

**FUNDING INVESTMENTS**  
**FINANCE 238/738, D. Musto**  
**SECOND TEST**  
**80 MINUTES / 80 POINTS**

*Your Name:* \_\_\_\_\_

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 =  $1.1 * 13/5 = 2.86\text{BB}$*

*The amount of money to be raised =  $2.86\text{BB} * €0.09 = €257.4\text{MM}$*

*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 =  $€0.26 * 1.1\text{BB} + 257.4\text{MM}$*

*Share price after ex-rights =  $€ 537.4\text{BB} / (3.96\text{MM}) = € .137$*

*Drop in share price* = €0.123

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).*

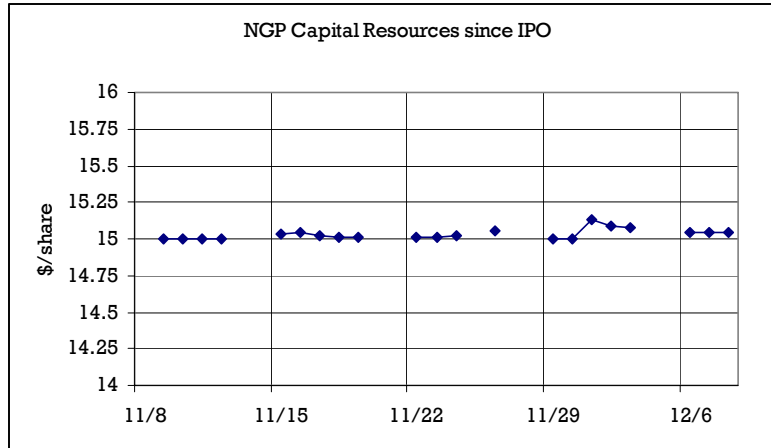
b. (4 pts) Just before the close of each trading day, place an order to buy or sell (randomly) one share of each stock the fund holds

*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.*

4. 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:



- 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?

$$(0.3)(38) + (0.7)(40) = \underline{39.4}$$

- 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%?

$$(0.75)(39.4) + (0.25)(40) = \underline{39.55}$$

- 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 4,850,000 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 15<sup>th</sup> 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

Representative Over-the-Counter quotation based on transactions of \$1 million or more. Treasury bond, note and bill quotes are as of mid-afternoon. Colons in bid-and-asked quotes represent 32nds; 101:01 means 101 1/32. Net changes in 32nds. n-Treasury note, i-Inflation-Indexed issue. Treasury bill quotes in hundredths, quoted on terms of a rate of discount. Days to maturity calculated from settlement date. All yields are to maturity and based on the asked quote. Latest 13-week and 26-week bills are boldfaced. For bonds callable prior to maturity, yields are computed to the earliest call date for issues quoted above par and to the maturity date for issues below par. \*When issued.

Source: eSpeed/Cantor Fitzgerald

U.S. Treasury strips as of 3 p.m. Eastern time, also based on transactions of \$1 million or more. Colons in bid and asked quotes represent 32nds; 99:01 means 99 1/32. Net changes in 32nds. Yields calculated on the asked quotation. ci-stripped coupon interest, bp-Treasury bond, stripped principal, np-Treasury note, stripped principal. For bonds callable prior to maturity, yields are computed to the earliest call date for issues quoted above par and to the maturity date for issues below par.

Source: Bear, Stearns & Co. via Street Software Technology Inc.

