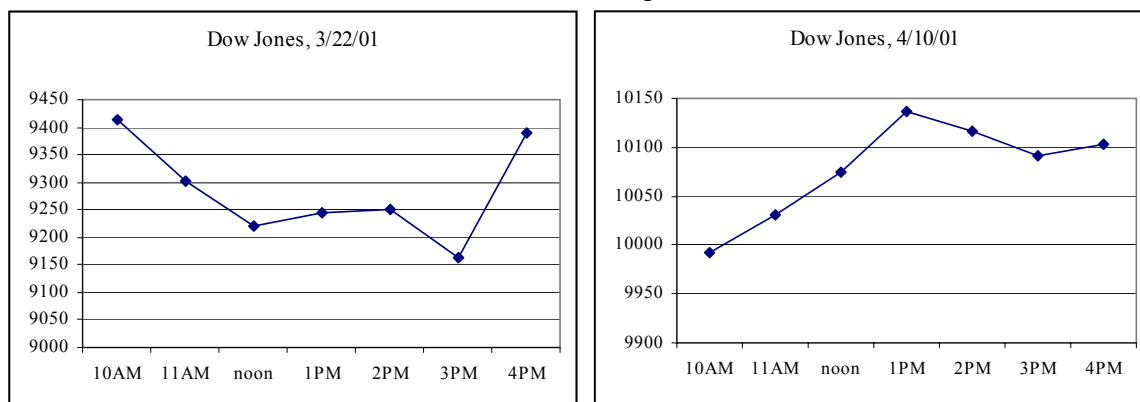


FUNDING INVESTMENTS
FINANCE 238/738, Spring 2001, Prof. Musto
Class 25 – SECOND TEST
80 minutes – 80 points



- Here are values of the Dow Jones Industrial Average, observed hourly on two recent days. Would there have been a profitable trade in mutual funds on one of these days? What trade, and what kind of fund? What makes it profitable?

The 3/22 graph shows a profitable opportunity to buy small-stock funds. This is because the NAV of a fund is calculated from last trades, and the last trade of a small stock was likely some time before the close, so it was lower than its true closing value, i.e. the price it would have transacted at, if it had transacted at 4PM. So the NAV is lower than the stocks' value, so it is a buying opportunity.

- Suppose you purchased a piece of a PAC bond of a residential mortgage securitization. How do you expect the payments you receive over the life of the PAC bond would be affected if, over the life of the bond,
 - The Treasury-bond market did somewhat better than expected, i.e. long-term Treasury-bond prices moved up moderately, and stayed up.
 - The Treasury-bond market did far better than expected, i.e. long-term Treasury-bond prices moved way up, and stayed way up.

A PAC bond is designed to have no payment variability within a window of prepayment outcomes. So a moderate increase in prices, which implies a moderate decrease in yields, would have no effect on the PAC. However, a very large increase in prices, implying a very large decrease in yields, would cause prepayment so fast that the PAC payments are affected. Specifically, the PAC would start receiving principal ahead of schedule once the companion bond is all paid off.

3. How (*briefly*) is the Green Shoe important to price stabilization? Any evidence for this perspective on the Green Shoe?

The Green Shoe gives the underwriter the option to expand the offering by up to 15% of the original amount. The way underwriters use this is to sell about 115% of the offering in the first place, and then buy back the extra shares off the open market if the offering is weak, or else buy the extra shares from the issuer if the offering is strong. This way, the underwriter can support the price with purchases, if necessary, and still sell the original amount, but if it is a strong offering the underwriter does not make a big loss on his short position because he can buy the shares at the offering price from the issuer. We saw that, in fact, shares are bought off the open market in cold offerings, and the green shoe is exercised in hot offerings.

4. Suppose the chief executive of Acme Corp tells a stock trader, “I believe I’ll need to sell 200,000 shares of Acme to raise some money. I know you’d be nervous about taking the other side of this trade *today*, and therefore you’d give me a low bid, but how about *next week*? Let’s agree *now* that next week, I can choose, *if I want*, to sell 200,000 shares to you at the bid you’re quoting then, plus ¼.” Does the executive’s offer address the concerns that make the trader nervous? Explain.

