CASE STUDY
Arbitrage in the Government Bond Market?

1. Create the two synthetic bonds described in the case. Explain the financial construction and motivate any assumptions you wish to make.

2. Analyze the callables. What do they consist on in terms of financial instruments? How could you unbundle their cash flows?

3. How should the price of the synthetics relate to the callable bonds? Why? On January 7, 1991 how much would it cost to create the synthetics using the 2005s? the 2000s?

4. Derive dynamic trading and hedging strategies. Given your preceding analyses what do you think is driving the odd relative prices of the various bonds under consideration?

5. Why, in your opinion, does the Treasury issue callable debt? Based on your simulations or conceptual analysis what kind of exercise policy would you recommend to them?

6. What is the advantage for corporations to issue callable debt? Does it differ from the Treasury’s basic motivation?

7. Why should investors wish to buy callable debt? If you were to advise on such an investment how would you proceed with the investment decision? What analytical prerequisites would you recommend?

8. **Optional (really hard).** Value the callables explicitly. You might wish to decompose the implicit cashflows, value them separately using appropriate modelling technology and then calculate their overall fair value. In light of your analysis, would your answers to the first two questions change?

9. If you were asked to simulate the relative trading behavior of the callables and the synthetics how would you proceed? What additional information, if any, is necessary and how would go about to acquire it?

10. **Optional (really hard).** Set up the simulation exercise and carry out whatever analysis you think is feasible. State all the assumptions you might wish to make and clearly indicate any additional information that you might have acquired for use with the case.

Please note the following ground rules for the case write-ups:

- the **maximal group size** is 5; every group member receives the same grade;
- at most 2 pages of **analysis** and 6 pages of **technical appendices**;
• show your work, staple the pages together and be professional;

• *late write-ups* will not be accepted for any reason; they are due at the *beginning of class* for which the discussion is scheduled;

• *graded write-ups* will be available a week later.