Government Bonds & Notes					U.S. Treasury Strips						
RATE	MATURITY MO/YR	BID	ASKED	CHG	ASK YLD	RATE	MATURITY MO/YR	BID	ASKED	CHG	ASK YLD
1.625	Apr 05a	99:30	99:31	1	2.24	3.625	May 13a	95:10	95:11	9	4.31
6.500	May 05a	100:10	100:11	1	2.48	1.875	Jul 13i	101:21	101:22	8	1.66
6.750	May 05a	99:11	100:12	1	2.56	4.250	Aug 13a	98:30	98:31	8	4.40
12.000	May 05	100:27	100:28	1	2.27	4.250	Nov 13a	98:26	98:27	9	4.41
1.125	May 05a	99:25	99:26	1	2.52	2.000	Jan 14a	102:08	102:09	8	1.72
1.250	Jun 05a	99:21	99:22	1	2.56	4.000	Feb 14a	96:28	96:29	9	4.43
1.500	Jul 05a	99:18	99:19	1	2.79	4.750	May 14a	102:08	102:09	10	4.44
6.500	Aug 05a	101:06	101:07	1	2.91	13.250	May 14	134:11	134:12	1	4.04
10.750	Aug 05	102:21	102:22	-1	2.80	2.000	Jul 14i	102:01	102:02	7	1.76
2.000	Aug 05a	99:19	99:20	1	2.95	4.250	Aug 14a	98:15	98:16	10	4.45
1.625	Sep 05a	99:10	99:11	1	3.05	12.500	Aug 14	133:10	133:11	3	4.05
1.625	Oct 05a	99:05	99:06	1	3.13	11.750	Nov 14	131:27	131:28	7	4.07
5.750	Nov 05a	101:14	101:15	1	3.22	11.250	Nov 14a	98:10	98:11	10	4.46
5.875	Nov 05a	101:16	101:17	-1	3.21	4.000	Jan 15i	98:18	98:19	10	1.79
1.875	Nov 05a	99:04	99:05	1	3.23	11.250	Feb 15a	96:15	96:16	10	4.44
1.875	Dec 05a	99:00	99:00	1	3.27	10.625	Aug 15	150:06	150:07	11	4.50
1.875	Jan 06a	98:26	98:27	1	3.32	9.875	Nov 15	144:18	144:19	9	4.53
5.625	Feb 06a	101:28	101:29	1	3.39	9.250	Feb 16	139:29	139:30	11	4.54
9.375	Feb 06	105:02	105:03	1	3.19	7.250	May 16	123:00	123:01	12	4.58
1.625	Feb 06a	98:14	98:15	1	3.38	7.500	Nov 16	125:25	125:26	11	4.60
1.500	Mar 06a	98:04	98:05	1	3.45	8.750	May 17	137:24	137:25	13	4.63
2.250	Apr 06a	98:23	98:24	1	3.46	8.875	Aug 17	139:13	139:14	13	4.64
2.000	May 06a	98:13	98:14	1	3.46	9.125	May 18	143:09	143:10	15	4.66
4.625	May 06a	101:06	101:07	1	3.47	9.000	Nov 18	142:28	142:29	17	4.69
4.875	May 06a	101:18	101:19	1	3.47	8.875	Feb 19	141:30	141:31	17	4.71
2.500	Mar 06a	98:28	98:29	1	3.49	8.125	Aug 19	134:38	134:39	15	4.74
2.750	Jun 06a	99:02	99:03	1	3.51	8.500	Feb 20	139:19	139:20	17	4.75
7.000	Jul 06a	104:05	104:06	1	3.55	8.750	May 20	142:22	142:23	17	4.75
2.750	Jul 06a	98:30	98:31	1	3.55	8.750	Aug 20	143:03	143:04	17	4.76
2.375	Aug 06a	98:13	98:14	1	3.57	7.875	Feb 21	134:01	134:02	17	4.78
-2.375	Aug 06a	98:10	98:11	1	3.60	8.125	May 21	137:03	137:04	17	4.79
2.500	Sep 06a	98:12	98:13	1	3.62	8.125	Aug 21	137:14	137:15	17	4.79
6.500	Oct 06a	104:05	104:06	1	3.62	8.125	Nov 21	136:09	136:10	16	4.80
2.500	Oct 06a	98:08	98:09	1	3.64	2.250	Aug 22	128:10	128:11	14	4.82
2.625	Nov 06a	98:12	98:13	1	3.65	7.625	Nov 22	132:29	132:30	16	4.82
3.500	Nov 06a	99:24	99:25	1	3.64	7.125	Feb 23	127:06	127:07	17	4.83
2.875	Nov 06a	98:23	98:24	1	3.66	6.250	Nov 23	116:29	116:30	15	4.84
3.000	Dec 06a	98:27	98:28	1	3.65	7.500	Aug 24	133:12	133:13	18	4.84
3.375	Jan 07a	105:00	105:01	1	3.62	2.375	Jan 25i	107:02	107:03	9	1.94
3.125	Jan 07a	99:00	99:00	1	3.70	2.375	Feb 25	135:08	135:09	19	4.84
2.250	Feb 07a	97:12	97:13	1	3.71	6.875	Aug 25	126:00	126:01	19	4.85
6.250	Feb 07a	104:17	104:18	1	3.66	6.000	Feb 26	114:28	114:29	18	4.85
3.375	Feb 07a	99:12	99:13	1	3.70	6.750	Aug 26	125:01	125:02	19	4.85
3.750	Mar 07a	100:00	100:01	1	3.73	6.500	Nov 26	121:28	121:29	18	4.85
6.625	May 07a	105:23	105:24	1	3.74	6.625	Feb 27	123:22	123:23	17	4.85
4.375	May 07a	101:07	101:08	1	3.74	6.375	Aug 27	120:20	120:21	18	4.85
3.125	May 07a	98:23	98:24	1	3.75	6.125	Nov 27	117:11	117:12	18	4.85
2.750	Aug 07a	97:21	97:22	2	3.79	3.625	Apr 28i	130:27	130:28	16	1.95
3.250	Aug 07a	98:25	98:26	2	3.78	5.500	Aug 28	109:02	109:03	16	4.84
6.125	Aug 07a	105:06	105:07	2	3.78	5.250	Nov 28	105:20	105:21	17	4.84
3.000	Nov 07a	98:00	98:00	3	3.82	5.250	Feb 29	105:24	105:25	16	4.84
3.625	Jan 08a	107:16	107:17	1	3.82	3.875	Apr 29i	136:26	136:27	17	1.95
5.500	Feb 08a	104:11	104:12	2	3.86	6.125	Aug 29	118:08	118:09	18	4.84
3.375	Feb 08a	98:19	98:20	2	3.88	6.250	May 30	120:21	120:22	21	4.82
2.625	May 08a	96:07	96:08	2	3.92	5.375	Feb 31	109:16	109:17	20	4.73
5.625	May 08a	104:29	104:30	3	3.91	3.375	Apr 32i	131:30	131:31	22	1.96

