ECONOMICS 136
SECOND MIDTERM

Please read each question carefully and *think* about the answer before writing. Budget your time, each of the 8 separate questions should be allocated initially no more than 10 minutes. If you have time left, then write more.

I. Show your work, if you can't calculate the answer, explain how you think the problem should be solved [30 points, 30 minutes total].

1. The interest rate on short-term government securities is 4.75 percent in the U.S. and 3 percent in the euro block. The exchange rate is currently .93 euros per dollar. Using the uncovered interest parity condition, calculate the implicit forward exchange rate, f. Interpret f, explaining its relation, if any, to the expected future exchange rate.

2. Suppose the risk-free interest rate is 5 percent, and there is a stock paying no cash dividend with a current price of $100 and a futures price for delivery in one year of $110. If there is an arbitrage opportunity explain what it is and how the market acts to eliminate it. If there is no arbitrage opportunity explain why not.

3. Give the general expressions for the payoff functions at maturity for a long call and for a short put on a stock. Suppose the price of the call is $5 and the price of the put is $3 and they both have an exercise (strike) price of $100. In separate graphs for the long call and the short put sketch the payoff function i.e., relation between stock price at expiration and profits. In a new graph, sketch the payoff function from combining the long call with the short put. *Interpret*.

II. Explain why you agree or disagree with each of the following [50 points, 50 minutes total].

1. A straddle (long put and long call) protects an agent against large price changes in the stock.

2. Given the risk-free interest rate, the current spot price and the current futures price embody the same information about the future spot price.

3. The efficient markets hypothesis is invalid. Because there are cycles in the stock market, future stock prices can be predicted from past prices. Just predict rising prices during expansions and falling prices during contractions.

4. All other factors held constant, the greater the volatility of a stock's price the greater its call option price and the lower its put option price. Time to maturity,T, works the other way around: the greater T the smaller the call option price and the higher the put option price.

5. A long put and a short call is like selling the stock short. Thus, it is possible to construct a risk-free portfolio by being long a stock, short a call, and long a put.