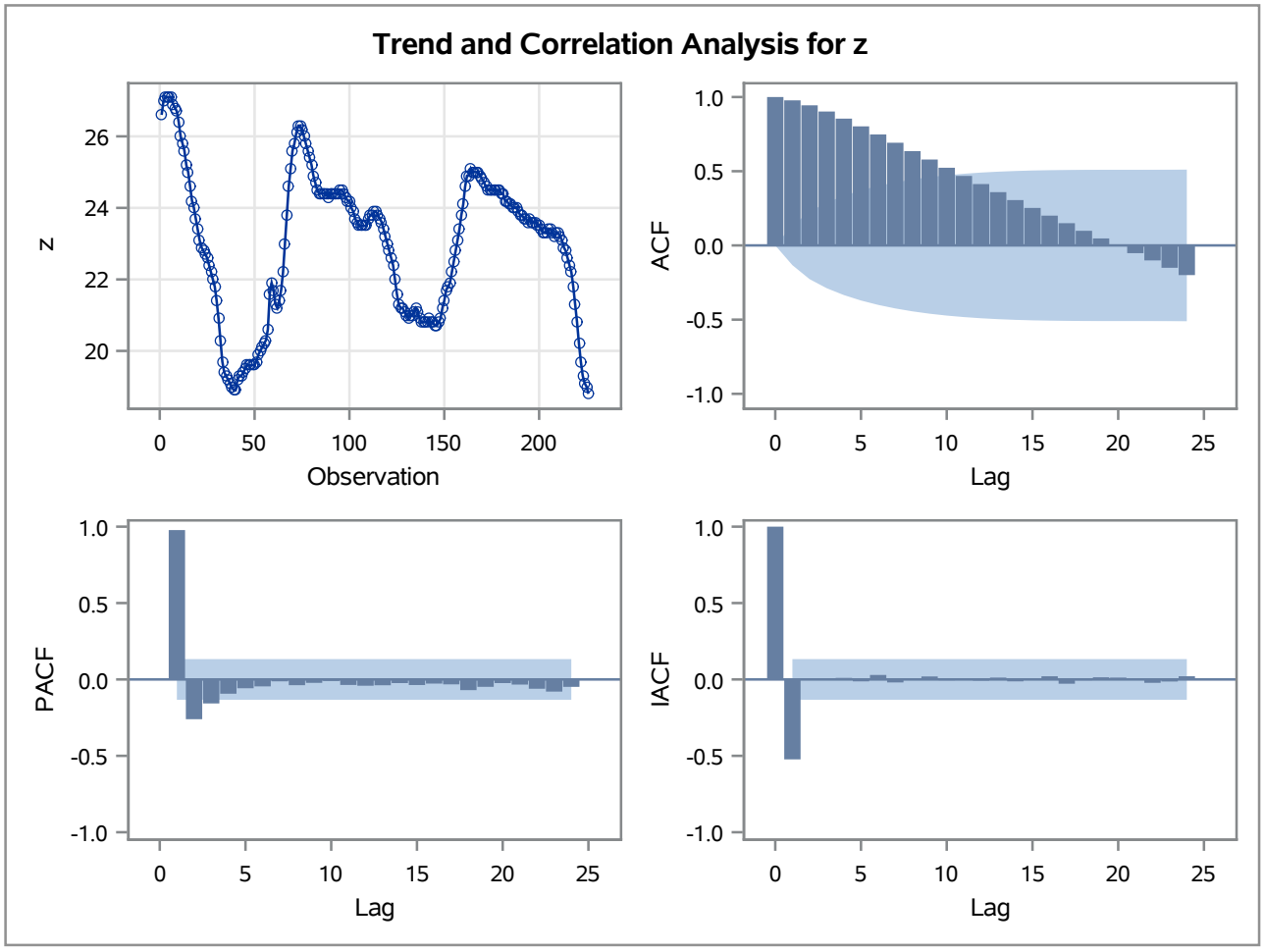
First five observations of bjc

Obs	time	z
1	1	26.6
2	2	27.0
3	3	27.1
4	4	27.1
5	5	27.1

The ARIMA Procedure

Name of Variable = z	
Mean of Working Series	22.97389
Standard Deviation	2.054927
Number of Observations	226

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	1062.37	6	<.0001	0.978	0.944	0.902	0.854	0.802	0.748
12	1509.02	12	<.0001	0.692	0.635	0.579	0.523	0.468	0.413
18	1596.25	18	<.0001	0.359	0.305	0.253	0.201	0.150	0.098
24	1616.02	24	<.0001	0.047	-0.003	-0.052	-0.101	-0.151	-0.200



