

FIN 425 Global Financial Risk Management – Sample Exam II

Professor Koch

Covers: Hull, Chapters 6-8,10.

Answer all questions. Points possible appear in the margin beside each question.

1. (5) A. Briefly describe the T.Bill futures contract.
 - (5) B. Briefly describe the Eurodollar futures contract, how its price is quoted, and how it is different from the T.Bill futures contract.

2. Suppose you manage a bond portfolio worth \$50,000,000. It's duration is 14 years.
 - (5) A. Discuss the expected change in the value of your bond portfolio if the yield curve experiences an upward parallel shift of 20 basis points (0.2% or .002).
 - (5) B. A T. Bond futures contract that expires in 2 months currently has a futures price of 91-12 (\$91,375), and the cheapest-to-deliver bond currently has a duration of 5.5 years. How would you immunize the portfolio against changes in interest rates over the following two months?
 - (5) C. How would you change the duration of your bond portfolio to 7 years?
 - (5) D. Discuss the complications specific to the hedging problem in B. and C. above, that make this hedge less effective.

3. Given the spot exchange rate is $S = 2 \text{ \$/\pounds}$, consider the following quotes for firms A and B:

	U.K. \pounds loan	U.S. \$ loan
U.K. Company A	11.0%	8.0%
U.S. Company B	10.5%	7.0%

Company A wants to borrow 20,000,000 U.S.\$, while B wants to borrow 10,000,000 U.K. \pounds .

- (5) A. Given these quotes, describe the margin that could be captured in a currency SWAP. Discuss the economic reasons that this margin is often available to be shared with a currency SWAP.
- (10) B. Design a currency SWAP that gives the bank 10 basis points and splits the remaining margin between Companies A and B.
- (5) C. Explain (briefly) how you would value a different SWAP that is the exchange of a floating rate in one currency for a fixed rate in another currency.

4. A. Consider an exchange-traded **put** option contract to **sell** 100 shares with strike price $X = \$40$.
Explain how the terms of the contract will change when there is:
- (2) (i) a 10% stock dividend;
 - (2) (ii) a 10% cash dividend;
 - (2) (iii) a 5-for-4 stock split;
 - (2) (iv) an announcement of increased earnings.
- B. Briefly discuss the margin requirements for the following investments:
- (2) (i) purchase of 100 shares of stock;
 - (2) (ii) purchase of 2 put options;
 - (2) (iii) sale of a naked call;
 - (2) (iv) writing a covered call.
- (4) C. Is a European option always worth at least as much as its intrinsic value? Explain.
- (5) D. Distinguish between the function of a Floor Broker and that of the Order Book Official.
5. Consider the following two options:
Call option with strike price $X_1 = \$55$; cost -- $c = \$2.00$
Put option with strike price $X_2 = \$45$; cost -- $p = \$3.00$
- A. Suppose you **buy** two calls with $X_1 = \$55$,
and you **buy** one put with $X_2 = \$45$.
- (10) Present the payoff pattern of this combination.
Be sure to discuss or show the break-even point(s).
- B. Suppose you **sell** two calls with $X_1 = \$55$,
and you **sell** three puts with $X_2 = \$45$.
- (10) Present the payoff pattern of this combination.
Be sure to discuss or show the break-even point(s).
6. A. Suppose the current stock price is $S = \$28$;
a one-year European call option with a strike price of $X = \$30$ costs $c = \$6$;
(10) and the riskfree rate is 10% (thus, $Xe^{-r} = \$27.15$).
What is the equilibrium value of a one-year European put on this stock (p)
with the same exercise price, implied by Put-Call Parity?
- (5) B. If, in addition to the information in A. above, you observe that the put is currently selling for $p = \$6$, discuss possible arbitrage opportunities.