Assignment 4

Started: Nov 19 at 8:19pm

Quiz Instructions

Complete this assignment by 11:59 p.m. on Saturday December 3.

Question 1

5 pts

During the past year a defined benefit pension fund hired a money manager to invest a portion of the pension fund's assets, and now the pension fund wants to evaluate the money manager's performance based on the Fama-French 3-factor model. Using the money manager's daily investment returns, the pension fund estimates that the manager's investments had factor loadings of 0.9, 0.4, and -0.7 on the excess market return, the *SML* portfolio return, and the *HML* portfolio return, respectively. During the past year, the riskfree rate was 2.0% and the excess return on the market, the return on the *SML* portfolio, and the return on the *HML* portfolio were 9.8%, -4.3%, and -3.4%, respectively. If the money manager's investment portfolio earned a rate of return of 10.5%, what was the portfolio's Jensen's alpha?

State your answer as a percentage rate to the nearest basis point, (hundredth of a percent), e.g., 1.42 .

-0.98

Question 2

5 pts

Nike, Inc. has a market beta of 0.80. On September 23, 2020, it reported earnings that beat analysts' expectations, and its stock rose 8.76%. Over the same day, the S&P500 index declined by 2.37%. What is an estimate of Nike's daily abnormal return on September 23, 2020?

State your answer as a percentage rate to the nearest basis point, (hundredth of a percent), e.g., 7.65 .

10.656

Question 3

5 pts

The current spot price for no. 2 soft red wheat is $3.66 per bushel. If the current futures price for a contract that matures in 8 months written on this same type of wheat is $3.55 per bushel, then

- ○ an arbitrage would involve short-selling the wheat, investing the proceeds, and taking a short position in the futures contract.
- ○ an arbitrage would involve borrowing to buy the wheat and taking a long position in the futures contract.
- ○ an arbitrage would involve borrowing to buy the wheat and taking a short position in the futures contract.
- ○ there is not necessarily an arbitrage. The likely reason is that the storage costs of wheat for the next eight months are high.
- ◉ there is not necessarily an arbitrage. The likely reason is that it is not possible to short-sell wheat because it is not being stored.

Question 4

5 pts

Suppose that the Japanese yen per U.S. dollar spot exchange rate is ¥110/$ and the annualized, annually-compounded risk-free interest rates for borrowing or lending over the next year in Japan and the U.S. are 1% and 5 %, respectively. If the one-year forward exchange rate is ¥107/$, then

- ○ an arbitrage involves taking a forward position to deliver yen for dollars, borrowing yen, and investing in dollars.
- ○ there is no arbitrage.
- ○ an arbitrage involves taking a forward position to deliver yen for dollars, borrowing dollars, and investing in yen.
- ◉ an arbitrage involves taking a forward position to deliver dollars for yen, borrowing yen, and investing in dollars.
- ○ an arbitrage involves taking a forward position to deliver dollars for yen, borrowing in dollars, and investing in yen.

Question 5

5 pts

The Nasdaq 100 stock index currently equals 11,906.44 and the futures price on a contract maturing in 1 year is 11,864.25. If the one-year continuously-compounded riskfree rate is 0.65%, what Nasdaq 100 dividend yield is implied by the futures price?

State your answer as a percentage rate to the nearest basis point, (hundredth of a percent), e.g., 2.07 .

1.005

Question 6

5 pts

Compuware stock has a current share price of $25.88 and is scheduled to pay a dividend of $1 per share in 3 months. A European put option on a share of Compuware stock that matures in 5 months and has a strike price of $25 sells for $5. If the continuously-compounded riskfree interest rates for maturities of 3 months and 5 months is 4.25% and 4.50%, respectively, what is the no-arbitrage value of a European call option with a strike price of $25 and a time until maturity of 5 months?

Express your answer in dollars to the nearest cent, e.g., 4.25 .

5.3549

Question 7

5 pts

The current price per share of a non-dividend-paying stock is $50. A European put option is written on this stock and has a maturity of 4 months and an exercise price of $45. Based on the binomial model, the stock's proportional return over a period of one month if it appreciates is u = 1.1 and the stock's proportional return over a period of one month if it

depreciates is d = 0.9. The continuously-compounded riskfree rate is 3.00%, so that the riskfree return over one month is $R_f = e^{0.03 \times (1/12)} = e^{0.0025}$. Use the binomial model with 4 monthly periods to solve for the current value of this put option.

State your answer in dollars to the nearest cent, e.g., 3.76 .

1.835

Quiz saved at 10:01am

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