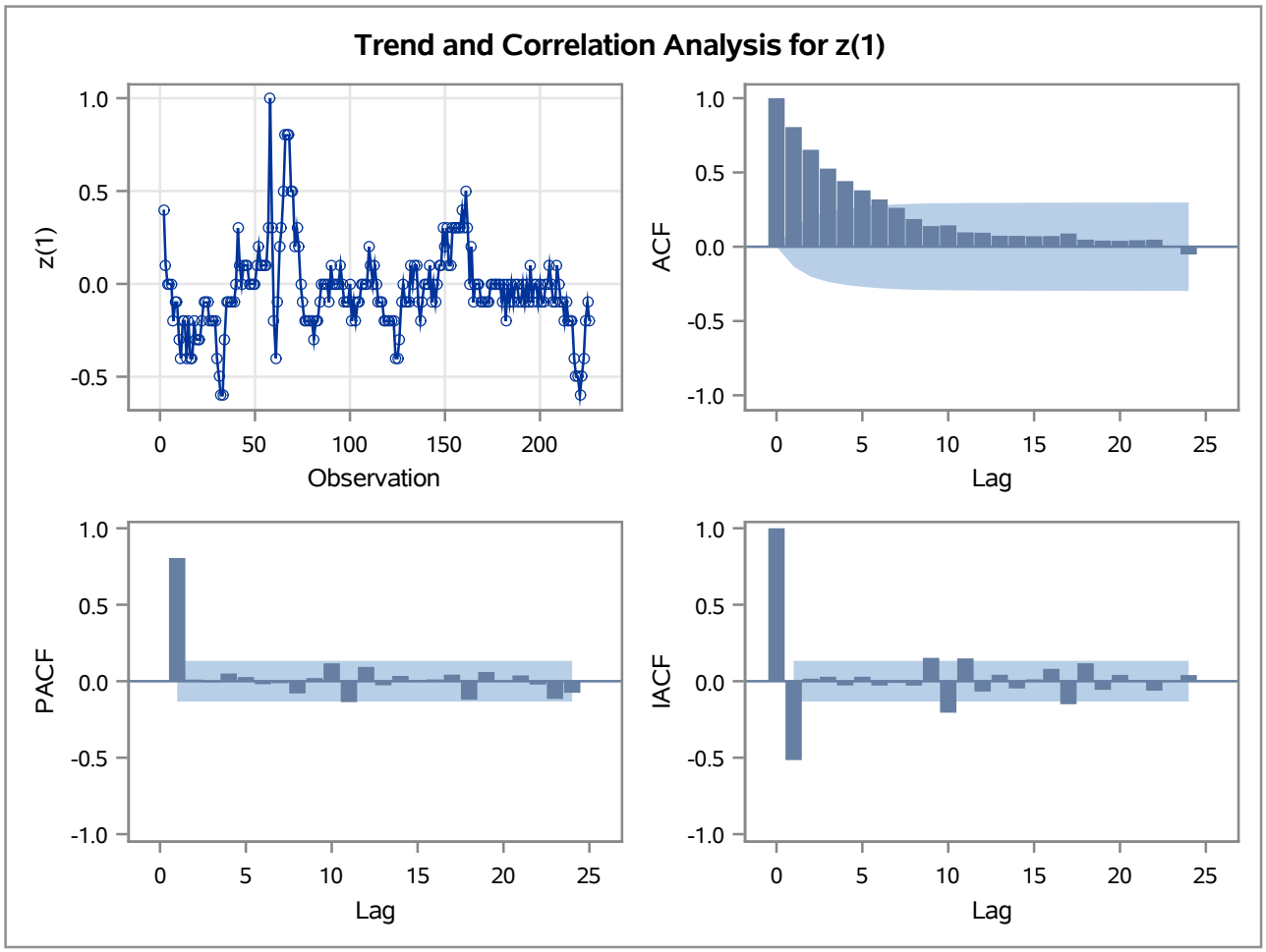
Name of Variable = z	
Period(s) of Differencing	1
Mean of Working Series	-0.03467
Standard Deviation	0.230647

Identification Stage

The ARIMA Procedure

Name of Variable = z	
Number of Observations	225
Observation(s) eliminated by differencing	1

