H1 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

The AUTOREG Procedure

Dependent Variable	TCC
	Trend-Cycle Component

H1 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	147825.85	**DFE**	68
MSE	2174	**Root MSE**	46.62520
SBC	770.586745	**AIC**	761.480081
MAE	37.0461344	**AICC**	762.077096
MAPE	5.75766946	**HQC**	765.105471
Durbin-Watson	0.0977	**Total R-Square**	0.8830

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	491.0174	13.6086	36.08	<.0001
PRESLOPE	1	3.7506	0.3230	11.61	<.0001
INTERVENTION	1	102.0994	35.8069	2.85	0.0058
POSTSLOPE	1	20.0160	6.0193	3.33	0.0014

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	2053.1	1.000000	| |********************|
1	1948.9	0.949225	| |******************* |
2	1820.2	0.886557	| |****************** |
3	1669.9	0.813345	| |**************** |
4	1501.8	0.731463	| |*************** |
5	1329.7	0.647657	| |************* |
6	1166.0	0.567927	| |*********** |
7	997.9	0.486034	| |********** |
8	798.5	0.388907	| |******** |
9	574.1	0.279611	| |****** |

Preliminary MSE	183.8

Estimates of Autoregressive Parameters

Lag	Coefficient	Standard Error	t Value
1	-0.990257	0.039977	-24.77
9	0.105507	0.039977	2.64

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9520
2	0.8934
3	0.8248
4	0.7470

Expected Autocorrelations	
Lag	**Autocorr**
5	0.6609
6	0.5675
7	0.4677
8	0.3627
9	0.2536

Coefficients for First NLAG Observations

	1	2	3	4	5	6	7	8	9
1	0.2899060359	0	0	0	0	0	0	0	0
2	-0.901551076	0.947016289	0	0	0	0	0	0	0
3	0.1317716406	-1.035682155	0.9561399567	0	0	0	0	0	0
4	0.1226481074	-3.38835E-16	-1.027265185	0.9639741569	0	0	0	0	0
5	0.1159207824	-3.61845E-16	2.482202E-16	-1.019917253	0.9709190506	0	0	0	0
6	0.1110715303	-1.13426E-16	-2.27006E-15	1.118343E-15	-1.013308233	0.977251599	0	0	0
7	0.1077686369	5.528671E-16	-6.29101E-17	-2.14609E-15	5.544065E-16	-1.007202407	0.9831758575	0	0
8	0.1058052472	9.920723E-16	1.01997E-15	-5.81896E-16	-2.24041E-15	2.033804E-16	-1.001420297	0.9888526266	0
9	0.1050654774	4.743352E-16	7.263645E-16	1.049028E-15	-8.95086E-16	-1.89007E-15	2.091612E-16	-0.995815174	0.9944185596

Algorithm converged.

H1 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	1349.37341	DFE	66
MSE	20.44505	Root MSE	4.52162
SBC	447.642332	AIC	433.982335
MAE	3.40427681	AICC	435.274643
MAPE	0.48740867	HQC	439.42042
Log Likelihood	-210.99117	Transformed Regression R-Square	0.7261
Durbin-Watson	1.1159	Total R-Square	0.9989
		Observations	72

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	482.1277	26.4452	18.23	<.0001
PRESLOPE	1	4.2071	0.6784	6.20	<.0001
INTERVENTION	1	-5.0772	4.7839	-1.06	0.2924
POSTSLOPE	1	18.5871	3.2311	5.75	<.0001
AR1	1	-1.0753	0.0136	-79.32	<.0001
AR9	1	0.1329	0.0164	8.11	<.0001

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9907
2	0.9703
3	0.9391
4	0.8974
5	0.8458
6	0.7847
7	0.7149
8	0.6371
9	0.5522

