The REG Procedure
Model: MODEL1
Dependent Variable: Yt

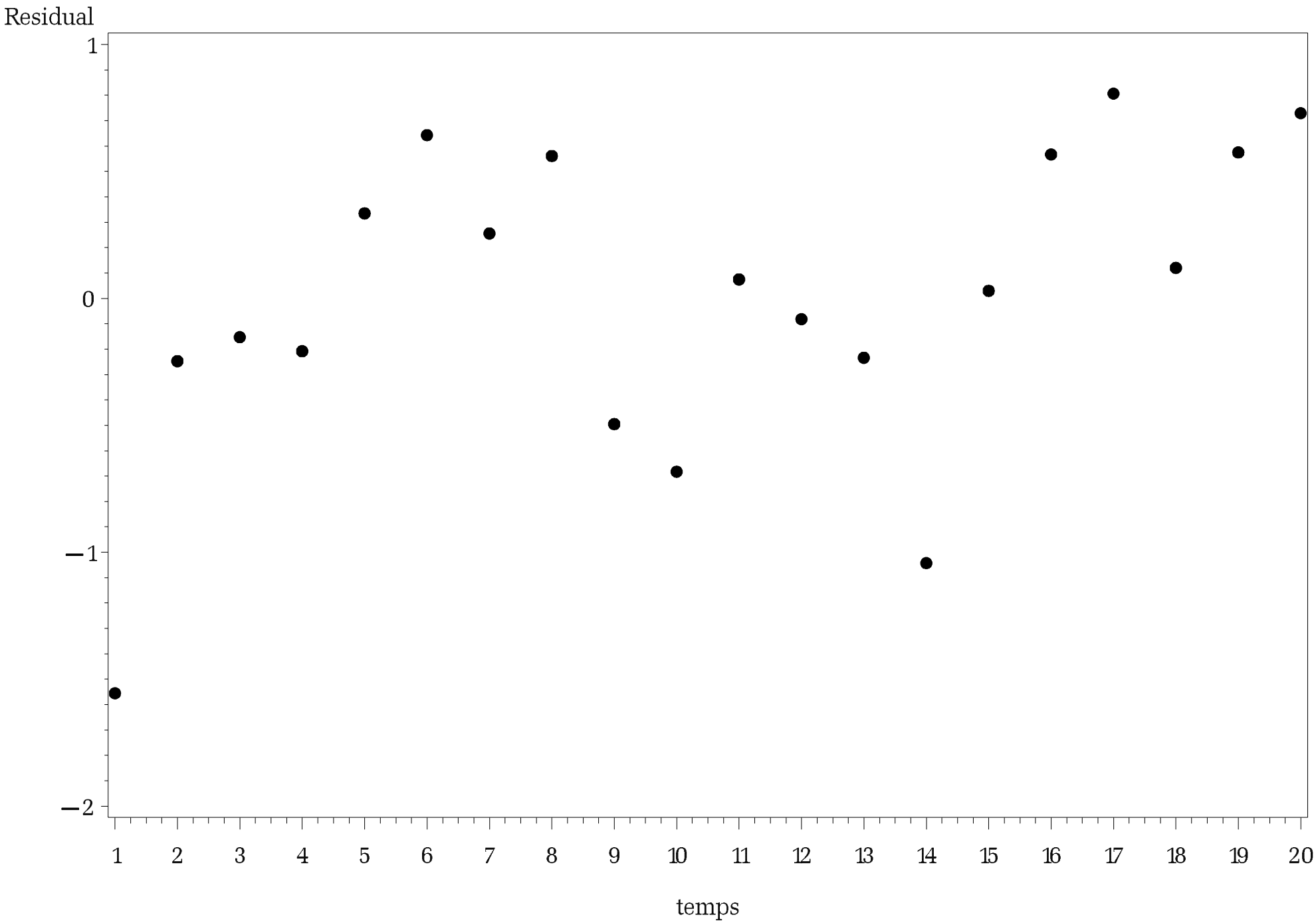
Number of Observations Read	20
Number of Observations Used	20

Analysis of Variance					
Source	**DF**	**Sum of Squares**	**Mean Square**	**F Value**	**Pr > F**
Model	1	14851	14851	37304.2	<.0001
Error	18	7.16613	0.39812		
Corrected Total	19	14859			