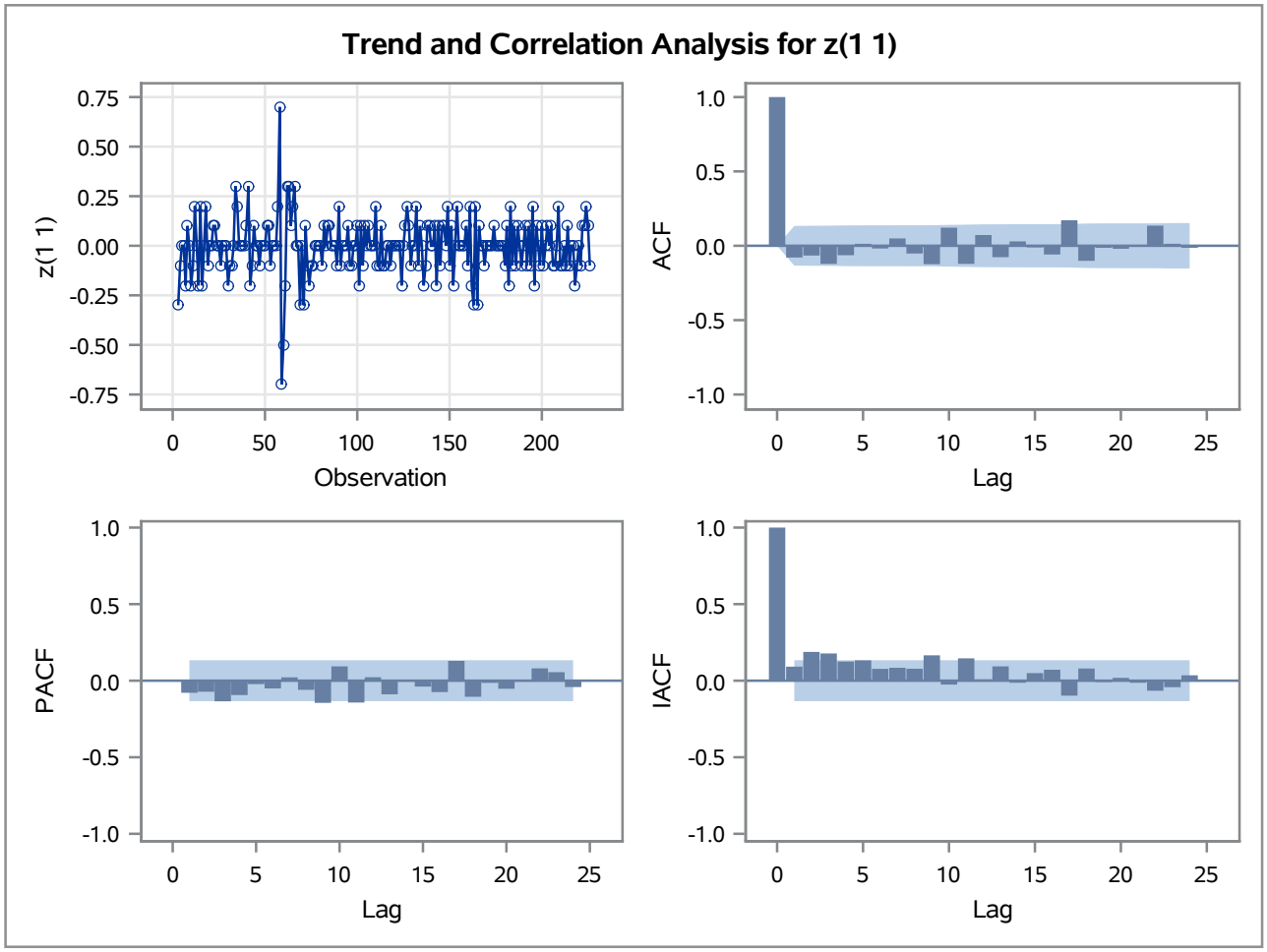
Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	411.34	6	<.0001	0.805	0.653	0.526	0.442	0.380	0.318
12	449.40	12	<.0001	0.262	0.186	0.139	0.144	0.097	0.094
18	456.99	18	<.0001	0.074	0.073	0.070	0.072	0.089	0.048
24	459.54	24	<.0001	0.041	0.040	0.044	0.048	0.000	-0.052



Name of Variable = z	
Period(s) of Differencing	1,1
Mean of Working Series	-0.00268
Standard Deviation	0.140763
Number of Observations	224
Observation(s) eliminated by differencing	2

The ARIMA Procedure

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	6.84	6	0.3358	-0.079	-0.065	-0.122	-0.063	0.013	-0.018
12	19.92	12	0.0687	0.049	-0.052	-0.124	0.122	-0.122	0.072
18	32.11	18	0.0214	-0.077	0.029	-0.011	-0.058	0.171	-0.101
24	36.94	24	0.0444	-0.013	-0.020	-0.007	0.135	0.014	-0.013



