Assignment Week 6 - The Capital Asset Pricing Model [1]

1. Calculate betas for high tech / financial stocks as well as value stocks. Collect data for American Express, Apple, Amazon, McDonald, Wal-Mart and Coca Cola using weekly returns on the period 01012000 to 01012013.

   1.1. Estimate average returns and covariance for the returns of the assets.

   1.2. Calculate betas for these stocks. (Use the S&P 500 as the market portfolio).

   1.3. Pick a portfolio where the following stocks are equally weighted: American Express, Apple and Amazon. Calculate the beta of this portfolio, its expected return and variance.

   1.4. Pick a portfolio where the following stocks are equally weighted: McDonald, Wal Mart and Coca Cola. Calculate the beta of this portfolio, its expected return and variance.

2. Exploring the CAPM model

   Remember the equation that measures the connection between portfolio β and expected returns.

   $$\bar{R}_p = x + \beta_p y$$

   In this exercise we use the above equation to interpret α and β.

   2.1 Assume the following
   $\bar{R}_1 = 6\%, \bar{R}_2 = 12\%, \beta_1 = .5, \beta_2 = 1.5.$
   Find the values of x and y. How would you interpret x and y? What should be the return of a new company with a β of 2.0?

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2.2. Use Apple and Wal Mart and repeat the calculation of section [2.1.] what do you get?

2.3. Use the high and low beta portfolios and repeat the calculation of section [2.1.] what do you get?

2.4. Discuss the difference in the results between sections 2.1, 2.2. and 2.3.