SP500 forecast

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Introduction

The purpose of this analysis is to determine if the SP500 Index (Index) is overpriced, as of August 2015, and complete some forecasting analysis.

A forecast of the Index. The Index data was downloaded from Yahoo Finance in August after if had significant drops. Consumer Price Index data was used to deflate the Index's historical price. This data can be downloaded from here.

In conclusion, it seems that the Index is currently overpriced.

Analysis steps

- The data was downloaded
- Historical data was visualized
- Historical data adjusted by the CPI and then was visualized
- Forecasts were completed
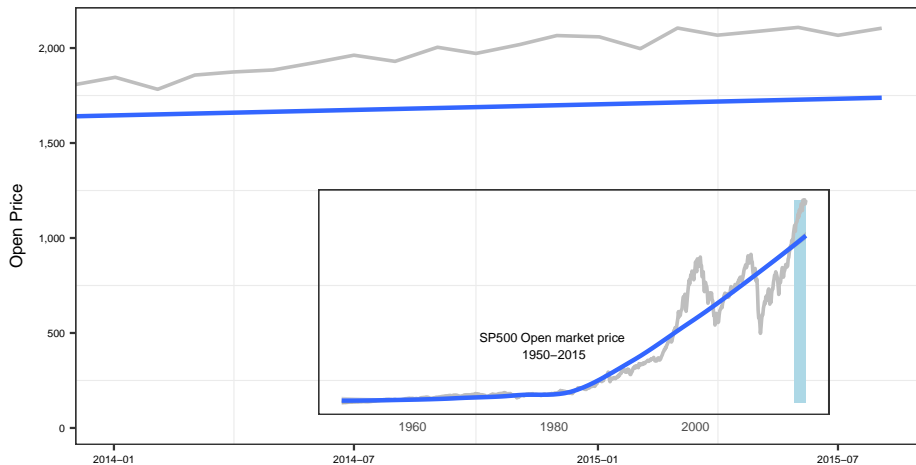
SP500 Open Price by Month

Figure 1: Open market price trend Jan 2014 - Jul 2015

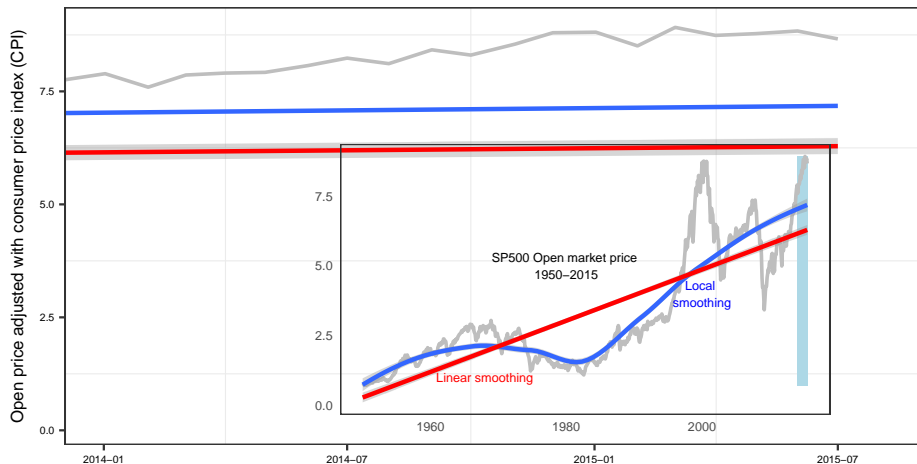# SP500 Open Price adjusted with CPI by Month

