H1 FORECAST MODEL
MO 2010-2016 ED Data

The AUTOREG Procedure

Dependent Variable	TCC_PRE

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The AUTOREG Procedure

Ordinary Least Squares Estimates

SSE	45398.7226	**DFE**	61
MSE	744.24135	**Root MSE**	27.28079
SBC	601.619109	**AIC**	597.33284
MAE	23.5292676	**AICC**	597.53284
MAPE	3.15210864	**HQC**	599.018651
Durbin-Watson	0.0427	**Total R-Square**	0.6337

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	825.6530	7.9625	103.69	<.0001
TIME	1	-1.9415	0.1890	-10.27	<.0001

Estimates of Autocorrelations

Lag	Covariance	Correlation	-1 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 1
0	720.6	1.000000	| |******************** |
1	670.0	0.929721	| |******************* |
2	609.6	0.846011	| |***************** |
3	547.8	0.760147	| |*************** |
4	480.9	0.667316	| |************* |
5	402.0	0.557822	| |*********** |
6	314.8	0.436825	| |********* |
7	227.0	0.315057	| |****** |
8	140.9	0.195469	| |**** |
9	55.8652	0.077524	| |** |
10	-22.0422	-0.030588	| *| |
11	-93.0745	-0.129160	| ***| |
12	-161.1	-0.223536	| ****| |
13	-221.3	-0.307088	| ******| |

Preliminary MSE	90.2555

Estimates of Autoregressive Parameters

Lag	Coefficient	Standard Error	t Value
1	-0.906365	0.047270	-19.17
13	0.104482	0.047270	2.21

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9166
2	0.8310
3	0.7434
4	0.6541
5	0.5633
6	0.4710
7	0.3777
8	0.2835
9	0.1886
10	0.0933
11	-0.0023
12	-0.0978
13	-0.1932

Coefficients for First NLAG Observations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	0.3860775695	0	0	0	0	0	0	0	0	0	0	0	0
2	-0.885049762	0.965592549	0	0	0	0	0	0	0	0	0	0	0

Coefficients for First NLAG Observations

	1	2	3	4	5	6	7	8	9	10	11	12	13
3	0.0552409476	−0.937130069	0.9671714083	0	0	0	0	0	0	0	0	0	0
4	0.0571111021	−3.56676E−16	−0.93550051	0.9688561354	0	0	0	0	0	0	0	0	0
5	0.0592579487	8.049674E−16	−1.04298E−15	−0.933755603	0.9706666346	0	0	0	0	0	0	0	0
6	0.0617248159	−6.31225E−16	1.048908E−15	−6.35931E−16	−0.931873394	0.9726271991	0	0	0	0	0	0	0
7	0.0645660333	1.756595E−16	−6.22501E−16	7.646772E−16	−5.07339E−16	−0.929826903	0.9747678909	0	0	0	0	0	0
8	0.0678504565	−6.48212E−16	2.77371E−16	−5.05368E−16	8.350844E−16	−8.70564E−16	−0.927582501	0.9771264634	0	0	0	0	0
9	0.0716664652	3.040083E−16	−4.31385E−16	1.168929E−16	−4.93095E−16	7.000857E−16	−6.27736E−16	−0.925097623	0.9797510948	0	0	0	0
10	0.0761292066	1.13791E−16	3.338751E−16	−4.89572E−16	2.502426E−16	−6.13945E−16	9.074293E−16	−6.57756E−16	−0.922317478	0.9827043624	0	0	0
11	0.0813913491	−2.33823E−16	2.809404E−16	2.255973E−16	−5.45485E−16	4.470068E−16	−8.88417E−16	9.678189E−16	−5.45561E−16	−0.919170209	0.9860691738	0	0
12	0.0876595071	3.094645E−16	−4.03588E−16	2.050878E−16	3.981812E−16	−7.9235E−16	5.620494E−16	−8.81099E−16	1.032743E−15	−7.87545E−16	−0.915559567	0.9899578803	0
13	0.0952201571	−1.37952E−16	2.917853E−16	−3.05059E−16	9.438249E−17	3.671486E−16	−8.04025E−16	5.671741E−16	−9.13077E−16	1.133514E−15	−9.95781E−16	−0.911353462	0.9945267634

Algorithm converged.