The ARIMA Procedure

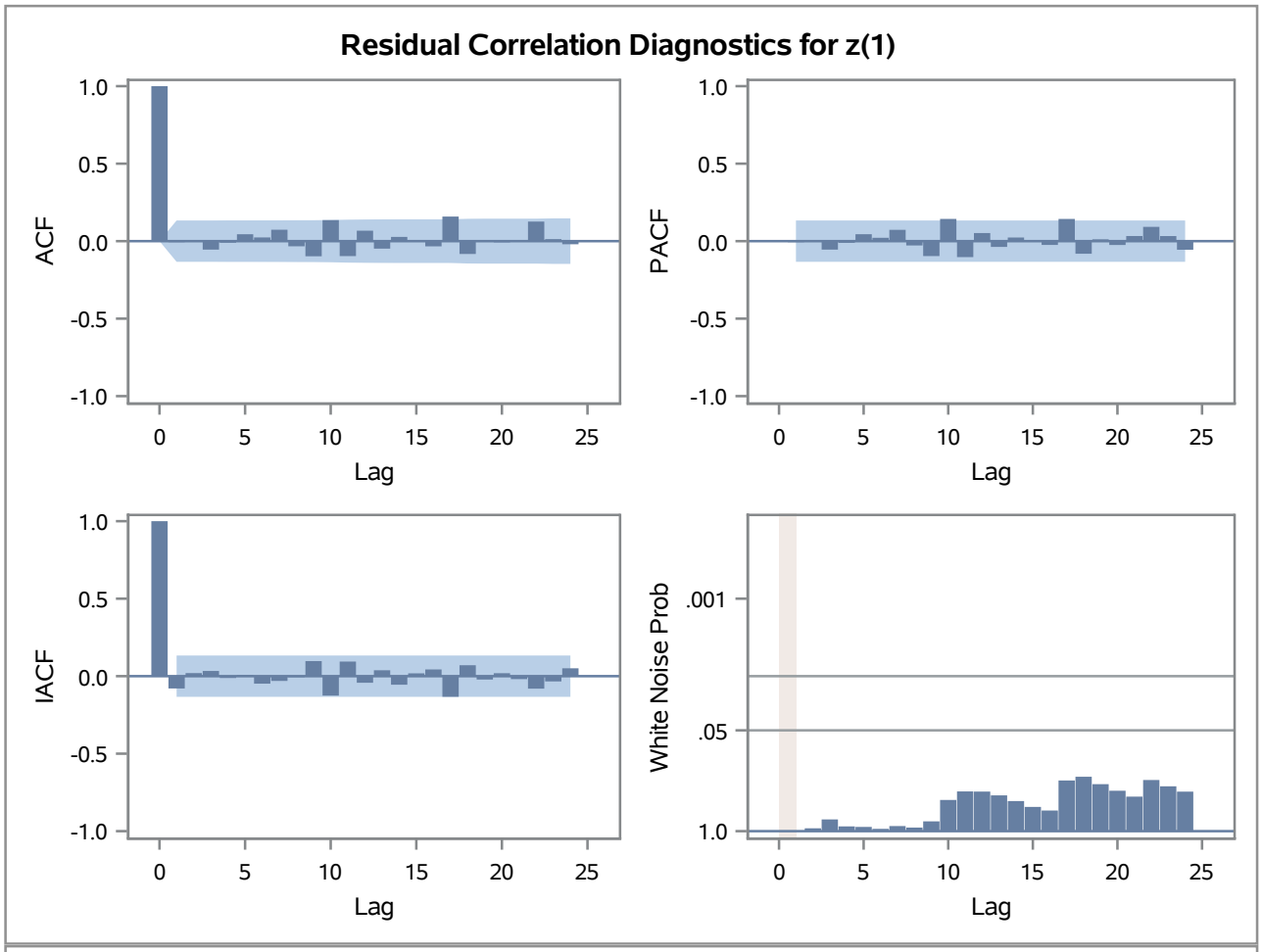
Maximum Likelihood Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	-0.02954	0.04800	-0.62	0.5382	0
AR1,1	0.81659	0.03836	21.29	<.0001	1

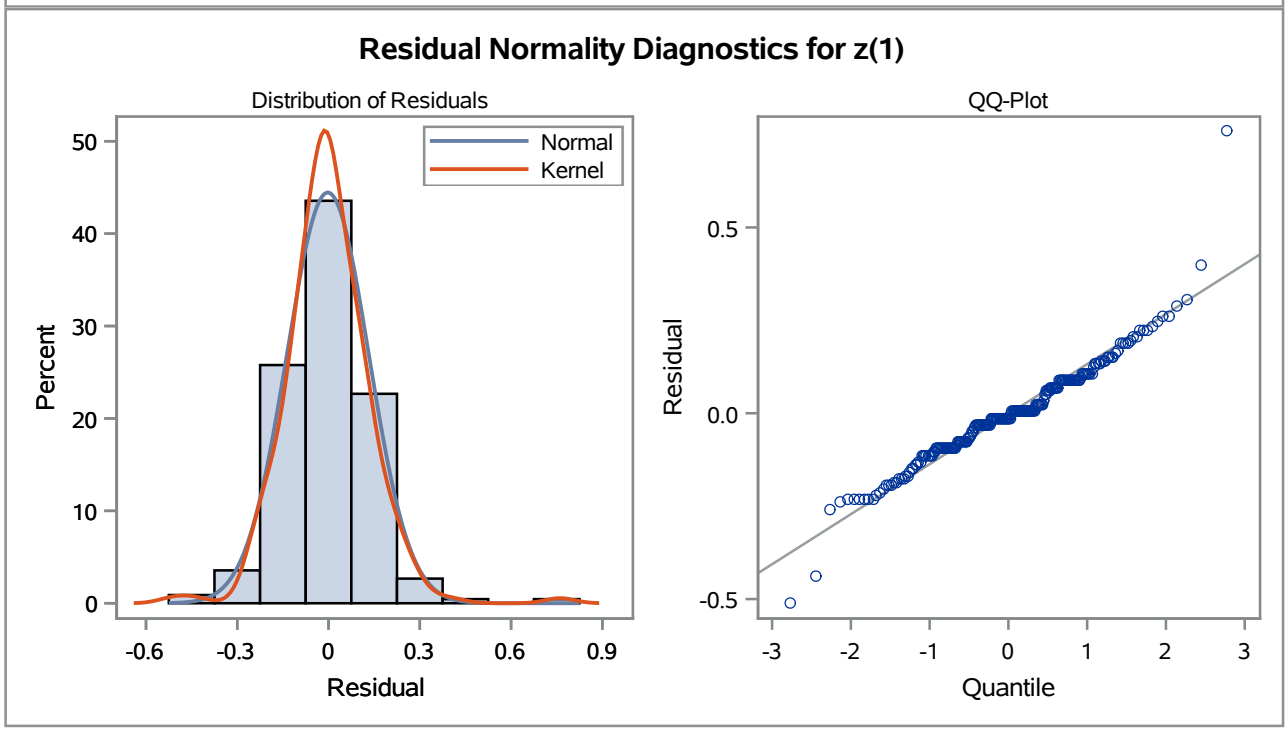
Constant Estimate	-0.00542
Variance Estimate	0.018208
Std Error Estimate	0.134939
AIC	-259.708
SBC	-252.876
Number of Residuals	225

