

Midterm Exam

*Directions: Answer all questions; the questions are weighted equally. For full credit, you must provide **complete** explanations for your answers.*

1. Answer the following:
 - (a) Large banks and small banks (defined by asset size) often have similar ROA but larger banks typically have larger ROE. Why might this be the case?
 - (b) In determining performance, should bank management focus on net interest income or net interest margin?
 - (c) In determining exposure to interest rate risk, should bank management focus on DGAP or FGAP?
2. For pure discount bonds, maturity and duration are the same. Show this by calculating the elasticity of bond price with respect to a change in interest rates for a pure discount bond.

3. Consider the following balance sheet

Assets	Amount	Rate	Duration	Liabilities/Equity	Amount	Rate	Duration
Cash	\$500			Deposits	\$8,000	9.0%	0.3 years
Treasuries	\$2,000	9%	10 years	CD's	\$6,000	9.0%	4.2 years
Loans	\$15,500	9%	2 years	Equity	\$4,000		
Total	\$18,000			Total	\$18,000		

- (a) Calculate (using duration gap) the change in the market value of equity if all rates increase by 2%.
 - (b) What position in the Treasury futures market should this institution take to hedge its interest rate risk exposure?
4. Analyze the following statement: "Using futures markets to hedge does not eliminate risk, it simply substitutes spot price risk for basis risk." If this statement is true, why do people hedge with futures markets?
5. The current yield on a 3-year bond is 12% and the yield on a 1-year bond is 8%. Two years from now, investors believe that the 1-year yield will be 15%. According to the expectations hypothesis, what must the current 2-year yield be?
6. Suppose IBM can borrow long term at a fixed rate of 8% or at a floating rate of 50 bp over LIBOR. Wells Fargo can borrow long term at a fixed rate of 10% and a floating rate of 65bp over LIBOR. If IBM desires a floating rate and Wells Fargo wants a fixed rate, design an interest rate swap the reduces the borrowing costs of both firms.