## Maturity Type

Maturity	Type	Bid	Asked	Chg	Ask Yld
Feb 08	ci	89:24	89:24	2	3.84
Feb 08	np	89:20	89:20	2	3.89
Aug 08	np	89:19	89:19	2	3.90
May 08	ci	88:23	88:23	2	3.90
May 08	np	88:19	88:19	2	3.96
Aug 08	ci	87:25	87:25	2	3.93
Aug 08	np	87:20	87:20	2	3.99
May 08	np	88:20	88:20	2	3.95
May 08	ci	86:23	86:23	3	4.00
Nov 08	np	86:24	86:24	3	3.99
Nov 08	np	86:23	86:23	3	4.01
Feb 09	ci	85:28	85:28	3	4.00
Feb 09	np	85:25	85:25	3	4.03
May 09	ci	84:29	84:29	3	4.04
May 09	np	84:29	84:29	3	4.04
May 09	np	84:27	84:27	3	4.05
Aug 09	ci	83:26	83:26	4	4.10
Aug 09	np	83:27	83:27	4	4.10
Nov 09	ci	83:01	83:01	4	4.09
Nov 09	bp	82:23	82:23	4	4.17
Feb 10	ci	82:03	82:03	4	4.12
Feb 10	np	81:29	81:29	4	4.17
May 10	ci	81:12	81:12	4	4.09
Aug 10	ci	80:19	80:19	4	4.08
Aug 10	np	80:02	80:02	4	4.20
Nov 10	ci	79:27	79:27	6	4.07
Feb 11	ci	78:10	78:10	6	4.22
Feb 11	np	78:11	78:11	6	4.22
May 11	ci	77:12	77:12	6	4.26
Aug 11	ci	76:11	76:11	6	4.30
Nov 11	np	76:16	76:16	6	4.27
Nov 11	ci	75:11	75:11	6	4.34
Feb 12	ci	74:15	74:15	6	4.35
Feb 12	np	74:22	74:22	6	4.31
May 12	ci	73:19	73:19	6	4.37
Aug 12	ci	72:19	72:19	6	4.41
Aug 12	np	73:02	73:02	6	4.32
Nov 12	ci	71:22	71:22	7	4.43
Nov 12	np	72:04	72:04	7	4.35
Feb 13	ci	70:21	70:21	7	4.48
Feb 13	np	71:04	71:04	7	4.39
May 13	ci	69:24	69:24	7	4.51
Nov 13	np	70:18	70:18	7	4.35
Aug 13	ci	68:28	68:28	7	4.53
Aug 13	np	69:09	69:09	7	4.45
Nov 13	ci	67:30	67:30	7	4.55
Nov 13	np	68:13	68:13	7	4.47
Feb 14	ci	67:02	67:02	7	4.57
Feb 14	np	67:19	67:19	7	4.48
May 14	ci	66:05	66:05	7	4.60
May 14	np	66:23	66:23	7	4.50
Aug 14	ci	65:09	65:09	7	4.61
Nov 14	ci	64:15	64:15	7	4.63
Feb 15	ci	63:20	63:20	7	4.64
Feb 15	bp	63:29	63:29	7	4.60
May 15	ci	62:26	62:26	8	4.66
Aug 15	ci	62:00	62:00	8	4.68
Aug 15	bp	62:09	62:09	8	4.63
Nov 15	ci	61:04	61:04	8	4.70
Nov 15	bp	61:13	61:13	8	4.66

## Treasury Bills

Maturity	Mat	Bid	Asked	Chg	Ask Yld	
Apr 14	05	2	2.66	2.65	0.10	2.69
Apr 21	05	9	2.60	2.59	0.01	2.6