STAT 804

Assignment 4

1. Derive formulas for the L-step ahead forecast standard error for the AR(1) model $Y_t = \phi Y_{t-1} + \epsilon_t$ and for the ARIMA(1,1,0) model $(I - \phi B)(I - B)Y = \epsilon$. Compute the limits of the forecast standard errors for these two models as La tends to infinity.

2. Delete the last 4 values for the *earnings* data set and use the model you selected in the previous assignment to re-estimate the parameters and forecast the deleted values. Compare the actual errors with the forecasts and the forecast standard errors.

3. For the dataset *faketrend* in the usual directory remove a trend by ordinary least squares. Then fit the model you used with *fake* in the previous assignment to the residuals. Use the autocovariance of the fitted to re-estimate the trend by generalized squares. Does the fit change much?