

Session 6 Question

Given the Information below:

Maturity	Coupon	Quoted Price	Yield	Price Value of a Basis Point
2-years	7.00%	\$99.00	7.90%	\$180
7-years	9.00%	\$102.00	8.50%	\$400
30-years	10.00%	\$106.00	9.30%	\$1,000

	2-years	3-years	4-years	5-years	7-years	10-years	20-years	30-years
Std. Deviation	20.3 bp	20.5 bp	21.2 bp	21.0 bp	20.8 bp	20.3 bp	19.2 bp	18.3 bp

	Correlation							
2-years	1.000							
3-years	0.984	1.000						
4-years	0.973	0.983	1.000					
5-years	0.956	0.970	0.988	1.000				
7-years	0.927	0.945	0.972	0.985	1.000			
10-years	0.91	0.939	0.965	0.978	0.993	1.000		
20-years	0.891	0.909	0.940	0.953	0.973	0.982	1.000	
30-years	0.886	0.904	0.933	0.949	0.969	0.982	0.988	1.000

Suppose you want to hedge a position in \$100 million of 7-year bonds.

- a. Calculate the optimal hedging using two bonds, 2-years and 30-years bonds (shorter and longer maturity bonds).
- b. What is the disadvantage of hedging with just one bond e.g. 30-years bond and with two bonds (e.g. shorter and longer maturity bonds) as in a.?