Washington State Gasoline Revenue Forecasting

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Web site with the Transportation Revenue Forecast Council forecasts
http://www.ofm.wa.gov/budget/info/transportationrevenue.asp
Current WA Gasoline Consumption Models

Short-term monthly model

- WA uses E-views for monthly gas consumption actuals in an ARIMA (Auto Regressive Moving Average) model
- **X-13ARIMA-SEATS** is a seasonal adjustment software produced, distributed, and maintained by the Census Bureau.
**Current WA Gasoline Consumption Models**

**Long-term quarterly model**
- Multiple economic indicators
  - Incorporates WA non-ag. employment, fuel efficiency, real gas prices, and population
  - Composite variable is created of real gas prices multiplied by fuel efficiency
- 1st Difference - Log-log form
- AR and MA terms
- Flat trend

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**Regression Output**

- **Dependent Variable:** DLOG(GASOLINE)
- **Method:** ARMA Maximum Likelihood (BFGS)
- **Date:** 01/23/17  Time: 17:47
- **Sample:** 0183Q4 2016Q2
- **Included observations:** 131
- **Convergence achieved after 20 iterations**
- **Coefficient covariance computed using outer product of gradients**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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</thead>
<tbody>
<tr>
<td>C</td>
<td>0.001144</td>
<td>0.000901</td>
<td>1.270325</td>
<td>0.2064</td>
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<tr>
<td>DLOG(EW_A_1016)</td>
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<td>DLOG(AQTR_GAS_PRICE_111PDC_1...</td>
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<tr>
<td>AR(1)</td>
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<td>MA(2)</td>
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</table>

- **R-squared:** 0.950844
- **Adjusted R-squared:** 0.947621
- **S.E. of regression:** 0.015920
- **Sum squared resid:** 0.030920
- **Log likelihood:** 356.6192
- **Hannan-Quinn crit.:** -5.228897
- **F-statistic:** 294.9859
- **Durbin-Watson stat.:** 2.020847