H1 FORECAST MODEL
MO 2010-2016 ED Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	969.509978	**DFE**	59
MSE	16.43237	**Root MSE**	4.05369
SBC	373.548648	**AIC**	364.976109
MAE	3.24361573	**AICC**	365.665764
MAPE	0.43820542	**HQC**	368.347731
Log Likelihood	-178.48805	**Transformed Regression R-Square**	0.2820
Durbin-Watson	0.9364	**Total R-Square**	0.9922
		Observations	63

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	802.7950	15.5266	51.70	<.0001
TIME	1	-1.3483	0.3944	-3.42	0.0011
AR1	1	-0.9931	0.0221	-44.84	<.0001
AR13	1	0.1177	0.0164	7.18	<.0001

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9839
2	0.9542
3	0.9112
4	0.8555
5	0.7879
6	0.7094
7	0.6210
8	0.5239
9	0.4196
10	0.3094
11	0.1949
12	0.0778
13	-0.0405

Coefficients for First NLAG Observations

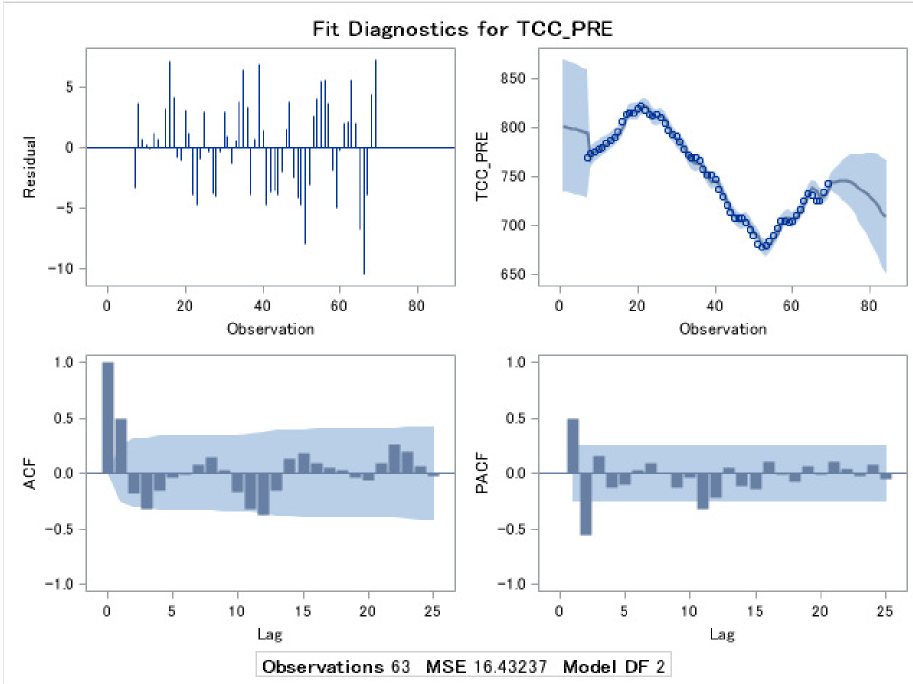
	1	2	3	4	5	6	7	8	9	10	11	12	13
1	0.1344327679	0	0	0	0	0	0	0	0	0	0	0	0
2	-0.741187772	0.7532804802	0	0	0	0	0	0	0	0	0	0	0
3	0.3668061844	-1.185308929	0.8378414281	0	0	0	0	0	0	0	0	0	0
4	0.272663149	4.431362E-15	-1.127124874	0.8810921924	0	0	0	0	0	0	0	0	0
5	0.2196698005	-1.15605E-14	5.098553E-15	-1.093647698	0.9080629234	0	0	0	0	0	0	0	0
6	0.186187795	9.40697E-15	-1.34694E-14	2.795424E-15	-1.071359168	0.9269542426	0	0	0	0	0	0	0
7	0.1635813239	2.751906E-15	1.137829E-14	-1.56302E-14	3.827822E-15	-1.055056668	0.9412773329	0	0	0	0	0	0
8	0.1477268014	-1.62717E-15	9.994699E-16	9.749184E-15	-1.52152E-14	4.867829E-15	-1.042298289	0.9527991526	0	0	0	0	0
9	0.136419066	1.281628E-15	-3.44924E-15	-6.54637E-16	9.680596E-15	-1.394E-14	4.034409E-15	-1.031776388	0.9625156553	0	0	0	0
10	0.128388736	1.029235E-14	2.079633E-15	-5.16734E-15	1.334831E-16	1.125035E-14	-1.56566E-14	3.677867E-15	-1.02271812	0.9710407068	0	0	0
11	0.1228733755	-8.72652E-15	9.750811E-15	1.199409E-15	-4.83654E-15	8.126231E-16	1.000253E-14	-1.53524E-14	5.403735E-15	-1.014627363	0.9787838989	0	0
12	0.1194115215	3.455519E-15	-8.61495E-15	6.95327E-15	1.381476E-15	-2.93204E-15	-3.57821E-16	9.709691E-15	-1.33122E-14	4.040328E-15	-1.007159778	0.9860410905	0
13	0.117738091	-2.10133E-15	3.524931E-15	-9.98827E-15	8.130342E-15	1.536246E-15	-3.65998E-15	-7.6735E-16	1.156603E-14	-1.51518E-14	4.468255E-15	-1.000055852	0.9930454623

