LFD Medicaid Model

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LFD MONTANA LEGISLATIVE FISCAL DIVISION

Legislative motivation

- Interest in closely monitoring Medicaid expenditures and projections
- Previous insufficient explanations of methodology by DPHHS
- History of overestimation

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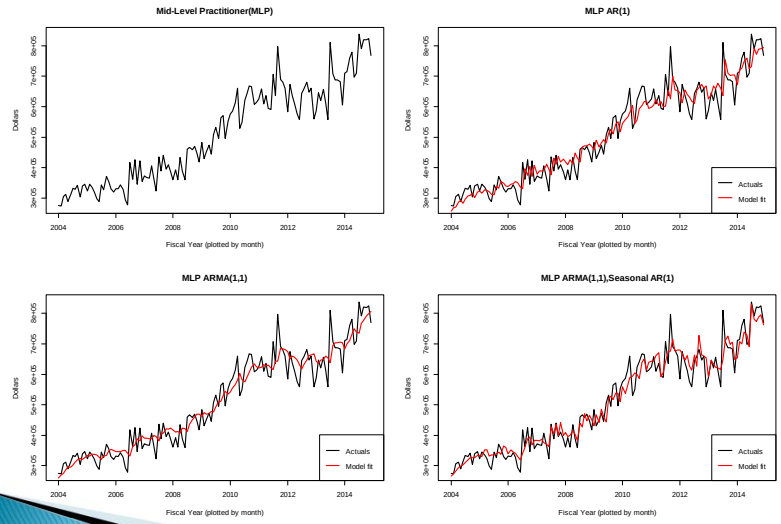
Objectives

- Make prior LFD estimating process more statistically robust
- Develop an independent Medicaid estimate for comparison to executive
- Provide the legislature with insight into the analyses used to develop estimates

Seasonal ARIMA: A time series approach

- AR: Autoregressive
  - Accounts for the prior time period's value for a variable when making future predictions for that variable
- MA: Moving average
  - Accounts for the prior time period's value for the error between the model and the actuals
- Seasonal:
  - Accounts for AR or MA effects over seasons as well as over consecutive time periods

Example: Mid-Level Practitioner



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Additional independent variables

- Economic variables as forecast by IHS are also included
- Forecasts generally differ from the eventual actuals
- This analysis uses forecasts rather than actuals to build predictive models
- 2016 uses FY 2013 forecasts for 2016,
  2017 uses FY 2014 forecasts for 2017

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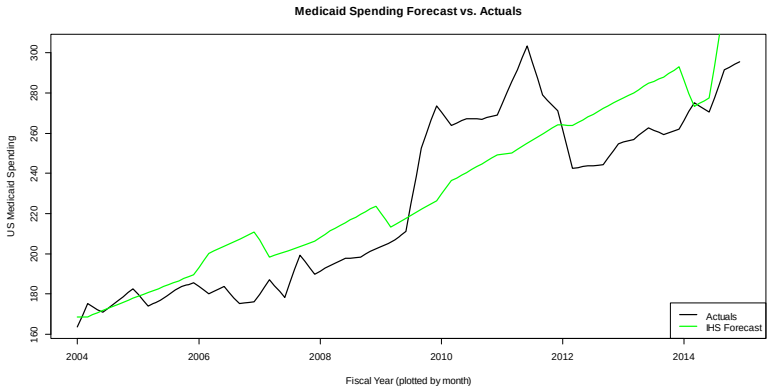
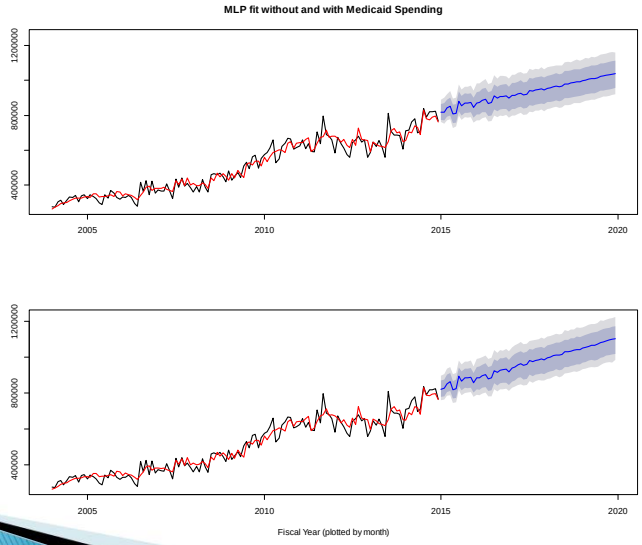
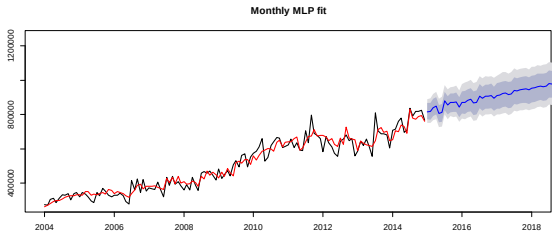
Forecast vs. Actuals

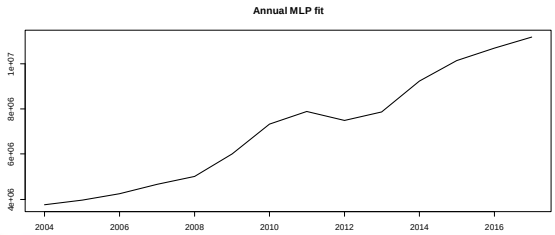


Effect of added variable



Transition to annual data





Status

- Preliminary, based solely on statistical modeling
- Current estimate is very close to executive in all areas that do not have policy or program changes
- Additional analysis of fluctuating areas to be completed before session and compared to executive