Forecasting the S& P 500

3 Methods Compared

Dane Skinner Nick Hockensmith Kevin Park

Oregon State University

June 5, 2015

Introduction

- The S&P 500 Stock Index consists of 500 component stocks.
- The task is to forecast the price of the S&P using the past data of the S&P as well as the past data of the component stocks.
- We tried three methods: The Holt-Winters Filter, Garch Models, and Neural Networks.

Questions of Interest

- What ways are there to forecast prices in a time series?
- Could we ever rely on such a forecast?

Holt Winters Filter

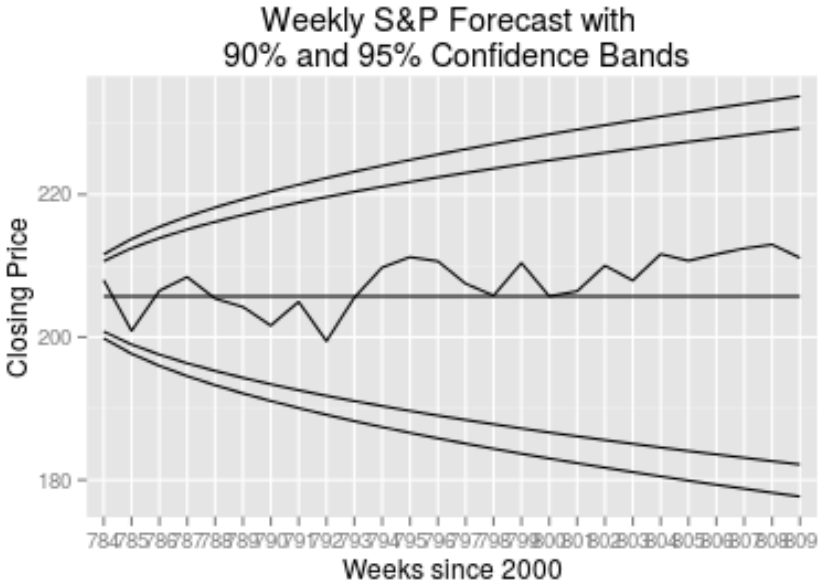
Garch Model

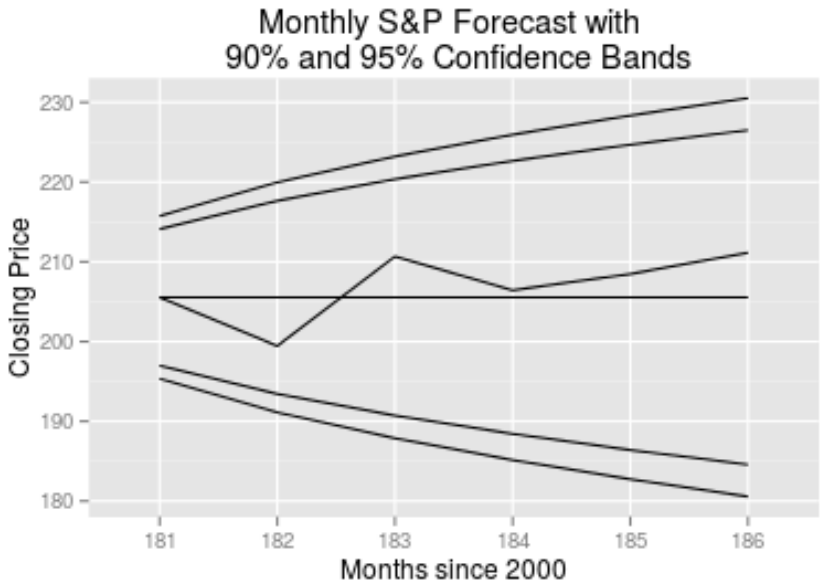
Neural Networks

- Feed-forward network with single hidden layer.
- Lagged inputs for forecasting univariate time series.
- Produces confidence means about mean predicted values.

Neural Networks

Plots of prediction values.





Conclusions and Final Thoughts