Autoregressive parameters assumed given

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	802.7950	11.5223	69.67	<.0001
TIME	1	-1.3483	0.2801	-4.81	<.0001

H1 FORECAST MODEL
MO 2010-2016 ED Data

The AUTOREG Procedure



H2 FORECAST MODEL
MO 2010-2016 ED Data

The AUTOREG Procedure

Dependent Variable	TCC_PRE

H2 FORECAST MODEL
MO 2010-2016 ED Data

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	504.556661	DFE	61
MSE	8.27142	Root MSE	2.87601
SBC	318.146886	AIC	313.860617
MAE	2.30733757	AICC	314.060617
MAPE	3.91113308	HQC	315.546427
Durbin-Watson	0.1082	Total R-Square	0.0577

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	56.6971	0.8394	67.54	<.0001
TIME	1	0.0385	0.0199	1.93	0.0579

Estimates of Autocorrelations

Lag	Covariance	Correlation	-1 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 1
0	8.0088	1.000000	| |********************|
1	6.4407	0.804198	| |**************** |

Preliminary MSE	2.8292

Estimates of Autoregressive Parameters

Lag	Coefficient	Standard Error	t Value
1	-0.804198	0.076732	-10.48

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.8042

Coefficients for First NLAG Observations

	1
1	0.5943612899

Algorithm converged.

H2 FORECAST MODEL
MO 2010-2016 ED Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	51.2186955	DFE	60
MSE	0.85364	Root MSE	0.92393
SBC	181.322075	AIC	174.892671
MAE	0.62160459	AICC	175.299451
MAPE	1.04061325	HQC	177.421387
Log Likelihood	-84.446336	Transformed Regression R-Square	0.1193
Durbin-Watson	0.4635	Total R-Square	0.9043
		Observations	63

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	51.3019	5.1990	9.87	<.0001
TIME	1	0.2497	0.1185	2.11	0.0393
AR1	1	-0.9783	0.0294	-33.25	<.0001