Correlations of Parameter Estimates		
Parameter	MU	AR1,1
MU	1.000	-0.017
AR1,1	-0.017	1.000

Autocorrelation Check of Residuals										
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations						
6	1.31	5	0.9340	-0.006	0.002	-0.054	-0.010	0.045	0.024	
12	12.75	11	0.3097	0.074	-0.033	-0.098	0.135	-0.097	0.067	
18	21.62	17	0.1998	-0.049	0.027	0.000	-0.034	0.158	-0.083	
24	25.76	23	0.3125	-0.006	-0.008	0.003	0.126	0.012	-0.021	
30	34.86	29	0.2092	-0.129	-0.016	0.050	0.017	0.103	-0.071	
36	47.89	35	0.0719	-0.117	0.057	-0.062	-0.022	-0.164	-0.026	
42	49.75	41	0.1642	-0.055	-0.056	0.017	-0.016	-0.010	0.002	

The ARIMA Procedure





Model for variable z	
Estimated Mean	-0.02954
Period(s) of Differencing	1

The ARIMA Procedure

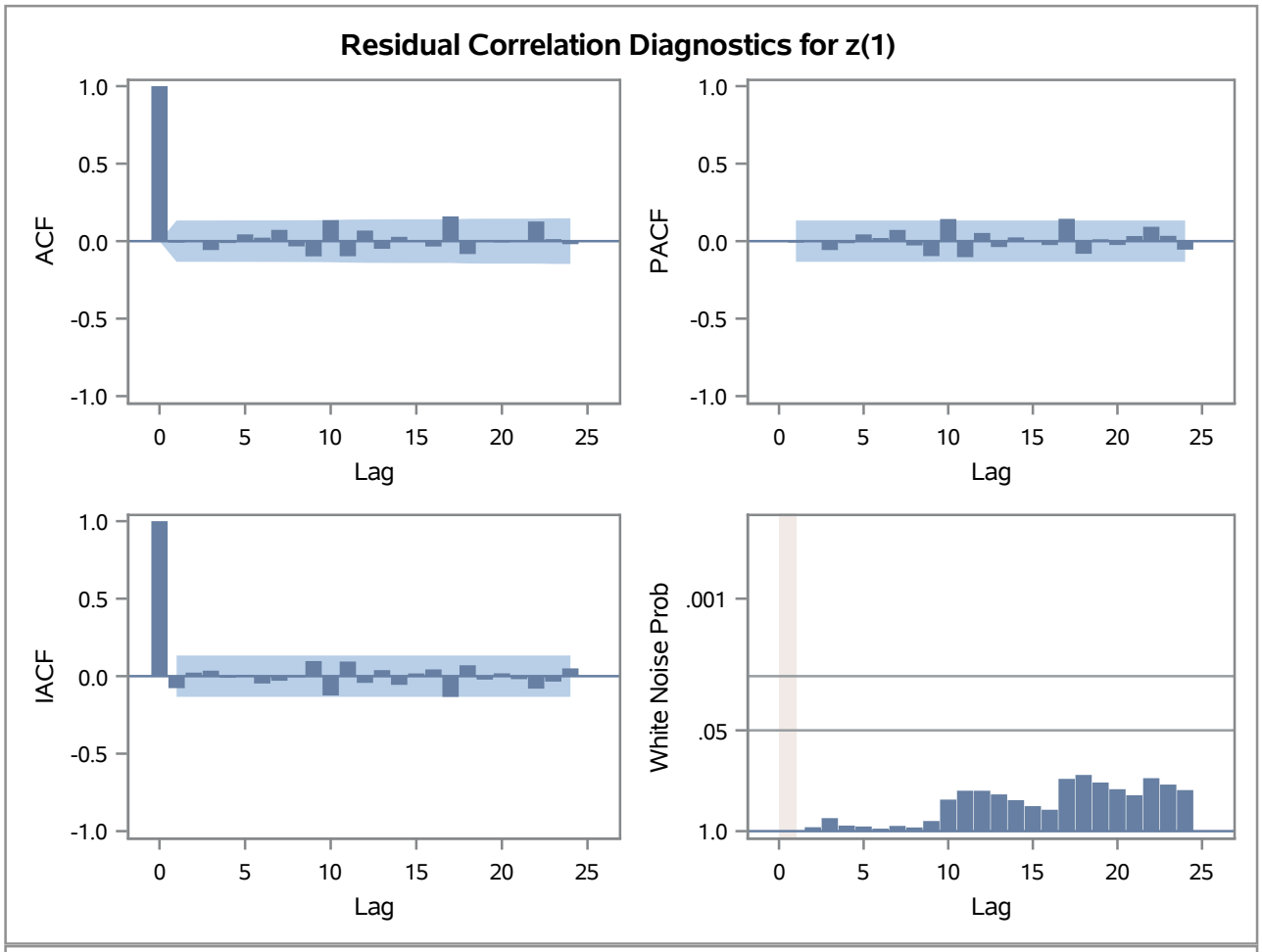
Autoregressive Factors	
Factor 1:	1 - 0.81659 B**(1)