Root MSE	0.63097	**R-Square**	0.9995
Dependent Mean	250.27500	**Adj R-Sq**	0.9995
Coeff Var	0.25211		

Parameter Estimates					
Variable	**DF**	**Parameter Estimate**	**Standard Error**	**t Value**	**Pr > |t|**
Intercept	1	93.68648	0.82292	113.85	<.0001
Xt	1	50.88007	0.26343	193.14	<.0001

TP5 no1



The AUTOREG Procedure

Dependent Variable	Yt

Ordinary Least Squares Estimates			
SSE	7.16612827	**DFE**	18
MSE	0.39812	**Root MSE**	0.63097
SBC	42.2216708	**AIC**	40.2302062
Regress R-Square	0.9995	**Total R-Square**	0.9995
Durbin-Watson	0.9737	**Pr < DW**	0.0029
Pr > DW	0.9971		

Note: Pr<DW is the p-value for testing positive autocorrelation, and Pr>DW is the p-value for testing negative autocorrelation.

Variable	**DF**	**Estimate**	**Standard Error**	**t Value**	**Approx Pr > |t|**
Intercept	1	93.6865	0.8229	113.85	<.0001
Xt	1	50.8801	0.2634	193.14	<.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	0.3583	1.000000	||**********
1	0.1101	0.307262	||****** |

Preliminary MSE	0.3245

Estimates of Autoregressive Parameters			
Lag	**Coefficient**	**Standard Error**	**t Value**
1	-0.307262	0.230803	-1.33

Yule-Walker Estimates			
SSE	6.20226641	**DFE**	17
MSE	0.36484	**Root MSE**	0.60402
SBC	42.427557	**AIC**	39.4403602
Regress R-Square	0.9993	**Total R-Square**	0.9996
Durbin-Watson	1.4746	**Pr < DW**	0.0865
Pr > DW	0.9135		

Note: Pr<DW is the p-value for testing positive autocorrelation, and Pr>DW is the p-value for testing negative autocorrelation.

The AUTOREG Procedure

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	93.7936	1.0186	92.08	<.0001
Xt	1	50.8396	0.3252	156.36	<.0001

The AUTOREG Procedure

Dependent Variable	Yt

Ordinary Least Squares Estimates			
SSE	7.16612827	**DFE**	18
MSE	0.39812	**Root MSE**	0.63097
SBC	42.2216708	**AIC**	40.2302062
Regress R-Square	0.9995	**Total R-Square**	0.9995
Durbin-Watson	0.9737	**Pr < DW**	0.0029
Pr > DW	0.9971		

Note: Pr<DW is the p-value for testing positive autocorrelation, and Pr>DW is the p-value for testing negative autocorrelation.

Variable	**DF**	**Estimate**	**Standard Error**	**t Value**	**Approx Pr > |t|**
Intercept	1	93.6865	0.8229	113.85	<.0001
Xt	1	50.8801	0.2634	193.14	<.0001

Covariance of Parameter Estimates		
	Intercept	**Xt**
Intercept	0.6772041	-0.213575
Xt	-0.213575	0.0693966

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	0.3583	1.000000	|********************|
1	0.1101	0.307262	|****** |

Preliminary MSE	0.3245

Estimates of Autoregressive Parameters			
Lag	**Coefficient**	**Standard Error**	**t Value**
1	-0.307262	0.230803	-1.33

The AUTOREG Procedure

Yule-Walker Estimates			
SSE	6.20226641	**DFE**	17
MSE	0.36484	**Root MSE**	0.60402
SBC	42.427557	**AIC**	39.4403602
Regress R-Square	0.9993	**Total R-Square**	0.9996
Durbin-Watson	1.4746	**Pr < DW**	0.0865
Pr > DW	0.9135		

Note: Pr<DW is the p-value for testing positive autocorrelation, and Pr>DW is the p-value for testing negative autocorrelation.

