1. As of April 1, 2005, the Bond Markets Association reported that pools of 6.5\% mortgages originated in 2003 had a CPR of 26.8\%.
   a) (5 pts) What does this mean, exactly?
   The conditional prepayment rate measures the percentage of mortgages which are expected to prepay in the next year (which have prepaid in the previous year). The annual frequency was an important part of the solution.

   b) (5 pts) Suppose the CPR of 8.0\% mortgages originated in 1996 was also 26.8\%. Would this be plausible? What considerations are important?
   This is plausible. The main considerations here are the difference in the interest rates and the difference in age between the two mortgage pools. Mortgages with a higher interest rate will prepay more as the gains to refinancing is higher. However, older mortgages will prepay at a slower rate, due to burnout (the refinancing-sensitive mortgagors have already left the pool).

2. A press release (slightly edited) from December:

   (Marne-la-Vallee, 12/2/04) Euro Disney S.C.A., operator of Disneyland Resorts Paris, reported today that the company and other entities … have finalized and signed the legal documentation called for by the previously announced memorandum of agreement (MOA). Most of the terms of the MOA … remain subject to certain conditions including the condition that Euro Disney, subject to shareholders' approval, complete a capital increase for at least €250MM in the form of a rights offering. The Company has until March 31, 2005 to complete such a capital increase.

   In January, Euro Disney, which had 1.1BB shares outstanding at the time, trading at €0.26 each, announced an underwritten rights offering: for every five shares now held, you get 13 transferable rights, and with each right you can buy one new share for €0.09.
   a) (4 pts) Determine whether this offering is sufficient, by itself, to raise the €250MM.
   The number of shares to be issued = 1.1 * 13/5 = 2.86BB
   The amount of money to be raised = 2.86BB * €0.09 = €257.4MM
   The issue is underwritten, and therefore EU is guaranteed to raise the total amount of money. This offering is sufficient to raise €250MM.

   b) (3 pts) Characterize the offering’s underwriter’s exposure to Euro Disney.
   The underwriter will need to purchase any shares remaining unsold in the rights issue. As rights owners can trade them, this is not a concern unless the share price drops sharply. If the cum-rights share price falls below €0.09*13/5=€0.234, shareholders will not exercise their rights, and the underwriter will suffer losses.

   c) (3 pts). Bearing in mind that this offering is underwritten, how much should Euro Disney’s share price drop on the day the shares go ex-rights – that is, from the day when ownership determines who gets the rights (when the share price is €0.26), to the following day?
   Total value of company after rights issue = €0.26*1.1BB+257.4MM
   Share price after ex-rights = € 537.4BB/(3.96MM) = €137
3. (10 pts) What rationale (if any) is there for the following policies intended to reduce stale-price trading of a mutual fund’s shares?

a. (3 pts) Don’t let investors know which stocks the fund holds

At a minimum, not knowing the components of the mutual fund portfolio introduces some level of uncertainty and measurement risk to a would-be stale-price trader as they would not be able to identify the individual components and investigate whether and to what extent the prices of the individual securities are stale. Stale-price traders could, however, still trade based upon a broader strategy (e.g. for a micro cap mutual fund, if the market has gone up significantly late in the day, given the relative illiquidity of the individual components of the micro-cap sector it is likely some of the prices have not been updated and therefore the micro-cap fund value will not be updated).

b. (4 pts) Just before the close of each trading day, place an order to buy or sell (randomly) one share of each stock the fund holds

Executing a transaction at the end of each trading day will update the price to theoretically take into account market movements since the previous trade of the individual stocks. Accordingly, the prices for each of the individual holdings are no longer “stale” and the portfolio as whole is no therefore no longer stale. Additionally, by randomly executing a buy or a sell, there is not a bias towards the higher (ask) or lower (bid) side of the trading range, which is particularly large for illiquid stocks.

c. (3 pts) Don’t take any orders from fund investors after the market closes

Not taking orders after the market closes prevents would-be stale-price traders from being able to take advantage of post-closing market information such as company announcements and international markets activity, thus limiting at least some of the motivation that these traders have to conduct stale price trading.
Late last year, NGP Capital Resources went public, selling 16MM shares at $15 each. The underwriter, Raymond James, had an overallotment option (i.e. Green Shoe) of 2.4MM shares. Here’s the shares’ market performance over the following weeks:

<table>
<thead>
<tr>
<th>Date</th>
<th>$/share</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/8</td>
<td>14</td>
</tr>
<tr>
<td>11/15</td>
<td>14.25</td>
</tr>
<tr>
<td>11/22</td>
<td>14.5</td>
</tr>
<tr>
<td>11/29</td>
<td>14.75</td>
</tr>
<tr>
<td>12/6</td>
<td>15</td>
</tr>
</tbody>
</table>

a) (5 pts) Judging from the market price, is this IPO’s offering price likely to have been a discount from the price range announced in August, when NGP announced their intention to go public? Why or why not?