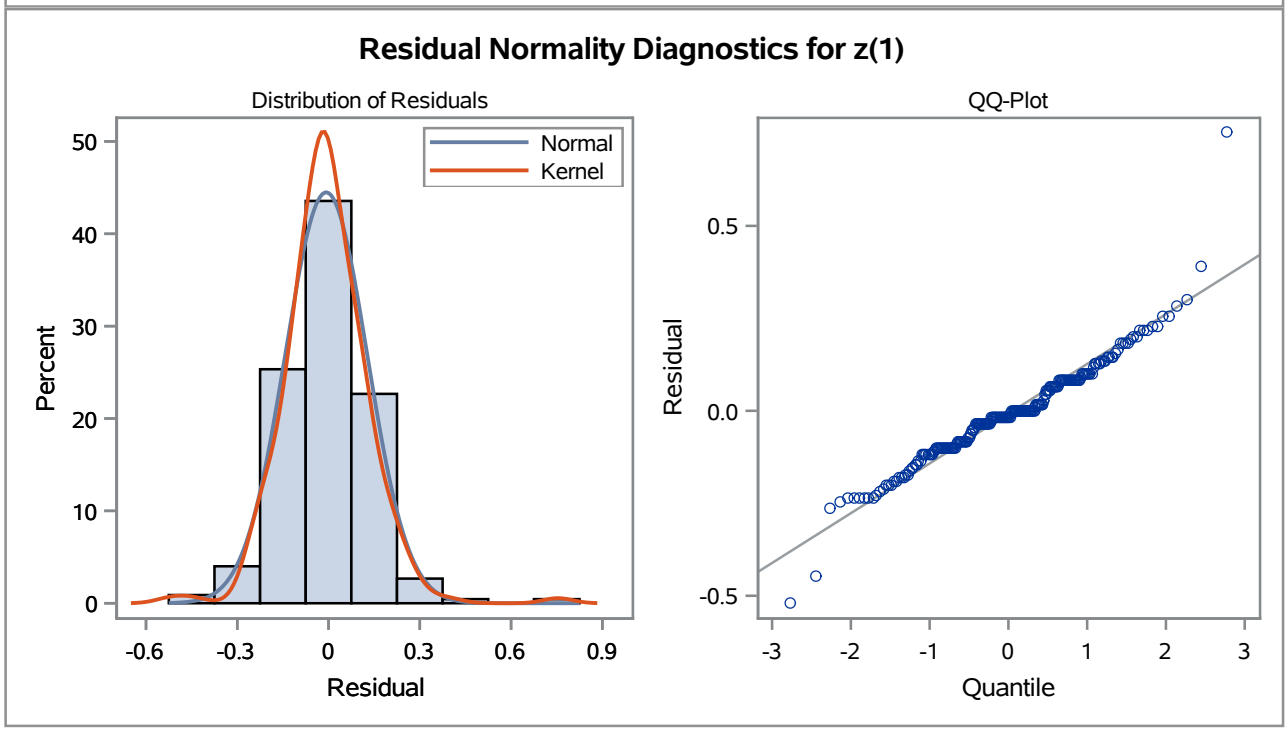
Maximum Likelihood Estimation					
Parameter	**Estimate**	**Standard Error**	**t Value**	**Approx Pr > |t|**	**Lag**
AR1,1	0.82017	0.03797	21.60	<.0001	1

