

## **BUS 735: Business Decision Making and Research**

**Instructor: Dr. James Murray**

**Homework: Forecasting**

**Fall 2011**

The following questions use the dataset `bondstock.xls` on the class website. This is monthly data on a AAA corporate bond index, which can be used to measure the average total return earned from owning corporate AAA bonds, and the Dow Jones Industrial Index, which can be used to measure the total return earned from owning stocks included in this index.

1. For each index, compute a 3 month moving average forecast.
  - (a) Compute the forecast accuracy using MAD, MAPD, and MSE.
  - (b) Use this forecasting method to forecast the next 30 days.
  - (c) At the end of 30 days, how much will each index have *grown* (compute the forecast in 30 days as a percentage of the last observation).
2. For each index, compute an exponential smoothing forecast using  $\alpha = 0.2$ .
  - (a) Compute the forecast accuracy using MAD, MAPD, and MSE.
  - (b) Use this forecasting method to forecast the next 30 days.
  - (c) At the end of 30 days, how much will each index have *grown* (compute the forecast in 30 days as a percentage of the last observation).
3. For each index, compute an adjusted exponential smoothing forecast using a smoothing parameter,  $\alpha = 0.2$ , and a trend parameter,  $\beta = 0.4$ .
  - (a) Compute the forecast accuracy using MAD, MAPD, and MSE.
  - (b) Use this forecasting method to forecast the next 30 days.
  - (c) At the end of 30 days, how much will each index have *grown* (compute the forecast in 30 days as a percentage of the last observation).
4. Which forecasting method is best for each index? Which fund would you recommend buying?