This is almost sunshine trading, but with a twist that reduces its effectiveness. By giving himself the option not to sell the shares, the CEO is allowing himself to trade on his future inside information. That is, everything the CEO knows now may become public in a week, but in a week the CEO will have new inside information and with this deal, he can sell if his info is bad, and do nothing if it is good. So his trading will be adversely selected, and the market maker will have to price appropriately.

5. On 4/13/01, The general repo rate was 5% but the repo rate for the current 10-year note was 3½%. You wish to hedge your interest-rate exposure by shorting \$50MM worth of the current 10-year note for a week. How much more will this cost you, due to the specialness?

You could have added in margin or not, it doesn’t matter. Without margin the answer is

$$(\$50MM)(1.5/100)(7/360) = \$14,583$$

6. Here are prices from 4/10/01 for three Treasury securities maturing 2/15/06:

<u>Coupon</u>	<u>Bid</u>	<u>Asked</u>	<u>Ask Yld.</u>
0	79:18	79:22	4.74
5 5/8	104:00	104:02	4.68
9 3/8	119:28	120:02	4.70

Is it cheaper to buy the 9 3/8 directly, or to buy the same cash flows using the other two bonds? Show your work.

Using the other two bonds, the cost is

$$(9.375/5.625)(104+2/32) - (3.750/5.625)(79+18/32) = 120.40$$

Slightly cheaper to buy the 9 3/8 directly for 120.06

7. MBNA is going to securitize its credit-card receivables, and is deciding whether to add to the securitization contract a requirement that the securitization go into early amortization if the default rate on the receivables goes above 5%. Would this addition
- increase,
 - decrease, or
 - leave unchanged

MBNA's exposure to the default risk of its receivables? Explain.

This increases MBNA's exposure to the default risk of its receivables, because for low default rates the investors finance the receivables, but when the default rate gets high the investors cash out, and MBNA has to resume financing them. That is, when the credit-card receivables start being -NPV, MBNA has to resume financing them directly, instead of making the investors eat the loss which is how it would be without this requirement.

8. Last Thursday (4/12/01), Bayview Capital Corp. announced a rights offering, where each shareholder gets one right for every 1.362 shares, and with a right you can buy one new share for \$4.59. Bayview Capital currently has 32.66M shares, and closed at \$5.20/share on Thursday.
- How much will the offering raise if all rights are taken up?
 - Disregarding market fluctuations, show that investors will exercise their rights no matter what they expect other investors will do.

The offering will raise $(32.66M)(1/1.362)(\$4.59) = \$110MM$

If n rights are exercised, the value of the company is

$$[(32.66M)(\$5.20) + n(\$4.59)]/[32.66M + n] =$$

$$(\$4.59)[(32.66M)+n]/[32.66M + n] + 32.66M(\$5.20-\$4.59)/[32.66M+n]$$

which is always more than \$4.59. So no matter how many other rights you think will be exercised, it is worthwhile to exercise your own rights.

9. There are two securities, A and B . Both cost \$100, and you can buy or sell any amount of either one. Their future payoffs depend on whether there is Depression D or prosperity P , which each have probability $1/2$:

<u>Security</u>	<u>Payoff in D</u>	<u>Payoff in P</u>
A	105	105
B	50	150

Suppose another security C that pays 0 in D and 50 in P sells for 25, and you can buy or sell any amount of C . Is there a profit opportunity here? Be precise.

What does it cost to buy exactly the cash flows of C using A and B ? Suppose we buy a of A and b of B . We need

$$105a + 50b = 0$$

$$105a + 150b = 50$$

$$\text{so } b = 1/2, \text{ and therefore } 105a = -50(1/2) \quad a = -25/105 = -0.2381$$

So the cash flows of C cost $50 - 23.81 = \$26.19$, so buy C and sell the replicating portfolio (i.e. buy 0.2381 of A and sell 0.5 of B), taking home a profit of $\$26.19 - \$25 = \$1.19$.