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9783

Coefficients for First NLAG Observations

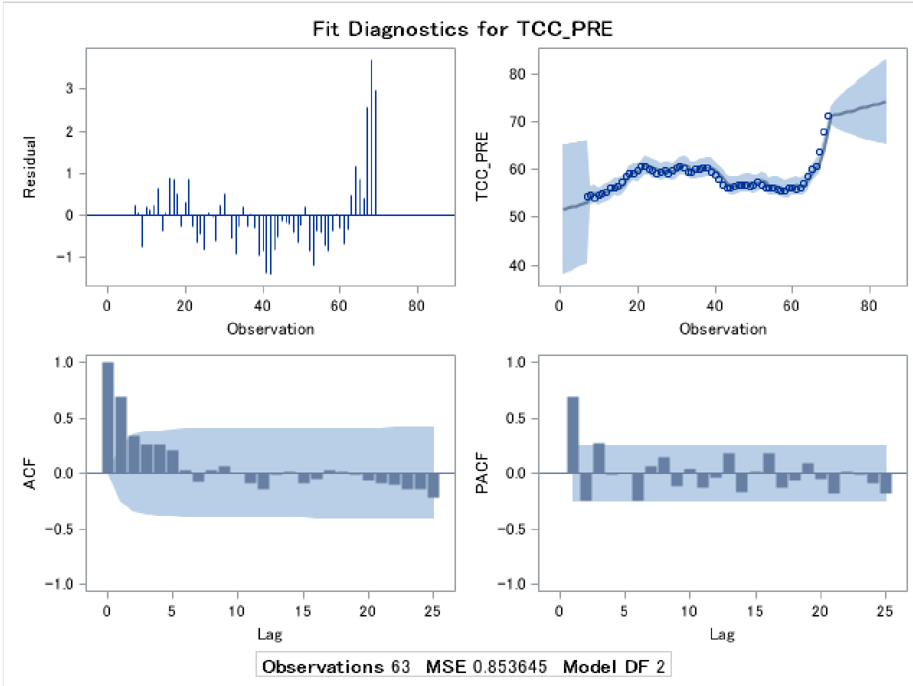
	1
1	0.2070786597

Autoregressive parameters assumed given

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	51.3019	4.7895	10.71	<.0001
TIME	1	0.2497	0.0876	2.85	0.0060

H2 FORECAST MODEL
MO 2010-2016 ED Data

The AUTOREG Procedure



H3 FORECAST MODEL
MO 2010-2016 ED Data

The AUTOREG Procedure

Dependent Variable	TCC_PRE

H3 FORECAST MODEL
MO 2010-2016 ED Data

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	8415.93699	**DFE**	61
MSE	137.96618	**Root MSE**	11.74590
SBC	495.441631	**AIC**	491.155362
MAE	9.93968147	**AICC**	491.355362
MAPE	13.1200539	**HQC**	492.841172
Durbin-Watson	0.0331	**Total R-Square**	0.5683

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	49.1021	3.4283	14.32	<.0001
TIME	1	0.7292	0.0814	8.96	<.0001

Estimates of Autocorrelations

Lag	Covariance	Correlation	-1 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 1
0	133.6	1.000000	| |********************|
1	124.3	0.930505	| |******************* |

Preliminary MSE	17.9219

Estimates of Autoregressive Parameters

Lag	Coefficient	Standard Error	t Value
1	-0.930505	0.047286	-19.68

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9305

Coefficients for First NLAG Observations

	1
1	0.366278074

Algorithm converged.

H3 FORECAST MODEL
MO 2010-2016 ED Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	268.17347	**DFE**	60
MSE	4.46956	**Root MSE**	2.11413
SBC	286.110831	**AIC**	279.681426
MAE	1.63315478	**AICC**	280.088206
MAPE	2.09886846	**HQC**	282.210142
Log Likelihood	-136.84071	**Transformed Regression R-Square**	0.2998
Durbin-Watson	0.4719	**Total R-Square**	0.9862
		Observations	63

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	45.6026	15.0922	3.02	0.0037
TIME	1	1.1299	0.3293	3.43	0.0011
AR1	1	-0.9868	0.0220	-44.93	<.0001