Coefficients for First NLAG Observations

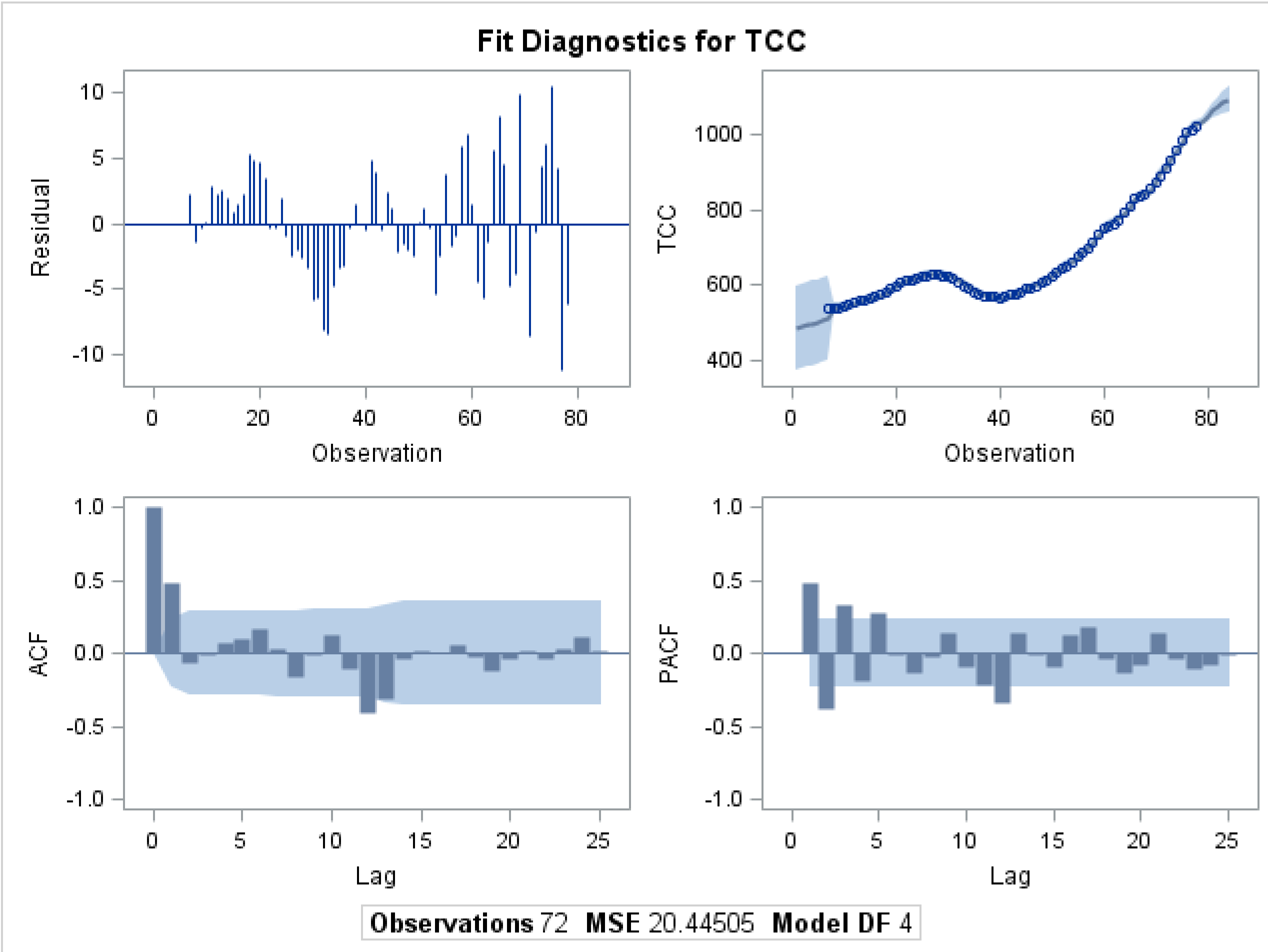
	1	2	3	4	5	6	7	8	9
1	0.0900197976	0	0	0	0	0	0	0	0
2	-0.654024291	0.66019038	0	0	0	0	0	0	0
3	0.4931590999	-1.304905844	0.824049292	0	0	0	0	0	0
4	0.3363777622	-1.44801E-14	-1.208128042	0.8900602421	0	0	0	0	0
5	0.2580214783	-3.35828E-14	-8.24828E-15	-1.160354845	0.9267050867	0	0	0	0
6	0.2113577422	2.821238E-14	-2.56649E-14	-1.2559E-14	-1.131303798	0.9505021899	0	0	0
7	0.1807618709	2.728826E-16	1.998495E-14	-2.94106E-14	-4.73868E-15	-1.111384806	0.9675377341	0	0

Coefficients for First NLAG Observations									
	1	2	3	4	5	6	7	8	9
8	0.1594894483	-1.34661E-14	6.715074E-15	1.387453E-14	-2.27089E-14	-8.3521E-15	-1.096586218	0.9805947945	0
9	0.1441522475	1.830613E-14	-1.75473E-14	3.605499E-15	1.817125E-14	-2.51398E-14	-8.55276E-15	-1.084926011	0.9911337052

Autoregressive parameters assumed given					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	482.1277	24.6372	19.57	<.0001
PRESLOPE	1	4.2071	0.5848	7.19	<.0001
INTERVENTION	1	-5.0772	4.6387	-1.09	0.2777
POSTSLOPE	1	18.5871	2.4973	7.44	<.0001

H1 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

The AUTOREG Procedure



H2 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

The AUTOREG Procedure

Dependent Variable	TCC
	Trend-Cycle Component

H2 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	3597.73839	DFE	68
MSE	52.90792	Root MSE	7.27378
SBC	503.054223	AIC	493.947559
MAE	5.64653717	AICC	494.544574
MAPE	9.42464595	HQC	497.572949
Durbin-Watson	0.1837	Total R-Square	0.8550

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	49.2482	2.1230	23.20	<.0001
PRESLOPE	1	0.2228	0.0504	4.42	<.0001
INTERVENTION	1	22.4602	5.5861	4.02	0.0001
POSTSLOPE	1	4.0063	0.9390	4.27	<.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	49.9686	1.000000	| |********************|
1	45.2653	0.905875	| |****************** |
2	39.9334	0.799171	| |**************** |
3	34.5142	0.690719	| |************** |
4	29.0988	0.582342	| |************ |
5	24.4462	0.489231	| |********** |
6	21.3526	0.427321	| |********* |
7	18.1673	0.363574	| |******* |
8	13.0872	0.261908	| |***** |
9	6.9079	0.138245	| |*** |

Preliminary MSE	8.4380

Estimates of Autoregressive Parameters

Lag	Coefficient	Standard Error	t Value
1	-0.933716	0.052412	-17.81
9	0.106302	0.052412	2.03