Variance Estimate	0.018156
Std Error Estimate	0.134743
AIC	-261.336
SBC	-257.92
Number of Residuals	225

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	1.34	5	0.9303	-0.006	0.003	-0.054	-0.009	0.047	0.025
12	12.82	11	0.3052	0.075	-0.031	-0.097	0.136	-0.096	0.069
18	21.78	17	0.1933	-0.049	0.028	0.001	-0.034	0.159	-0.083
24	25.96	23	0.3027	-0.005	-0.008	0.003	0.126	0.013	-0.019
30	35.08	29	0.2018	-0.128	-0.015	0.051	0.019	0.105	-0.070
36	48.01	35	0.0704	-0.117	0.057	-0.062	-0.020	-0.163	-0.024
42	49.82	41	0.1626	-0.054	-0.056	0.017	-0.015	-0.009	0.002

The ARIMA Procedure





Model for variable z	
Period(s) of Differencing	1

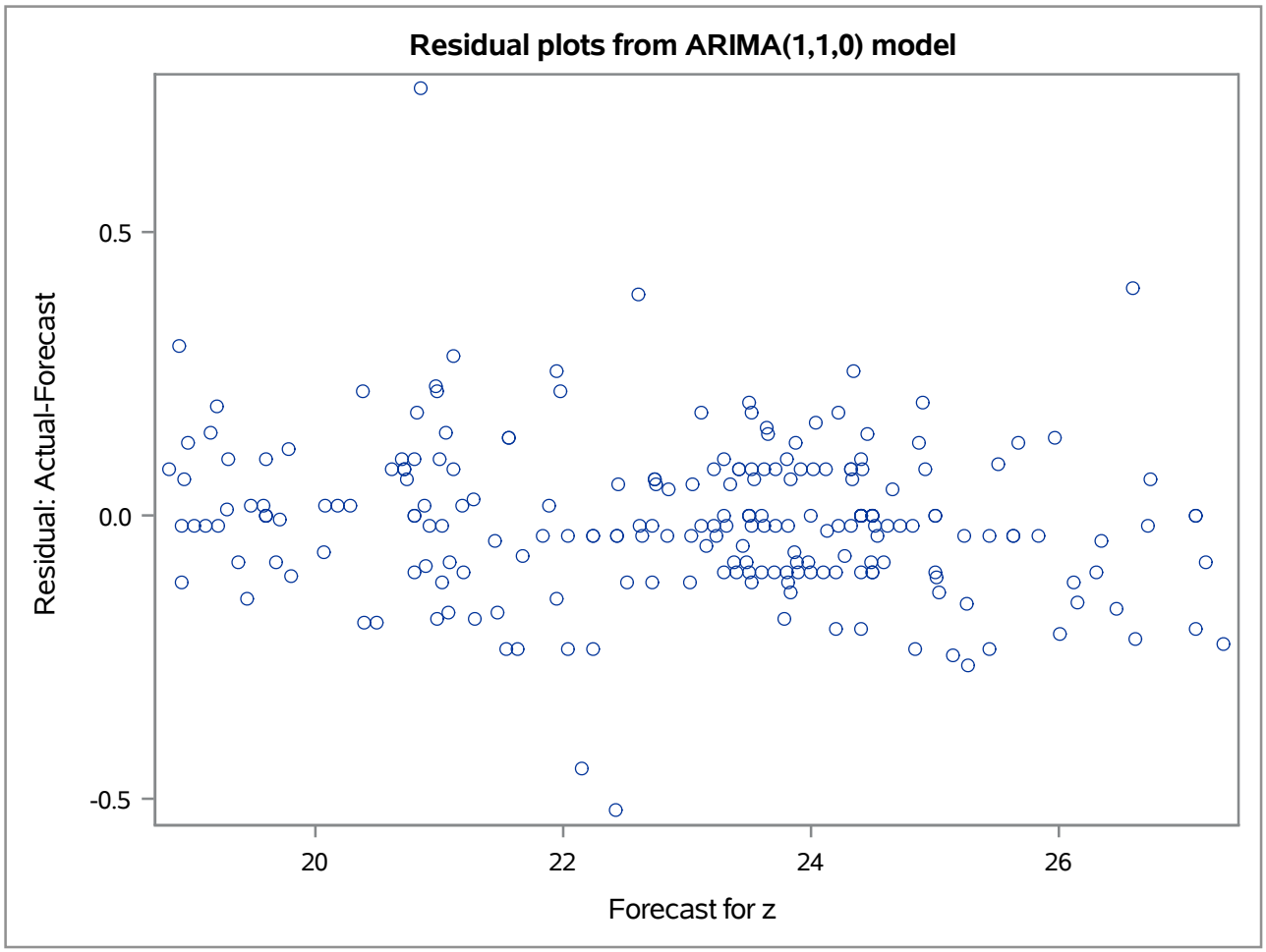
No mean term in this model.