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9868

Coefficients for First NLAG Observations

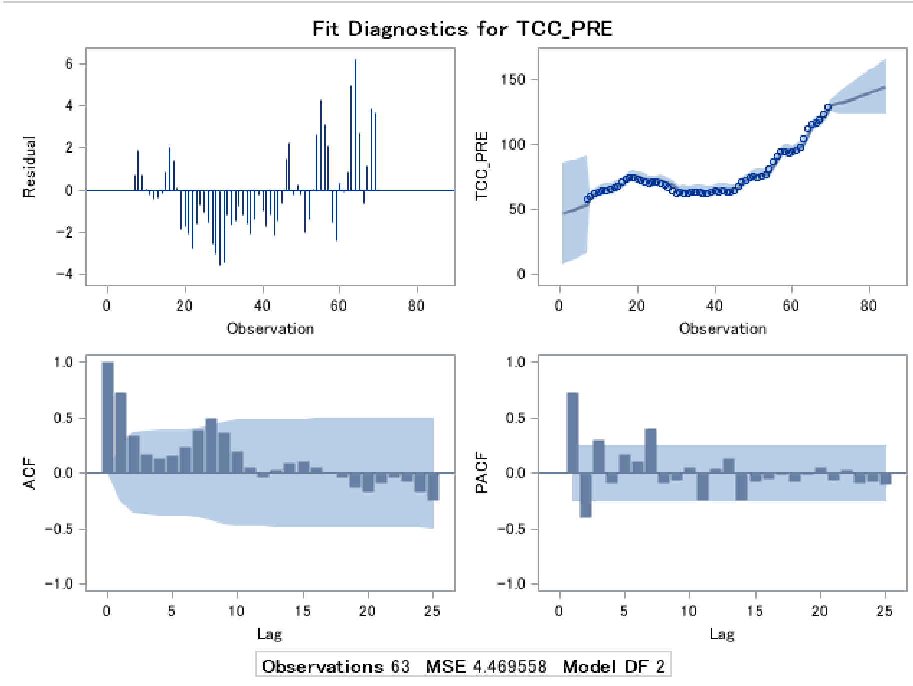
	1
1	0.1620489256

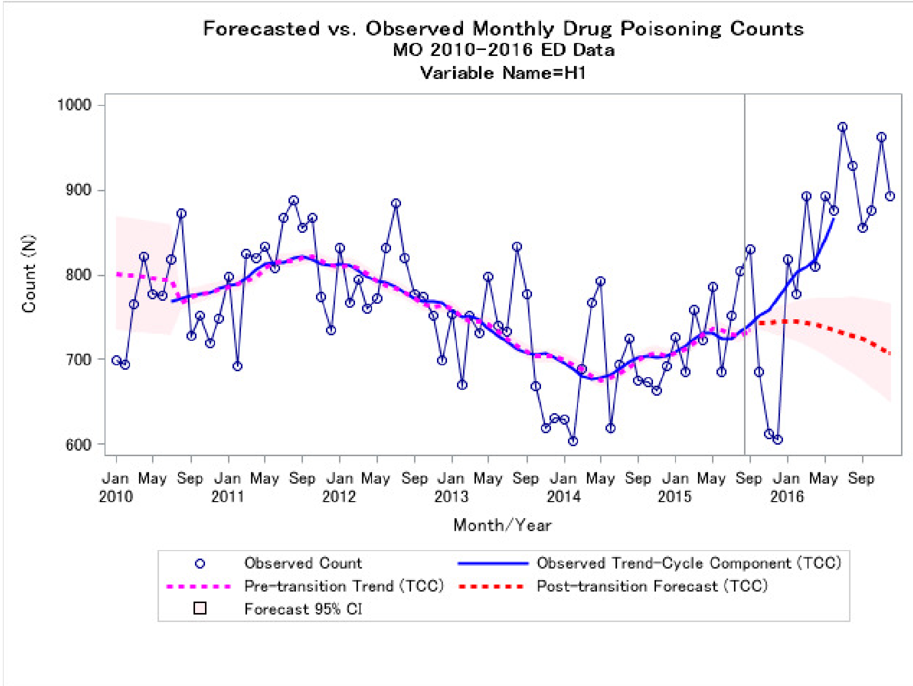
Autoregressive parameters assumed given

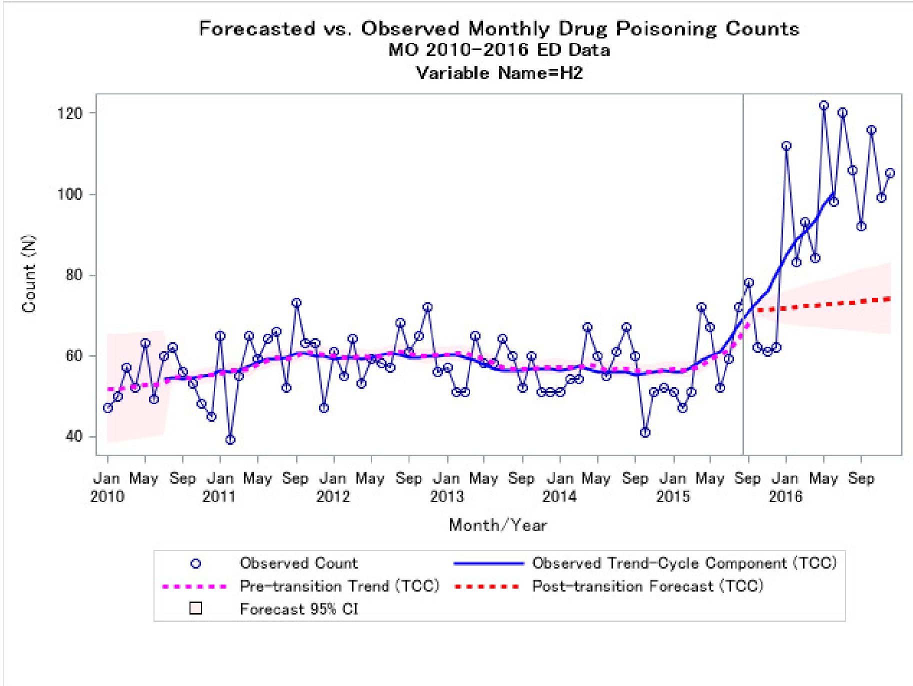
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	45.6026	13.8674	3.29	0.0017
TIME	1	1.1299	0.2230	5.07	<.0001