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9153
2	0.8238
3	0.7262
4	0.6233

Expected Autocorrelations	
Lag	**Autocorr**
5	0.5157
6	0.4043
7	0.2899
8	0.1734
9	0.0556

Coefficients for First NLAG Observations

	1	2	3	4	5	6	7	8	9
1	0.3889739712	0	0	0	0	0	0	0	0
2	-0.883827891	0.965635796	0	0	0	0	0	0	0
3	0.0833124416	-0.963365575	0.9692231185	0	0	0	0	0	0
4	0.0841342115	9.704554E-16	-0.959756359	0.972867935	0	0	0	0	0
5	0.0856131866	4.386597E-16	3.90773E-16	-0.956061558	0.9766276858	0	0	0	0
6	0.0878076022	-1.31646E-15	7.456481E-16	4.554462E-16	-0.952220607	0.9805670868	0	0	0
7	0.0908084419	1.601379E-16	-7.60952E-16	5.037023E-16	4.520032E-16	-0.948163441	0.984762908	0	0
8	0.0947492251	2.83074E-16	-2.77259E-17	-7.02E-16	4.383478E-16	2.477735E-16	-0.943804925	0.9893105683	0
9	0.0998218586	-5.92169E-16	6.261739E-16	-7.05954E-17	-8.48176E-16	7.868174E-16	1.972848E-16	-0.939036912	0.9943338494

Algorithm converged.

H2 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	86.9988934	DFE	66
MSE	1.31817	Root MSE	1.14811
SBC	249.881047	AIC	236.22105
MAE	0.81557186	AICC	237.513358
MAPE	1.23991714	HQC	241.659135
Log Likelihood	-112.11053	Transformed Regression R-Square	0.4127
Durbin-Watson	1.0170	Total R-Square	0.9965
		Observations	72

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	44.0759	6.3923	6.90	<.0001
PRESLOPE	1	0.4376	0.1702	2.57	0.0124
INTERVENTION	1	0.1608	1.2353	0.13	0.8968
POSTSLOPE	1	2.5233	0.8925	2.83	0.0062
AR1	1	-1.0698	0.0201	-53.31	<.0001
AR9	1	0.1330	0.0233	5.70	<.0001

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9892
2	0.9665
3	0.9323
4	0.8868
5	0.8308
6	0.7648
7	0.6896
8	0.6062
9	0.5155

Coefficients for First NLAG Observations

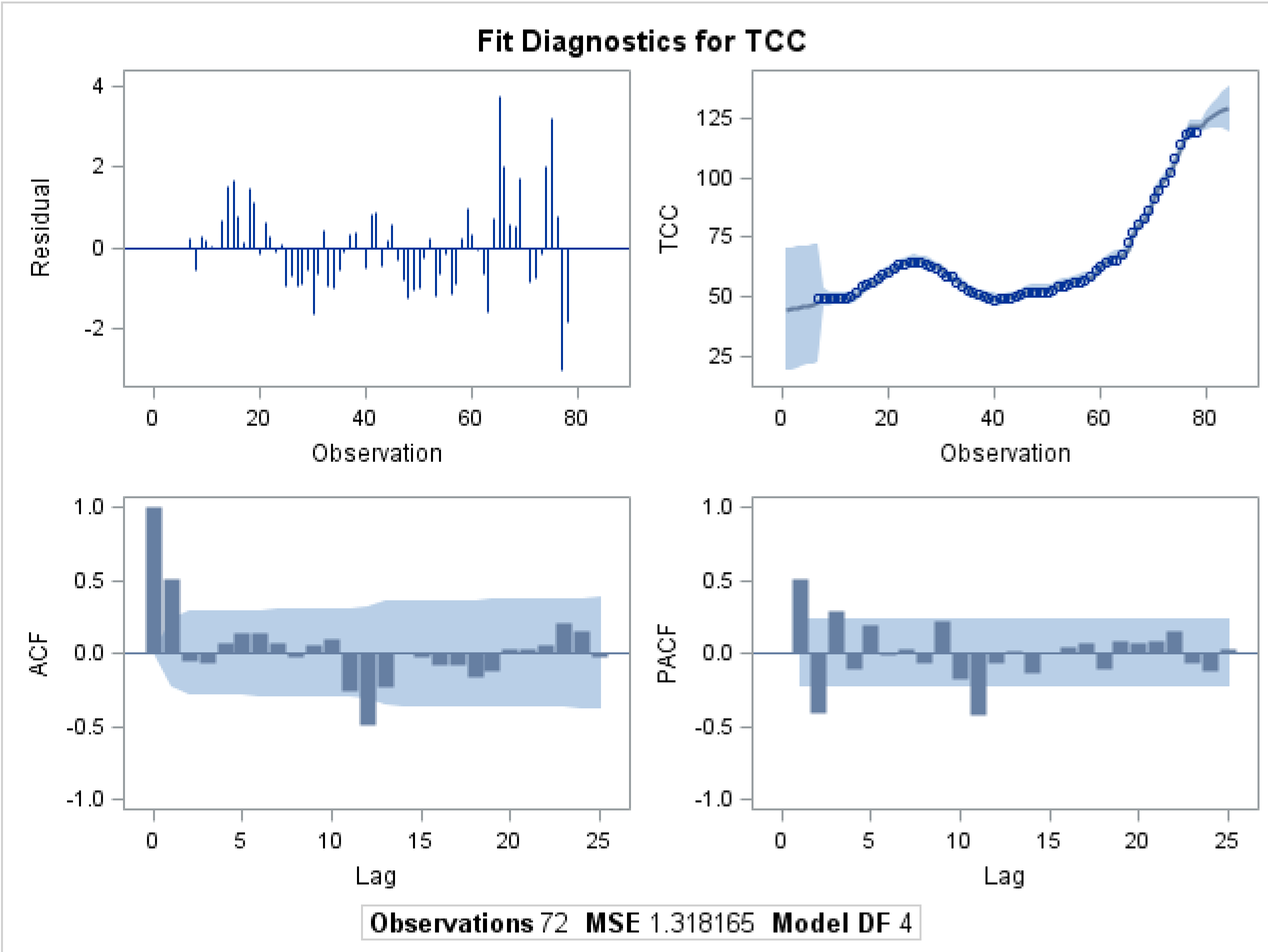
	1	2	3	4	5	6	7	8	9
1	0.1015225782	0	0	0	0	0	0	0	0
2	-0.684846023	0.6923300581	0	0	0	0	0	0	0
3	0.4640954249	-1.283558562	0.8334899356	0	0	0	0	0	0
4	0.3232326406	1.242495E-14	-1.196719691	0.8939713713	0	0	0	0	0
5	0.2507815613	-2.45087E-14	1.384783E-14	-1.152240721	0.928480589	0	0	0	0
6	0.2070442236	1.142392E-14	-1.63254E-14	1.039358E-14	-1.12461873	0.951285191	0	0	0
7	0.1781787985	-1.46503E-14	5.11166E-15	-1.84996E-14	1.447738E-14	-1.105395846	0.9678280833	0	0

