Indian Institute of Technology Jodhpur

Financial Engineering (MAL7350)

Semester II (2019-20)

Quiz I (Weightage 10%) March 05, 2020

1. A spot exchange rate is currently 2.350. The one month forward price is 2.362. What is the one-month interest rate assuming there is no arbitrage?. (2)

2. Consider a forward contract to purchase a stock in 3 months. The current stock price is Rs 40 and the risk free interest rate is 5% per annum compounded quarterly. What should be the strategy of an arbitrageur when the Forward price is (i) Rs 45 and (ii) Rs 39. (3)

3. Let the risk-free rate be 8% and, the expected return and risk of the market are 12% and 15% respectively. If an asset a be given with covariance 0.045 with the market, determine the expected rate of return of the given asset. (3)

4. If ϵ is the error in the best linear predictor of an asset with respect to the market portfolio, show that ϵ is uncorrelated with the market return R_M. (3)

5. In a market there are only two risky stocks, whose details are given below -

	Number of Shares Outstanding	Price Per Share	Expected Rate of Return	Standard Deviation of Return
Stock A	100	1.5	15%	15%
Stock B	150	2.0	12%	9%

Furthermore, the correlation coefficient between the returns of stocks A and B is 1/3. There is also a risk-free asset.

a. What is the expected rate of return of the market portfolio? (3)

b. What is the standard deviation of the market portfolio? (3)

c. What are the Beta's of stocks A and B? (3)

$(1 - S(T)e^{-rt}$

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