

Global Financial Risk Management – Sample Exam 3

Professor Koch

Covers: Hull, Chapters 7-10.

Answer all questions. Points assigned to each problem appear in parentheses. 80 points possible.

1. 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.
2. 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.

3. 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).
4. 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, $Xe^{-rt} = \$27.15$).
 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.