Coefficients for First NLAG Observations									
	1	2	3	4	5	6	7	8	9
8	0.1580712826	2.861776E-14	-7.4207E-15	1.334701E-15	-1.42804E-14	9.791024E-15	-1.090941012	0.980651686	0
9	0.1436064344	-2.88846E-14	2.973951E-14	-9.47587E-15	5.439059E-15	-1.97003E-14	1.673913E-14	-1.079428442	0.9911107593

Autoregressive parameters assumed given					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	44.0759	5.6894	7.75	<.0001
PRESLOPE	1	0.4376	0.1352	3.24	0.0019
INTERVENTION	1	0.1608	1.1803	0.14	0.8920
POSTSLOPE	1	2.5233	0.6247	4.04	0.0001

H2 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

The AUTOREG Procedure



H3 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

The AUTOREG Procedure

Dependent Variable	TCC
	Trend-Cycle Component

H3 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	19980.5986	DFE	68
MSE	293.83233	Root MSE	17.14154
SBC	626.495077	AIC	617.388413
MAE	13.1221743	AICC	617.985428
MAPE	23.498627	HQC	621.013803
Durbin-Watson	0.1284	Total R-Square	0.9691

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	-34.7189	5.0031	-6.94	<.0001
PRESLOPE	1	3.3163	0.1188	27.92	<.0001
INTERVENTION	1	33.4999	13.1642	2.54	0.0132
POSTSLOPE	1	16.7160	2.2130	7.55	<.0001

Estimates of Autocorrelations

<table>
<tr><th>Lag</th><th>Covariance</th><th>Correlation</th><th>-1 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 1</th></tr>
<tr><td>0</td><td>277.5</td><td>1.000000</td><td>| |********************|</td></tr>
<tr><td>1</td><td>253.7</td><td>0.914381</td><td>| |****************** |</td></tr>
<tr><td>2</td><td>225.3</td><td>0.811839</td><td>| |**************** |</td></tr>
<tr><td>3</td><td>196.9</td><td>0.709668</td><td>| |************** |</td></tr>
<tr><td>4</td><td>164.9</td><td>0.594105</td><td>| |************ |</td></tr>
<tr><td>5</td><td>131.8</td><td>0.474822</td><td>| |********* |</td></tr>
<tr><td>6</td><td>105.5</td><td>0.380159</td><td>| |******** |</td></tr>
<tr><td>7</td><td>80.0547</td><td>0.288477</td><td>| |****** |</td></tr>
<tr><td>8</td><td>46.9584</td><td>0.169214</td><td>| |*** |</td></tr>
<tr><td>9</td><td>12.0448</td><td>0.043403</td><td>| |* |</td></tr>
</table>

Preliminary MSE	41.9453

Estimates of Autoregressive Parameters

Lag	Coefficient	Standard Error	t Value
1	-0.933774	0.048556	-19.23
9	0.114605	0.048556	2.36

Expected Autocorrelations

Lag	Autocorr
0	1.0000
1	0.9169
2	0.8252
3	0.7258
4	0.6195

Expected Autocorrelations	
Lag	**Autocorr**
5	0.5075
6	0.3907
7	0.2703
8	0.1473
9	0.0229

