UCLA Anderson **Fall 2018**
MGMTMFE 400 **Prof. Mikhail Chernov**

Problems for Lecture 2

1. Assume that spot rates are as follows:

Maturity	Spot Rate
1	5%
2	5.5%
3	6%
4	6.3%

   Spot rates are with annual compounding, coupon payments are annual, and par values are \$100. Compute the prices of the following bonds:

   (a) A zero-coupon bond with 3 years to maturity.

   (b) A bond with coupon rate 6% and 2 years to maturity.

   (c) A bond with coupon rate 8% and 4 years to maturity.

2. You observe prices for the following bonds:

Bond	Coupon rate (%)	Maturity	Price
X	4	6 months	100.98
Y	6	1 year	103.59

   Coupon payments are semiannual.

   Determine the 6-month spot rate ($r_{0.5}$) and the 1-year spot rate (r_1), both expressed as APRs with semiannual compounding.

3. It's lunchtime. You are thinking about this restaurant, *Obligation du Tresor*, where you have always wanted to go but never did because you thought it was too pricey. Luckily, you bump into your friend Jerry, the bond trader. Today Jerry is buying and selling the following bonds:

Bond	Coupon rate (%)	Maturity	Price
A	0	1 year	95.238
B	5	2 years	98.438
C	7	2 years	103.370

Coupon payments are annual, and bid-ask spreads are zero. Is it possible to construct an arbitrage (and get a free lunch at *Obligation du Tresor*), given the bond prices? If so, what is the trading strategy that produces the arbitrage?

Hint: Given the prices of two bonds, determine whether the third bond is over- or under-priced.