H3 FORECAST MODEL
MO 2010-2016 ED Data

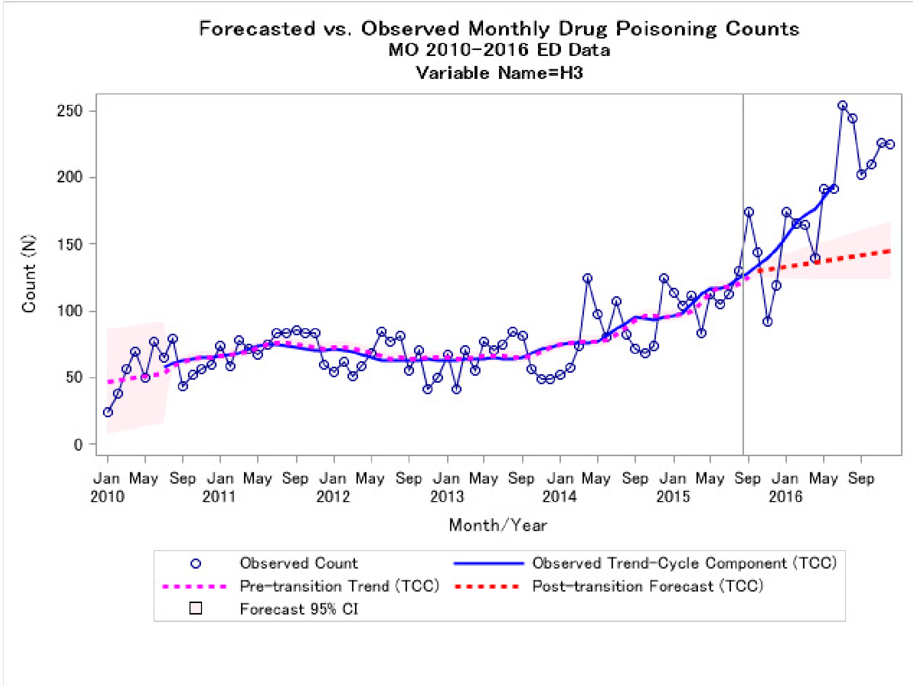
The AUTOREG Procedure




Forecasted vs. Observed Monthly Drug Poisoning Counts
MO 2010-2016 ED Data
Variable Name=H1
Count (N)
1000
900
800
700
600
Jan 2010
May
Sep
Jan 2011
May
Sep
Jan 2012
May
Sep
Jan 2013
May
Sep
Jan 2014
May
Sep
Jan 2015
May
Sep
Jan 2016
May
Sep
Month/Year
Observed Count
Observed Trend-Cycle Component (TCC)
Pre-transition Trend (TCC)
Post-transition Forecast (TCC)
Forecast 95% CI



Forecasted vs. Observed Monthly Drug Poisoning Counts
MO 2010-2016 ED Data
Variable Name=H2
Count (N)
120
100
80
60
40
Jan 2010
May
Sep
Jan 2011
May
Sep
Jan 2012
May
Sep
Jan 2013
May
Sep
Jan 2014
May
Sep
Jan 2015
May
Sep
Jan 2016
May
Sep
Month/Year
Observed Count
Observed Trend-Cycle Component (TCC)
Pre-transition Trend (TCC)
Post-transition Forecast (TCC)
Forecast 95% CI


Forecasted vs. Observed Monthly Drug Poisoning Counts
MO 2010-2016 ED Data
Variable Name=H3
Count (N)
250
200
150
100
50
0
Jan 2010
May
Sep
Jan 2011
May
Sep
Jan 2012
May
Sep
Jan 2013
May
Sep
Jan 2014
May
Sep
Jan 2015
May
Sep
Jan 2016
May
Sep
Month/Year
Observed Count
Observed Trend-Cycle Component (TCC)
Pre-transition Trend (TCC)
Post-transition Forecast (TCC)
Forecast 95% CI