Figure 2: CPI adjusted open market price trend Jan 2014 - Jul 2015
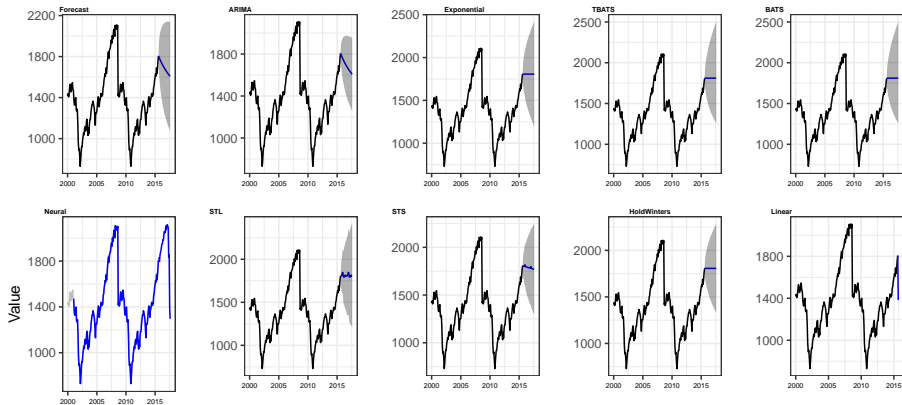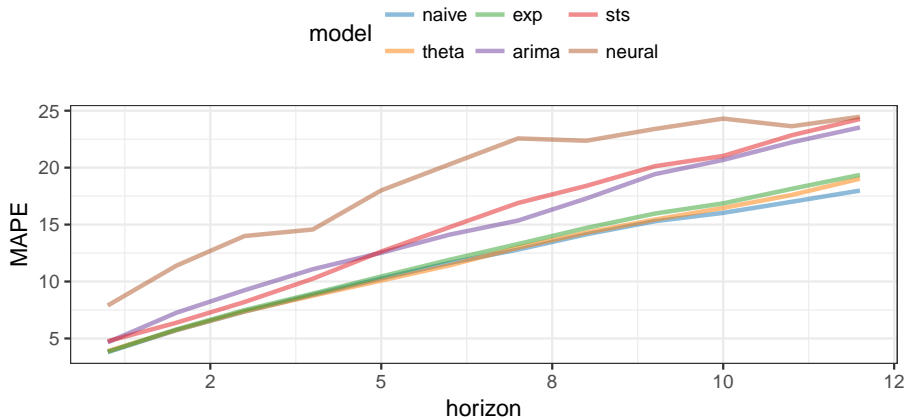
Forecast graphs 3

Figure 3: Forecast plots.

Forecast table

	Model	ME	RMSE	MAE	MPE	MAPE
naive	naive	25.2	202.5	154.2	0.5	11.7
theta	theta	22.3	211.4	153.8	1.0	11.9
exp	exp	11.3	222.1	161.1	-0.3	12.2
arima	arima	15.9	260.0	187.3	0.7	14.8
sts	sts	6.0	287.0	194.1	-0.4	15.1
neural	neural	48.4	331.6	246.7	2.1	18.9

Table 1: Measure each model's accuracy
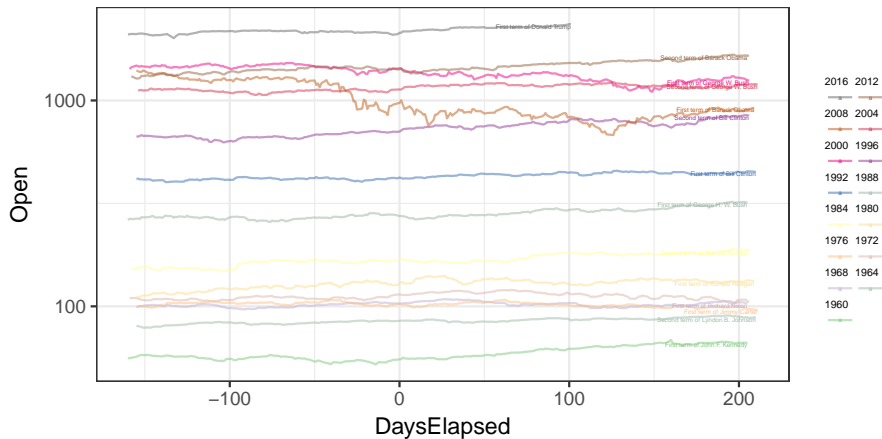
Forecast graphs 3