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	93.7936	1.0186	92.08	<.0001
Xt	1	50.8396	0.3252	156.36	<.0001

Covariance of Parameter Estimates		
	Intercept	**Xt**
Intercept	1.0375502	-0.325339
Xt	-0.325339	0.1057238

The REG Procedure
Model: MODEL1
Dependent Variable: Yttrans

Number of Observations Read	20
Number of Observations Used	19
Number of Observations with Missing Values	1

Analysis of Variance					
Source	**DF**	**Sum of Squares**	**Mean Square**	**F Value**	**Pr > F**
Model	1	8035.55507	8035.55507	38571.9	<.0001
Error	17	3.54156	0.20833		
Corrected Total	18	8039.09662			

Root MSE	0.45643	**R-Square**	0.9996
Dependent Mean	175.40382	**Adj R-Sq**	0.9995
Coeff Var	0.26022		

Parameter Estimates					
Variable	**DF**	**Parameter Estimate**	**Standard Error**	**t Value**	**Pr > |t|**
Intercept	1	65.67829	0.56842	115.55	<.0001
Xttrans	1	50.56466	0.25746	196.40	<.0001

The AUTOREG Procedure

Dependent Variable	Yt

Ordinary Least Squares Estimates			
SSE	7.16612827	**DFE**	18
MSE	0.39812	**Root MSE**	0.63097
SBC	42.2216708	**AIC**	40.2302062
Regress R-Square	0.9995	**Total R-Square**	0.9995
Durbin-Watson	0.9737	**Pr < DW**	0.0029
Pr > DW	0.9971		

Note: Pr<DW is the p-value for testing positive autocorrelation, and Pr>DW is the p-value for testing negative autocorrelation.

Variable	**DF**	**Estimate**	**Standard Error**	**t Value**	**Approx Pr > |t|**
Intercept	1	93.6865	0.8229	113.85	<.0001
Xt	1	50.8801	0.2634	193.14	<.0001

Covariance of Parameter Estimates		
	Intercept	**Xt**
Intercept	0.6772041	-0.213575
Xt	-0.213575	0.0693966

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	0.3583	1.000000	|********************|
1	0.1101	0.307262	|****** |

Preliminary MSE	0.3245

Estimates of Autoregressive Parameters			
Lag	**Coefficient**	**Standard Error**	**t Value**
1	-0.307262	0.230803	-1.33

Algorithm converged.

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	5.93840579	**DFE**	17
MSE	0.34932	**Root MSE**	0.59103
SBC	41.8069545	**AIC**	38.8197577
Regress R-Square	0.9990	**Total R-Square**	0.9996
Durbin-Watson	1.8461	**Pr < DW**	0.3481
Pr > DW	0.6519		

Note: Pr<DW is the p-value for testing positive autocorrelation, and Pr>DW is the p-value for testing negative autocorrelation.

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	94.1745	1.4202	66.31	<.0001
Xt	1	50.7073	0.4453	113.88	<.0001
AR1	1	-0.5422	0.2491	-2.18	0.0439

Covariance of Parameter Estimates			
	Intercept	**Xt**	**AR1**
Intercept	2.0169878	-0.620328	-0.183005
Xt	-0.620328	0.1982626	0.055744
AR1	-0.183005	0.055744	0.0620574

Autoregressive parameters assumed given.					
Variable	**DF**	**Estimate**	**Standard Error**	**t Value**	**Approx Pr > |t|**
Intercept	1	94.1745	1.2154	77.48	<.0001
Xt	1	50.7073	0.3850	131.72	<.0001

Covariance of Parameter Estimates		
	Intercept	**Xt**
Intercept	1.4773152	-0.455942
Xt	-0.455942	0.1481898

The REG Procedure
Model: MODEL1
Dependent Variable: Yttrans

Number of Observations Read	20
Number of Observations Used	19
Number of Observations with Missing Values	1

Analysis of Variance					
Source	**DF**	**Sum of Squares**	**Mean Square**	**F Value**	**Pr > F**
Model	1	5325.49931	5325.49931	25660.3	<.0001
Error	17	3.52815	0.20754		
Corrected Total	18	5329.02746			

Root MSE	0.45556	**R-Square**	0.9993
Dependent Mean	116.95372	**Adj R-Sq**	0.9993
Coeff Var	0.38952		

Parameter Estimates					
Variable	**DF**	**Parameter Estimate**	**Standard Error**	**t Value**	**Pr > |t|**
Intercept	1	43.75739	0.46874	93.35	<.0001
Xttrans	1	50.35377	0.31434	160.19	<.0001

The REG Procedure
Model: MODEL1
Dependent Variable: diffYt

Number of Observations Read	20
Number of Observations Used	19
Number of Observations with Missing Values	1

Note: No intercept in model. R-Square is redefined.

