Coding Exercise #2

1. Load PredictorData2017.xlsx file.

2. This file contains data that can be used to construct a number of predictors (you don’t have to know what these mean). These include:

The E/P ratio (column D divided by column B)

The term spread (column I minus column F)

The default spread (column H minus column G)

Net issuance (column J)

The data also contains market returns in column Q and risk-free returns in column K. Use them to compute the excess return on the market. (market return – risk free return)

3. Run an out-of-sample analysis of the four predictive variables given above. The dependent variable is the excess market return. Use a linear regression for prediction (you can try other models if you want).

4. Drop data before 1950 (we don’t want to use too old/irrelevant data in our models).

1. 5. All regressions should use exactly 10 years of lagged data. So your first prediction will be made in December of 1959. You will be predicting the January 1960 return. Move the sample forward one month and repeat (the dependent variable should be the one month return and the independent variables are all four predictors 10 year lagged data). This is a “rolling regression”.
2. (In other words, each month, you train a new regression based on 10 years of lagged predictor data, so your window length of predictors is fixed, 10 years, and the trained model is incrementally moving forward to make a forecast for next month’s excess returns.)
3. 6. If m(t) is your return excess forecast at time t, then set a portfolio weight equal to

w(t) = min{1.5, max{-.5, 100×m(t)}}.

1. 7. Given the weight w(t), your portfolio’s excess return in time t+1 will therefore be w(t) r(t+1), where r is the actual excess market return (not predicted). Compute your portfolio return.
2. 8. Assess this strategy using mean, and standard deviation. Report corresponding values for the strategy that simply puts 100% into the market (this is a baseline model) and see which one performs better.