Coefficients for First NLAG Observations

	1	2	3	4	5	6	7	8	9
1	0.38269834	0	0	0	0	0	0	0	0
2	-0.879138713	0.9588237046	0	0	0	0	0	0	0
3	0.0937157998	-0.969255376	0.9633927276	0	0	0	0	0	0
4	0.093587435	2.654007E-16	-0.96471412	0.9679277636	0	0	0	0	0
5	0.0943441804	-1.35893E-17	2.647078E-16	-0.960163905	0.9725147711	0	0	0	0
6	0.0960224156	-9.81798E-16	-1.25839E-16	4.045285E-16	-0.955517609	0.977243718	0	0	0
7	0.0987053936	7.247135E-16	-2.58171E-16	-1.60368E-16	4.046698E-18	-0.950680596	0.9822158821	0	0
8	0.1025337234	-4.66101E-16	6.796889E-16	-5.09695E-16	-2.1975E-16	3.758718E-16	-0.945542618	0.9875531396	0
9	0.1077245443	5.700816E-17	-9.92178E-17	5.586897E-16	-5.27485E-16	-1.83169E-16	5.138646E-16	-0.939966849	0.9934111842

Algorithm converged.

H3 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	661.653031	DFE	66
MSE	10.02505	Root MSE	3.16624
SBC	394.773868	AIC	381.113872
MAE	2.12511919	AICC	382.406179
MAPE	2.57745893	HQC	386.551957
Log Likelihood	-184.55694	Transformed Regression R-Square	0.8294
Durbin-Watson	1.2285	Total R-Square	0.9990
		Observations	72

Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	-33.1633	15.1269	-2.19	0.0319
PRESLOPE	1	3.4372	0.3915	8.78	<.0001
INTERVENTION	1	-6.5357	3.3490	-1.95	0.0552
POSTSLOPE	1	15.5664	2.3292	6.68	<.0001
AR1	1	-1.0590	0.0230	-46.07	<.0001
AR9	1	0.1244	0.0244	5.10	<.0001

Expected Autocorrelations	
Lag	Autocorr
0	1.0000
1	0.9851
2	0.9591
3	0.9222
4	0.8749
5	0.8177
6	0.7512
7	0.6762
8	0.5935
9	0.5041

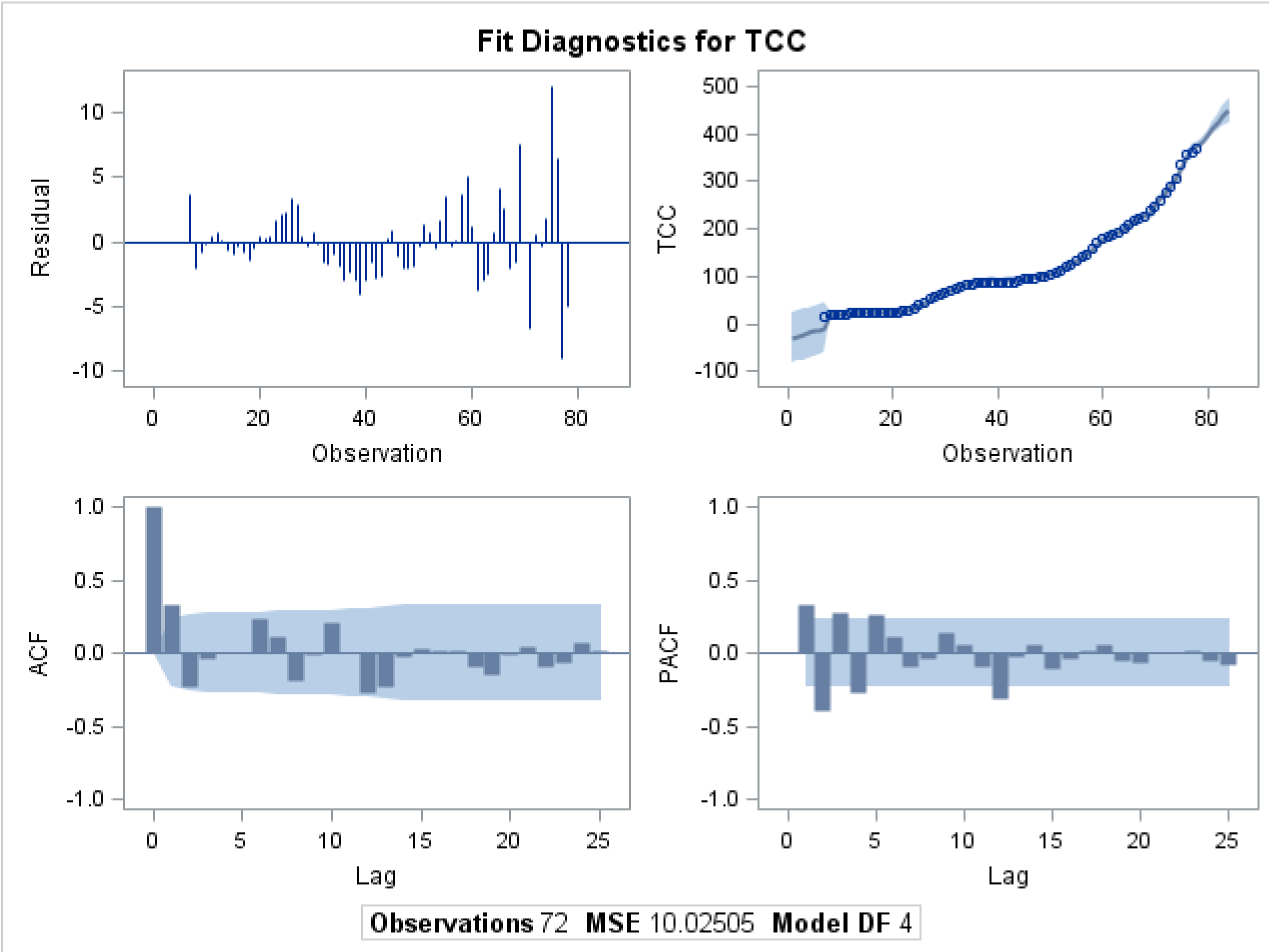
Coefficients for First NLAG Observations									
	1	2	3	4	5	6	7	8	9
1	0.1395273751	0	0	0	0	0	0	0	0
2	-0.800418368	0.8124884318	0	0	0	0	0	0	0
3	0.3398493931	-1.202418746	0.8807014601	0	0	0	0	0	0
4	0.2595005363	2.567654E-15	-1.153392055	0.9181370214	0	0	0	0	0
5	0.2120063051	-1.8605E-15	1.988009E-15	-1.123820583	0.9422962716	0	0	0	0
6	0.1810122493	-2.90589E-16	-4.17882E-15	3.114923E-15	-1.103642166	0.959524725	0	0	0
7	0.1595354538	1.478063E-15	-7.6024E-16	-3.72767E-15	2.684801E-15	-1.088696742	0.9726968998	0	0

