**Intermediate Financial Management Homework Assignment 1**

**If you follow along, you will know what the homework will cover. You can predict what to study if you pay attention. Remember to write your name/student ID on your paper. Please remind your homework assignments are due at the beginning of class on 3/29** .

**Question 1:**

Suppose you invested $98 in the Ishares High Yield Fund (HYG) a month ago. It paid a dividend of $0.47 today and then you sold it for $99. What was your dividend yield and capital gains yield on the investment?

**ANSWER: Div yld = 0.47 / 98 = 0.48%; cap gain = 99 - 98 = 1; 1 / 98 = 1.02%**

**Question 2:**

Amazon.com stock prices gave a realized return of 5%, -5%, 10%, and -10% over four successive quarters. What is the annual realized return for Amazon.com for the year?

**ANSWER: 1.05 × 0.95 × 1.10 × 0.9 = 0.9875; 0.9875 - 1 = -1.25%**

**Question 3:**

Bear Stearns' stock price closed at $100, $105, $56, $30, $2 over five successive weeks. The weekly standard deviation of the stock price calculated from this sample is:

**ANSWER: Average return = (100 + 105 + 56 + 30 + 2) / 5 = 58.6; standard deviation = ((100 - 58.6)^2 + (105 - 58.6)^2 + (56 - 58.6)^2 + (30 - 58.6)^2 + (2 - 58.6)^2)) / (5 - 1) = $44.43**

**Question4:**

The average annual return over the period 1926-2009 for the S&P 500 is 11.7%, and the standard deviation of returns is 20.5%. Based on these numbers, what is a 67% confidence interval for 2010 returns?

**ANSWER: 11.7% - (1 × 20.5%) = -8.8%; 11.7% +( 1 × 20.5%) = 32.2%**

**Question5:**

*Use the information for the question(s) below.*

Consider an economy with two types of firms, S and I. S firms always move together, but I firms move independently of each other. For both types of firms there is a 70% probability that the firm will have a 20% return and a 30% probability that the firm will have a -30% return. (1)What is the expected return for an individual firm? (2) The standard deviation for the return on an individual firm is closest to (3) The standard deviation for the return on an portfolio of 20 type S firms is closest to: (4) The standard deviation for the return on a portfolio of 20 type I firms is closest to:

**ANSWER:**

**(1) expected return = 0.7(20%) + 0.3(-30%) = 5%**

**(2)standard deviation =  = 0.2291**

**(3) Since all these firms move the same, there is no adjustment to the standard deviation.**

**(4) Since all these firms move independently,**

**stdev = stdev(single firm) /  = 0.2291 /  = 0.0512**

**Question6:**

A portfolio has three stocks  200 shares of Yahoo (YHOO), 100 Shares of General Motors (GM), and 50 shares of Standard and Poor's Index Fund (SPY). If the price of YHOO is $30, the price of GM is $30, and the price of SPY is $130, calculate the portfolio weight of YHOO and GM.

**ANSWER:**

**Compute the value of each stock in the portfolio by multiplying stock price by number of shares of each. Compute total portfolio value by adding each component in part A. Divide YHOO value by portfolio value to compute weight and similarly for GM. Thus, total portfolio value = 200 × 30 + 100 × 30 + 50 × 130 = 15,500; weight of YHOO = 6000 / 15,500 = 38.7%; weight of GM = 3000 / 15,500 = 19.4%.**

**Question7:**

Your retirement portfolio comprises 100 shares of the Standard & Poor's 500 fund (SPY) and 100 shares of iShares Barclays Aggregate Bond Fund (AGG). The price of SPY is $120 and that of AGG is $98. If you expect the return on SPY to be 10% in the next year and the return on AGG to be 5%, what is the expected return for your retirement portfolio?

**ANSWER:**

**Compute portfolio weights in SPY and AGG. Multiply weight of SPY by return on SPY and weight of AGG by return on AGG.**

**Initial portfolio value = 100 × 120 + 100 × 98 = 21,800;**

**final portfolio value = 100 × 120 × 1.1 + 100 × 98 × 1.05 = 23,490;**

**expected portfolio return = (23,490 - 21,800) / 21800 = 7.75%.**

**Question8:**

A portfolio comprises Coke (beta of 1.2) and Wal-Mart (beta of 0.9). The amount invested in Coke is $20,000 and in Wal-Mart is $30,000. What is the beta of the portfolio?

**ANSWER:**

**Compute portfolio weights of Coke and Wal-Mart. Multiply weight of each stock by its beta**

**1.2 × (20,000) / (20,000 + 30,000) + 0.9 × (30,000) / (20,000 + 30,000) = 1.02**

**Question9:**

UPS, a delivery services company, has a beta of 1.2, and Wal-Mart has a beta of 0.8. The risk-free rate of interest is 4% and the market risk premium is 7%. What is the expected return on a portfolio with 40% of its money in UPS and the balance in Wal-Mart?

**ANSWER:**

**Compute portfolio beta by multiplying weight of each stock by its beta. Use CAPM to compute expected return of the portfolio.**

**0.4 × 1.2 + 0.6 × 0.8 = 0.96; 0.04 + 0.96 × (0.07) = 10.72%**

**Question10:**

*Use the information for the question(s) below.*

Suppose you have $10,000 in cash and you decide to borrow another $10,000 at a 6% interest rate to invest in the stock market. You invest the entire $20,000 in an exchange-traded fund (ETF) with a 12% expected return and a 20% volatility.(1) The expected return on your of your investment is closest to: (2) The volatility of your investment is closest to: (3) Assume that the ETF you invested in returns -10%. Then the realized return on your investment is closest to:

**ANSWER:**

1. ***E*[*Rxp*] = *rf* + *β*(*E*[*Rp*] - *rf*)**

**= 0.06 + 2(0.12 - 0.06) = 0.18 or 18%**

1. ***SD*( *Rxp*) = *βSD*(*Rp*)= 2(0.20) = 0.40**
2. **Value of portfolio = $20,000( 1 + -0.10) = $18,000 - $10,600 loan & interest = 7400;**

**So, return = (7400 - 10,000) / 10,000 = -26%.**