It is likely to have been a discount from the price range announced in August because the graph seems to show a cold aftermarket with very little increase in price. Underwriters generally know ahead of time what the general reaction to an offering will be (through road-shows), and price at a discount if they expect a weak reaction in order to make sure the offering sells. When the IPO is priced at a discount, the IPO ‘actual underpricing’ is generally very low (that seems to be the case here, where the shares were at 15 and then barely moved). The main reason the price has not gone down is probably because RJ is supporting it by buying back the over-allotment.

b) (5 pts) On November 29, NGP announced that Raymond James had exercised only a fraction of its overallotment option, 500,000 of the 2.4 million shares available. Is this consistent with what we see in the graph?

This is consistent with the graph. If the stock had dropped significantly, RJ would not have exercised the Green Shoe, and instead would have simply purchased the shares on the market. If the price had risen sharply, RJ would have exercised its Green Shoe option. In all likelihood, RJ oversold and has since repurchased most of the oversold shares to support the price (hence the relatively flat line). Towards the end, they exercised some of the Green Shoe since the price was slightly higher than the issue price.

5. From a meeting of the Financial Institutions and Consumer Credit Subcommittee, Rep. Bachus (chairman), speaking:
I remain hopeful that we can work with the Senate and the administration to resolve the coverage issue and get deposit insurance reform passed this year. All of us have heard from community bankers in our districts about the challenges they face daily in competing for deposits with large money-center banks that are perceived by the market rightly or wrongly as being too big to fail.

a)  (5 pts) What is the difficulty facing a small bank whose competitor is “too big to fail?”

A competitor who is too big to fail is viewed by the marketplace as having a lower risk profile and therefore the attractiveness of the institution to lenders is higher and the financing cost of this larger institution is lower. These lower financing costs come in the form of offering lower rates to depositors and lower rates on other borrowings.

b)  (5 pts) Suppose Congress passes a new law: if a run starts, the Fed can provide liquidity only for a week, while it figures out whether the bank is solvent. If it is insolvent, the Fed must close the bank and bail out only the insured deposits. How would this affect the incentives of large depositors to monitor banks? What considerations are important?

Large depositors would have less incentive to monitor banks than under current law. This new law provides a free option to the large depositor to take their money out of the potentially troubled bank during the one-week window, an option that the large depositor does not have under current law. Some important considerations related to the new law which help to answer how valuable this option is would include:

what limits, if any, are there to withdrawals during the one week window;

whether withdrawals impact the level of insurance provided to the withdrawer;

whether the Fed would continue to provide liquidity during the one-week window.
6. You are a market maker for GE, so you post a bid and an ask at which you will
honor the next order to sell or buy 1 share. GE will announce its earnings
tomorrow, and everybody knows that GE will be worth 40 if earnings are good,
and 38 if earnings are bad. The next order has a 25% chance of coming from an
Insider, and 75% chance of coming from a Day Trader. Insiders know for sure
what the stock will be worth tomorrow, and Day Traders think they know for sure
but you know that they are right only 70% of the time.

a. (3 pts) If a buy order comes in and you know it came from a Day Trader,
what is the expected value of a share?

\[(0.3)(38) + (0.7)(40) = \text{39.4}\]

b. (4 pts) At what Ask price do you break even, given that the chance that a
buy order came from a Day Trader is 75%?

\[(0.75)(39.4) + (0.25)(40) = \text{39.55}\]

c. (3 pts) Is the overconfidence of Day Traders good or bad for Insiders?
Explain.

Yes it is, because it leads them to make trades at which their expected profits - given their
true accuracy – are negative. This means the MM break even at prices that deliver
positive expected profits to Insiders.

7. In a March 18, 2005 press release, we read

Sunstone Hotel Investors, Inc., (NYSE: SHO) announced that it has closed its public
offering of 4,880,000 shares, including the underwriters’ exercise of the over-allotment
option, of 8.0% Series A and Series B Cumulative Redeemable Preferred Stock with a
liquidation preference of $25.00 per share for gross proceeds of $121,250,000 … Sunstone
Hotel Investors, Inc. is a Southern California-based lodging real estate company that
expects to qualify as a real estate investment trust for federal income tax purposes. The
Company owns 54 hotels primarily in the upper-upscale and upscale segments primarily
operated under nationally-recognized franchises, such as Marriott, Hilton,
InterContinental and Hyatt.

a. (5 pts) What kind of bond is this like? How is it unlike a bond?