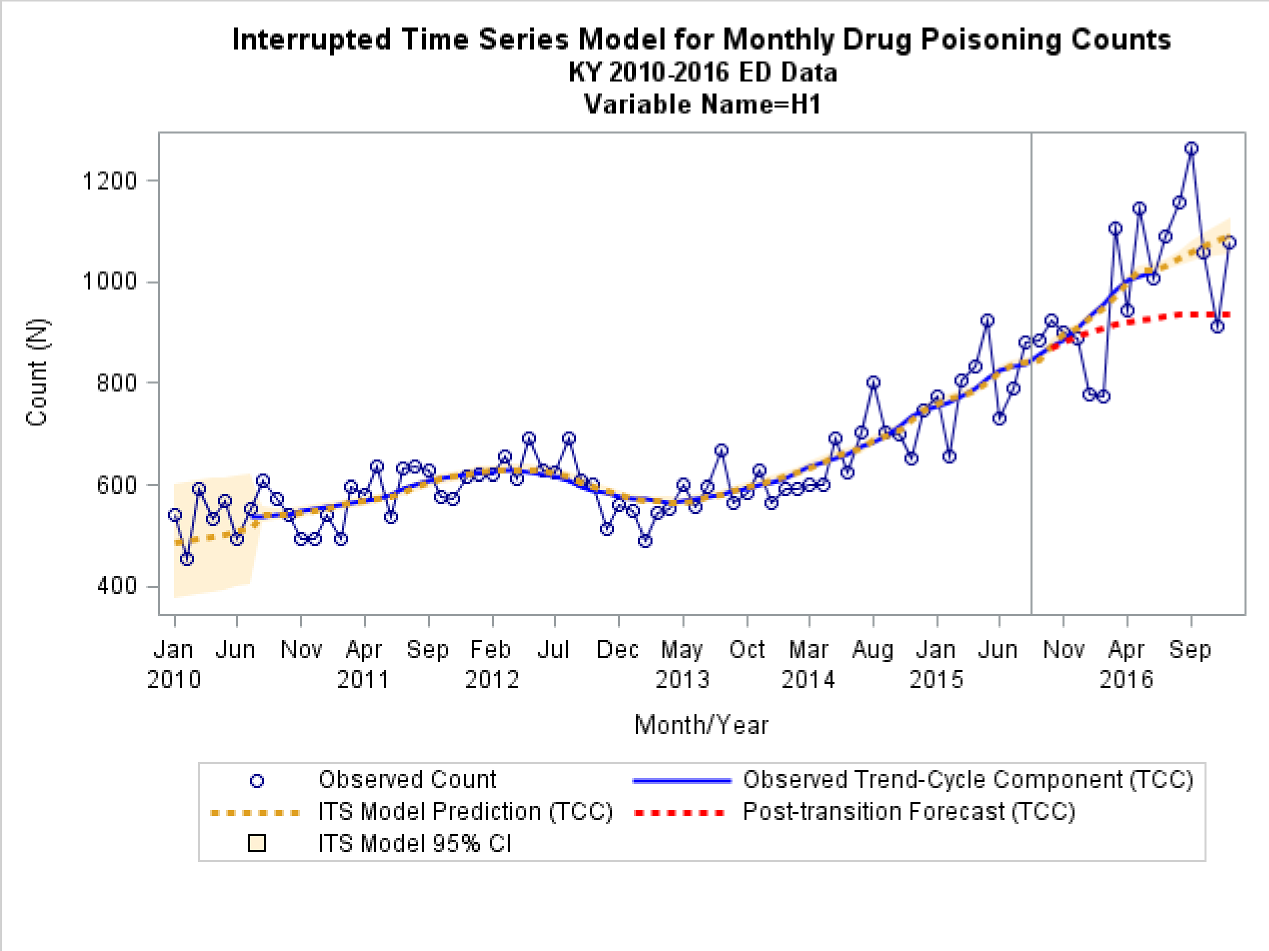
Coefficients for First NLAG Observations									
	1	2	3	4	5	6	7	8	9
8	0.144092541	1.770214E-15	1.360901E-15	-6.85653E-16	-3.78779E-15	2.598747E-15	-1.076944304	0.9833117102	0
9	0.1327583995	1.422663E-15	-1.40879E-15	2.629446E-15	-7.41081E-16	-3.93512E-15	2.958829E-15	-1.067261156	0.9922331943

