

Individual problem set – do not work on with classmates. Submit each question in a separate worksheet in a single Excel file.

Today is Friday, August 14, 2020, and you collect the following information from Bloomberg:

Security	Maturity	Coupon	Bid	Ask
1	11/15/2020	7.50%	101-21+	101-22+
2	2/15/2021	2.25%	100-26	100-27
3	5/15/2021	2.375%	101-10	101-10+
4	8/15/2021	2.5%	101-24+	101-25+
5	11/15/2021	3.25%	103-00+	103-01+
6	2/15/2022	3.75%	104-07	104-07+
7	5/15/2022	2.25%	102-03+	102-04+
8	8/15/2022	2%	101-31+	102

1. Use this information to construct the continuously compounded term structure of interest rates on 0-coupon US Treasury securities. (i.e., Bootstrap the yield curve.)
2. Plot the term structure.
3. You see the following security:

Security	Maturity	Coupon	Bid	Ask
9	8/15/2022	0.50%	99-05	99-06

- (a) What is the implied price of this note according to your yield curve?
- (b) Can you make an arb trade using this note – ignore short selling and financing costs?
 - i. Show the replicating value of Note 9.
 - ii. Demonstrate an arb trade and show the cash flows on all relevant dates to demonstrate the arbitrage.

Warnings and hints: Because August 14 is a Friday, all trades will entail accrued interest. Also be alert for bad days on all notes.