Chapter 12: Additional Problems

1. Estimate the beta for Apple using monthly excess returns on Apple and the S&P500 for the last 5 calendar years (end on the last trading day of the most recent December).

   Notes:

   1) I pulled my data from Yahoo Finance: https://finance.yahoo.com/
   2) Use the "adjusted close" to calculate returns so that don't have to include dividends when calculating returns.
   3) The 10-year Treasury returns are given as annual percentage rates. Use these to calculate effective monthly rates assuming that the rates that are given are effective annual rates.
   4) I can't find a way do download a spreadsheet for the S&P500 index so I used the adjusted closes for the SPDR S&P 500 ETF Trust (Ticker Symbol: SPY)
   5) To get excess returns,
      a) calculate the return for each month
      b) subtract the effective monthly rate on 10-year Treasuries for that month

2. Calculate Aloy Corp.'s weighted average cost of capital if the firm has 1,500,000 shares outstanding that trade at $40 per share. Aloy's stock has a beta of 1.2. Aloy has $30,000,000 of outstanding bonds that offer a yield to maturity of 12%. Analysts estimate there is 5% chance of Aloy defaulting on its debt and that the expected loss per dollar of debt equals 40%. Aloy's marginal tax rate equals 35%. The risk-free rate equals 2% and the expected return on the stock market equals 9%.

For problems 3 and 4, assume the market risk premium equals 6% and use the yield on 10-year Treasuries from https://markets.wsj.com/ as the risk-free rate. Assume also that the marginal tax rate equals 21%.

Note: Your answers will vary depending on when you look up the information.

3. Calculate the equity cost of capital for Ford. Get the beta from http://finance.yahoo.com

4. Look up the Best Buy bond rating for bonds maturing in 2028. Look up the bond rating at https://www.finra.org/finra-data/fixed-income/corp-and-agency:
   Search for "best buy" in "Issuer Name" then click on the button "Show Results".
   a. Calculate the after-tax cost of debt using Table 12.2. Assume the expected loss rate in default equals 60%.
   b. Calculate the after-tax cost of debt using Table 12.3.