Analysis of Variance					
Source	**DF**	**Sum of Squares**	**Mean Square**	**F Value**	**Pr > F**
Model	1	4666.08246	4666.08246	13934.3	<.0001
Error	18	6.02754	0.33486		
Uncorrected Total	19	4672.11000			

Root MSE	0.57867	**R-Square**	0.9987
Dependent Mean	3.05789	**Adj R-Sq**	0.9986
Coeff Var	18.92393		

Parameter Estimates					
Variable	**DF**	**Parameter Estimate**	**Standard Error**	**t Value**	**Pr > |t|**
diffXt	1	50.16414	0.42496	118.04	<.0001

The ARIMA Procedure

Warning: The value of NLAG is larger than 25% of the series length. The asymptotic approximations used for correlation based statistics and confidence intervals may be poor.

Name of Variable = residus	
Mean of Working Series	0.161576
Standard Deviation	0.539567
Number of Observations	19

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	**Std Error**
0	0.291132	1.00000	|**********|	0
1	-0.076092	-.26136	|*****|	0.229416
2	-0.015233	-.05232	|*|	0.244586
3	-0.070760	-.24305	|*****|	0.245174
4	0.125576	0.43134	|*********|	0.257544
5	-0.0001875	-.00064	| |	0.293110
6	-0.015202	-.05222	|*|	0.293110
7	-0.076188	-.26169	|*****|	0.293599
8	-0.018917	-.06498	|*|	0.305629
9	0.063472	0.21802	|****|	0.306355
10	-0.042138	-.14474	|***|	0.314415
11	-0.0055361	-.01902	| |	0.317903
12	-0.061989	-.21292	|****|	0.317962
13	0.039641	0.13616	|***|	0.325380
14	0.00087878	0.00302	| |	0.328366
15	0.014120	0.04850	|*|	0.328367
16	-0.037418	-.12853	|***|	0.328744
17	0.030914	0.10618	|**|	0.331378
18	-0.0005071	-.00174	| |	0.333164

"." marks two standard errors

Inverse Autocorrelations		
Lag	**Correlation**	-1 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 1
1	0.34643	|*******|
2	0.02912	|*|
3	-0.17358	|***|
4	-0.42304	|********|
5	-0.04051	|*|
6	0.12203	|**|

The ARIMA Procedure

Inverse Autocorrelations		
Lag	**Correlation**	-1 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 1
7	0.25103	| . |***** . |
8	0.26082	| . |***** . |
9	0.01801	| . | . |

Partial Autocorrelations		
Lag	**Correlation**	-1 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 1
1	-0.26136	| . *****| . |
2	-0.12948	| . ***| . |
3	-0.31912	| . ******| . |
4	0.30924	| . |****** . |
5	0.18003	| . |**** . |
6	0.02432	| . | . |
7	-0.13359	| . ***| . |
8	-0.40211	| .********| . |
9	-0.02919	| . *| . |
10	-0.22546	| . *****| . |
11	0.06641	| . |* . |
12	0.02584	| . |* . |
13	-0.09668	| . **| . |
14	0.04909	| . |* . |
15	-0.14480	| . ***| . |
16	-0.03943	| . *| . |
17	0.10336	| . |** . |
18	-0.10384	| . **| . |

Autocorrelation Check for White Noise									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	8.08	6	0.2320	-0.261	-0.052	-0.243	0.431	-0.001	-0.052
12	15.94	12	0.1939	-0.262	-0.065	0.218	-0.145	-0.019	-0.213
18	21.86	18	0.2384	0.136	0.003	0.048	-0.129	0.106	-0.002

The MEANS Procedure

Variable	N	Mean	Std Dev	Minimum	Maximum
Xt	20	3.0776000	0.5494905	2.1710000	3.8010000
Yt	20	250.2750000	27.9648628	203.9000000	287.0000000