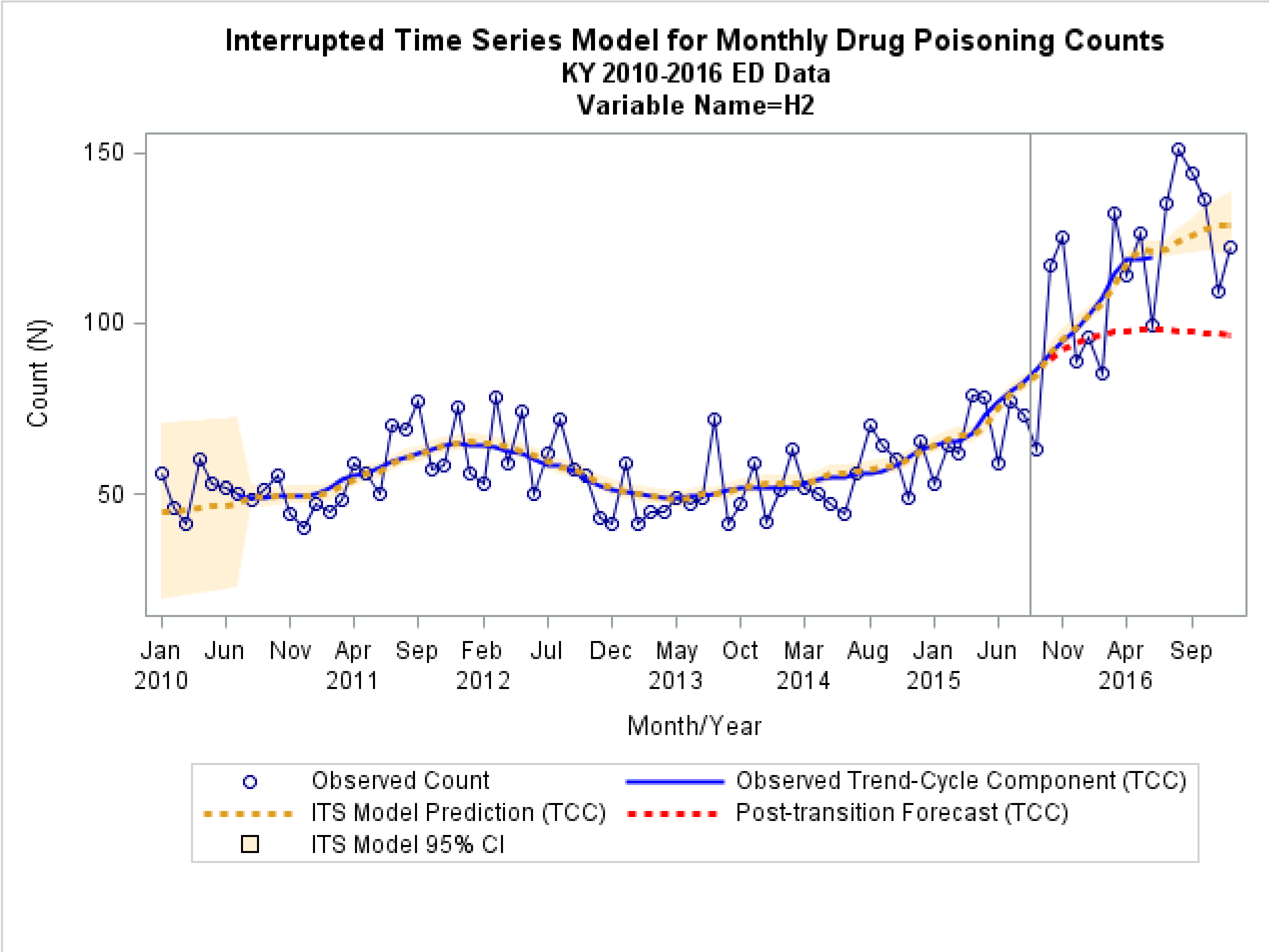
Autoregressive parameters assumed given					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	-33.1633	14.4704	-2.29	0.0251
PRESLOPE	1	3.4372	0.3426	10.03	<.0001
INTERVENTION	1	-6.5357	3.2684	-2.00	0.0497
POSTSLOPE	1	15.5664	1.6445	9.47	<.0001