This is like a callable bond (as it is redeemable). Furthermore, the schedule of dividend
payments is quite predictable, much like interest on a bond. Unlike a bond however, the
dividend payments are not required to be paid (can be skipped). In addition, the
seniority is lower than a regular bond, and there is no maturity date.

b. (5 pts) 8% would be very high for a bond yield. Why not just sell a bond?

First of all, because it is not an actual bond, they can skip dividend payments without a
risk of getting sued. Therefore, if the company expects to have some difficulty making
payments, this is a great alternative. Second, REIT’s aren’t taxable at the corporate level. As a result, there is no tax advantage to selling bonds. Furthermore, REIT’s must distribute 95% in each year, so they can’t accumulate a cushion in good years (thus making the prospect of paying actual interest quite risky to the company). Finally, covenants on existing bonds may preclude selling more debt, in which case preferred stock would be an excellent substitution.

8. Your company has a bond outstanding that matures Aug 15, 2011, and that pays an 8% coupon. Currently this bond is trading at 100.

a. (5 pts) Using the 4/11/05 prices from the WSJ (last page), how much would it cost to defease your bond? (Assume here that all the Treasury bonds mature on the 15th of the month, don’t worry about accrued interest on either your company’s bond or the Treasury bonds, and if you have a choice, don’t use a “ci” STRIP).

Buy (8/5) of the 5% Aug 11 Note at the Ask of 104.06, and buy (1 - 8/5) (negative, so we’re selling) of the Aug 11 STRIP at the Bid of 76.16.

This costs (8/5)(104 + 6/32) + (1-8/5)(76 + 16/32) = 120.8

b. (5 pts) Would your bond investors be sad, happy or indifferent about the defeasance? Explain.

They would be happy because the value of their bonds would rise from 100 to near 120.8
### Treasury Bonds, Notes and Bills

#### April 11, 2005

**Explanatory Notes**

Government bonds and notes are priced based on the latest closing price of the security. Government bills are priced based on the latest quoted price. Maturity dates are shown in the maturity column. Rates shown are for bonds maturing in the next 30 days. All prices are quoted in dollars per $100 face value. Prices are subject to change. Exchange rates are based on recent foreign exchange rates. For the latest exchange rates, please refer to your financial advisor.

**Source:** Federal Reserve Bank of New York

**Notes:** This page provides a snapshot of the Treasury market on April 11, 2005. The page includes a table with columns for maturity, rate, bid, ask, and change. The table also includes notes on how to interpret the data.

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Bid</th>
<th>Ask</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 years</td>
<td>3.50%</td>
<td>3.55%</td>
<td>0.05%</td>
</tr>
<tr>
<td>2-5 years</td>
<td>4.00%</td>
<td>4.05%</td>
<td>0.05%</td>
</tr>
<tr>
<td>5-10 years</td>
<td>4.50%</td>
<td>4.55%</td>
<td>0.05%</td>
</tr>
<tr>
<td>10-20 years</td>
<td>5.00%</td>
<td>5.05%</td>
<td>0.05%</td>
</tr>
<tr>
<td>20-30 years</td>
<td>5.50%</td>
<td>5.55%</td>
<td>0.05%</td>
</tr>
</tbody>
</table>

**Treasury Bills**

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Bid</th>
<th>Ask</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 month</td>
<td>0.50%</td>
<td>0.55%</td>
<td>0.05%</td>
</tr>
<tr>
<td>3 months</td>
<td>0.75%</td>
<td>0.80%</td>
<td>0.05%</td>
</tr>
<tr>
<td>6 months</td>
<td>1.00%</td>
<td>1.05%</td>
<td>0.05%</td>
</tr>
</tbody>
</table>

**Treasury Strips**

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Bid</th>
<th>Ask</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 month</td>
<td>0.50%</td>
<td>0.55%</td>
<td>0.05%</td>
</tr>
<tr>
<td>3 months</td>
<td>0.75%</td>
<td>0.80%</td>
<td>0.05%</td>
</tr>
<tr>
<td>6 months</td>
<td>1.00%</td>
<td>1.05%</td>
<td>0.05%</td>
</tr>
</tbody>
</table>

**Inflation-Indexed Treasury Securities**

<table>
<thead>
<tr>
<th>Maturity</th>
<th>Bid</th>
<th>Ask</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 month</td>
<td>0.50%</td>
<td>0.55%</td>
<td>0.05%</td>
</tr>
<tr>
<td>3 months</td>
<td>0.75%</td>
<td>0.80%</td>
<td>0.05%</td>
</tr>
<tr>
<td>6 months</td>
<td>1.00%</td>
<td>1.05%</td>
<td>0.05%</td>
</tr>
</tbody>
</table>