PresidentialChart 1

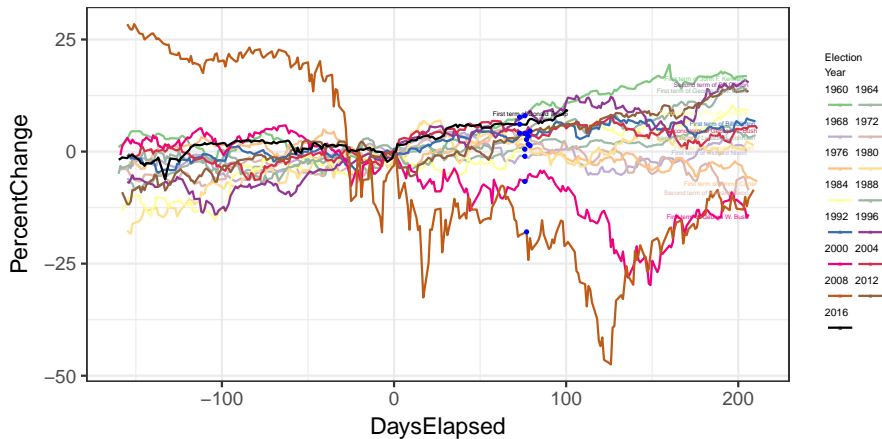Figure 4: first plot

PresidentialChart 2

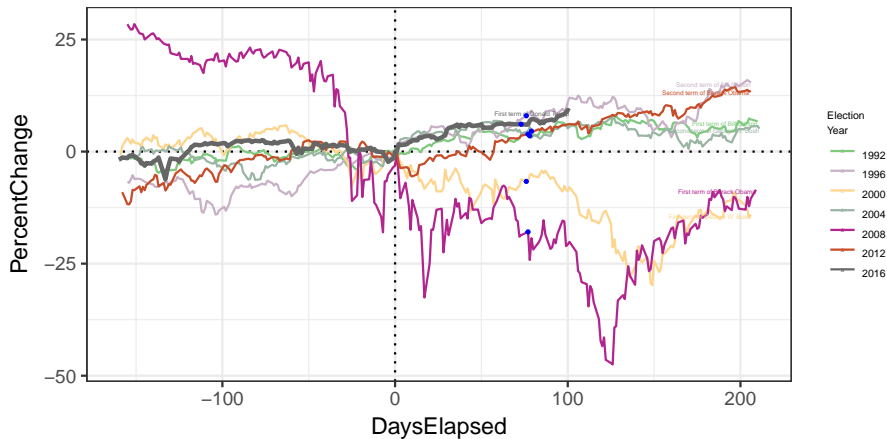Figure 5: second plot

PresidentialChart 3

Figure 6: third plot
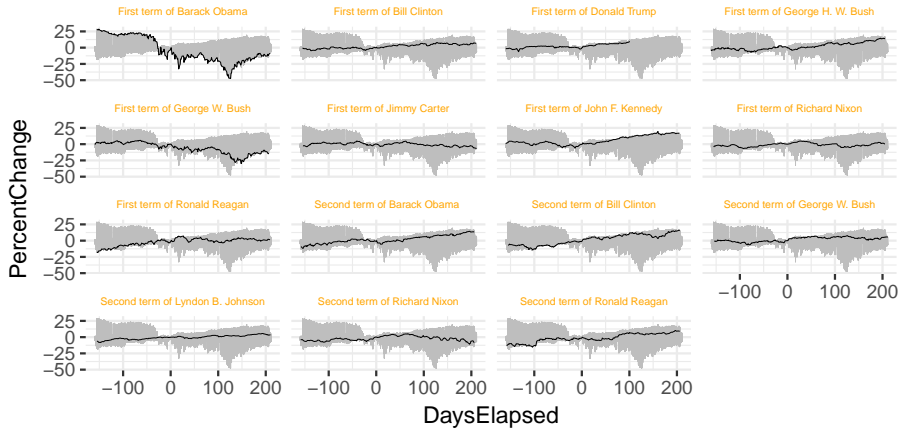
PresidentialChart 5

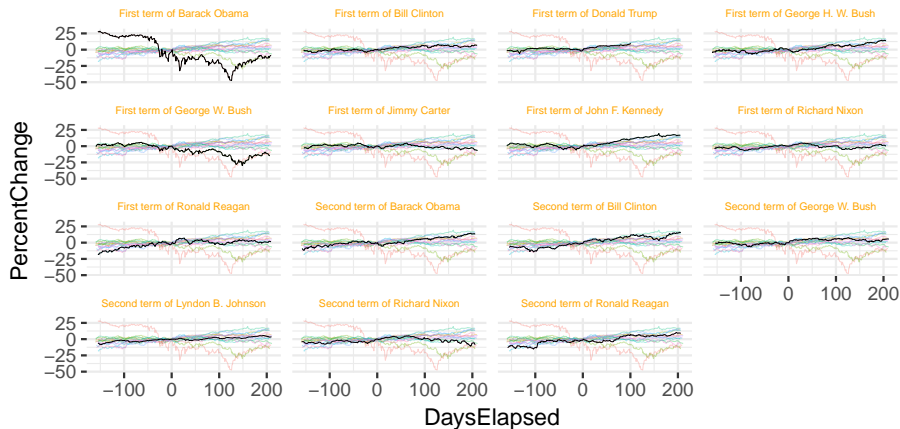Figure 7: fifth plot

PresidentialChart 6

Figure 8: sixth plot

Last Page

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The analysis was completed on Sun Feb 19 8:45:44 AM 2017 in 23 seconds.