H3 INTERRUPTED TIME SERIES MODEL
KY 2010-2016 ED Data

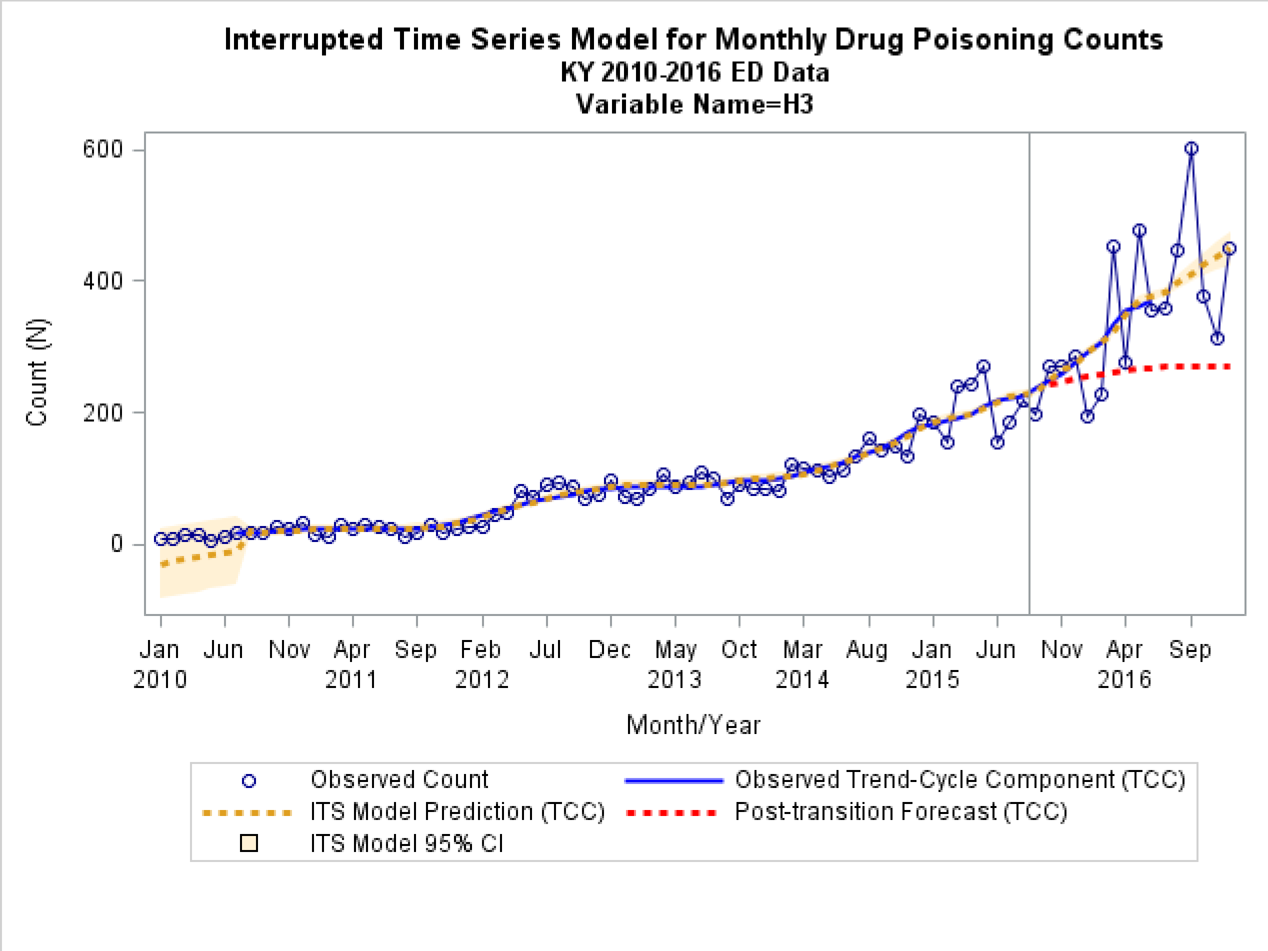
The AUTOREG Procedure




Interrupted Time Series Model for Monthly Drug Poisoning Counts
KY 2010-2016 ED Data
Variable Name=H1
Count (N)
1200
1000
800
600
400
Jan 2010
Jun
Nov
Apr 2011
Sep
Feb 2012
Jul
Dec
May 2013
Oct
Mar 2014
Aug
Jan 2015
Jun
Nov
Apr 2016
Sep
Month/Year
Observed Count
Observed Trend-Cycle Component (TCC)
ITS Model Prediction (TCC)
Post-transition Forecast (TCC)
ITS Model 95% CI



Interrupted Time Series Model for Monthly Drug Poisoning Counts
KY 2010-2016 ED Data
Variable Name=H2
Count (N)
150
100
50
Jan 2010
Jun
Nov
Apr 2011
Sep
Feb 2012
Jul
Dec
May 2013
Oct
Mar 2014
Aug
Jan 2015
Jun
Nov
Apr 2016
Sep
Month/Year
Observed Count
Observed Trend-Cycle Component (TCC)
ITS Model Prediction (TCC)
Post-transition Forecast (TCC)
ITS Model 95% CI


Interrupted Time Series Model for Monthly Drug Poisoning Counts
KY 2010-2016 ED Data
Variable Name=H3
Count (N)
600
400
200
0
Jan 2010
Jun
Nov
Apr 2011
Sep
Feb 2012
Jul
Dec
May 2013
Oct
Mar 2014
Aug
Jan 2015
Jun
Nov
Apr 2016
Sep
Month/Year
Observed Count
Observed Trend-Cycle Component (TCC)
ITS Model Prediction (TCC)
Post-transition Forecast (TCC)
ITS Model 95% CI