 4/17/00 *Wall Street Journal*, showing the path of the Dow-Jones Industrial Average on 4/14/00. To an opportunistic investor, this path represented – in expectation - an opportunity to
  - A) Buy Small-Cap mutual funds at a bargain on 4/14
  - B) Sell Small-Cap mutual funds at a bargain on 4/14
  - C) Buy Small-Cap mutual funds at a bargain on 4/17
  - D) Sell Small-Cap mutual funds at a bargain on 4/17
  - E) None of the above

Which answer is best? Justify your choice, and disregard what actually transpired on 4/17; the perspective of this question is that of an investor who is deciding, during the trading hours of 4/14, whether to submit an order to a mutual fund company before the 4/14 close (i.e. 4PM), in which case he'll get the 4/14 mutual fund price, or after the 4/14 close, in which case he'll get the 4/17 mutual fund price.

7. A company, now worth \$95MM, has a \$120MM face-value bond maturing soon, held in \$20MM blocks by six institutional investors. So the company is facing bankruptcy, which it wants to avoid because it would be worth only \$60MM in bankruptcy. Suppose the company makes a voluntary exchange offer: exchange your 1/6 claim on the existing bond for a 1/6 claim on a bond with face value \$90MM.
  - a. (6 points) Show that everybody would win if the offer succeeded, but the offer won't succeed.
  - b. (3 points) How could you modify the offer to increase the chance of success?
8. We've seen strategies for constructing claims on securitizations such that, over a range of possible outcomes, there is no variation of the payments to the claim. Briefly outline each strategy, and characterize what happens to the claims' cash flows for outcomes *outside* the range where there is no variation.
  - a. (5 points) PAC bond
  - b. (5 points) Soft-bullet

9. (10 points) An all-equity company with 7M shares trades at \$8/share. Design a rights offering that would raise \$10M cash for the company, and show that it would work.