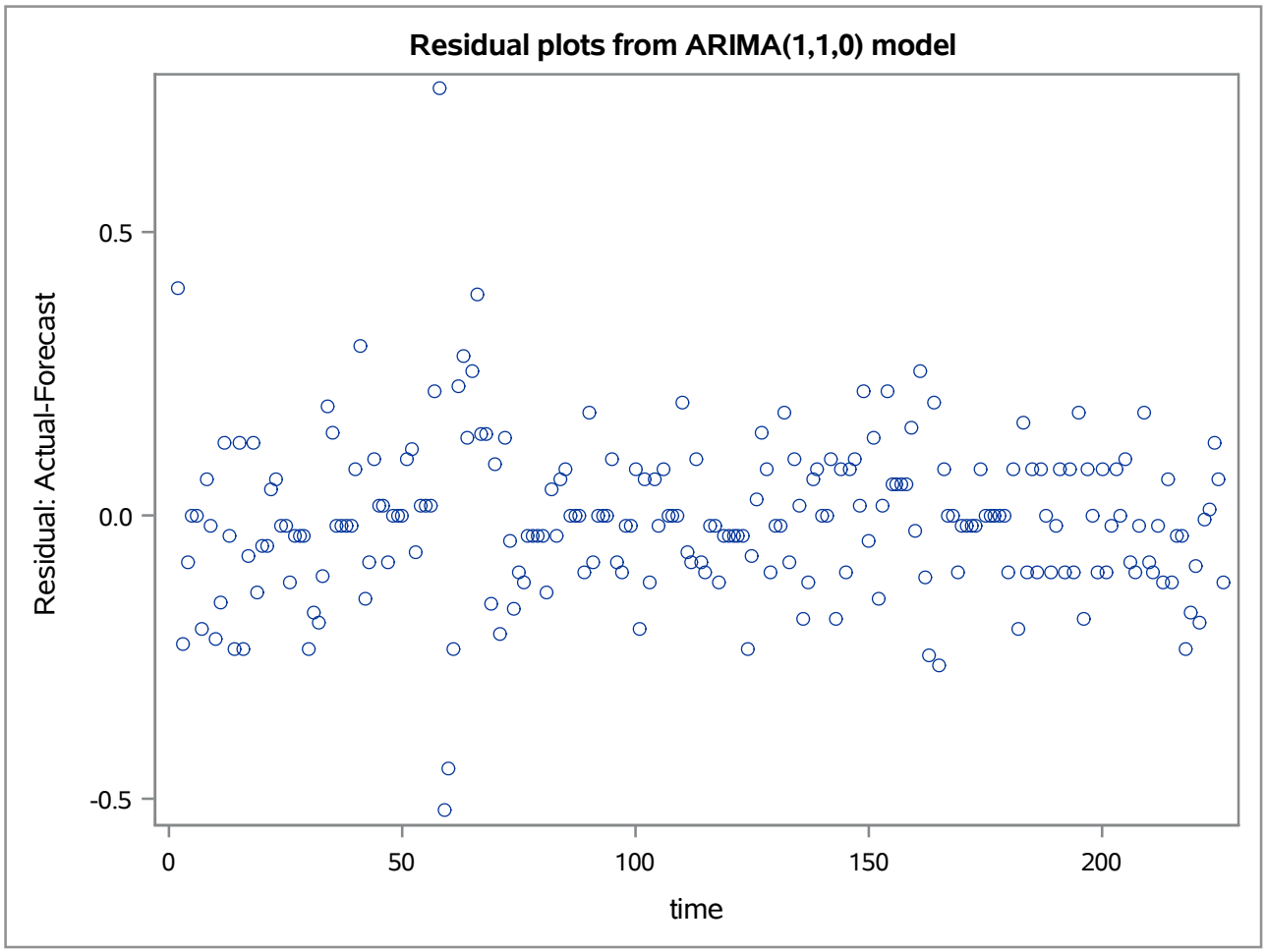
The ARIMA Procedure

Autoregressive Factors	
Factor 1:	1 - 0.82017 B**(1)

First five observations of resids110

Obs	time	z	FORECAST	STD	L95	U95	RESIDUAL
1	1	26.6	.	.	.	.	.
2	2	27.0	26.6000	0.23551	26.1384	27.0616	0.40000
3	3	27.1	27.3281	0.13474	27.0640	27.5922	-0.22807
4	4	27.1	27.1820	0.13474	26.9179	27.4461	-0.08202
5	5	27.1	27.1000	0.13474	26.8359	27.3641	0.00000


Residual plots from ARIMA(1,1,0) model
Residual: Actual-Forecast
0.5
0.0
-0.5
20
22
24
26
Forecast for z


Residual plots from ARIMA(1,1,0) model
Residual: Actual-Forecast
0.5
0.0
-0.5
0
50
100
150
200
time

The ARIMA Procedure

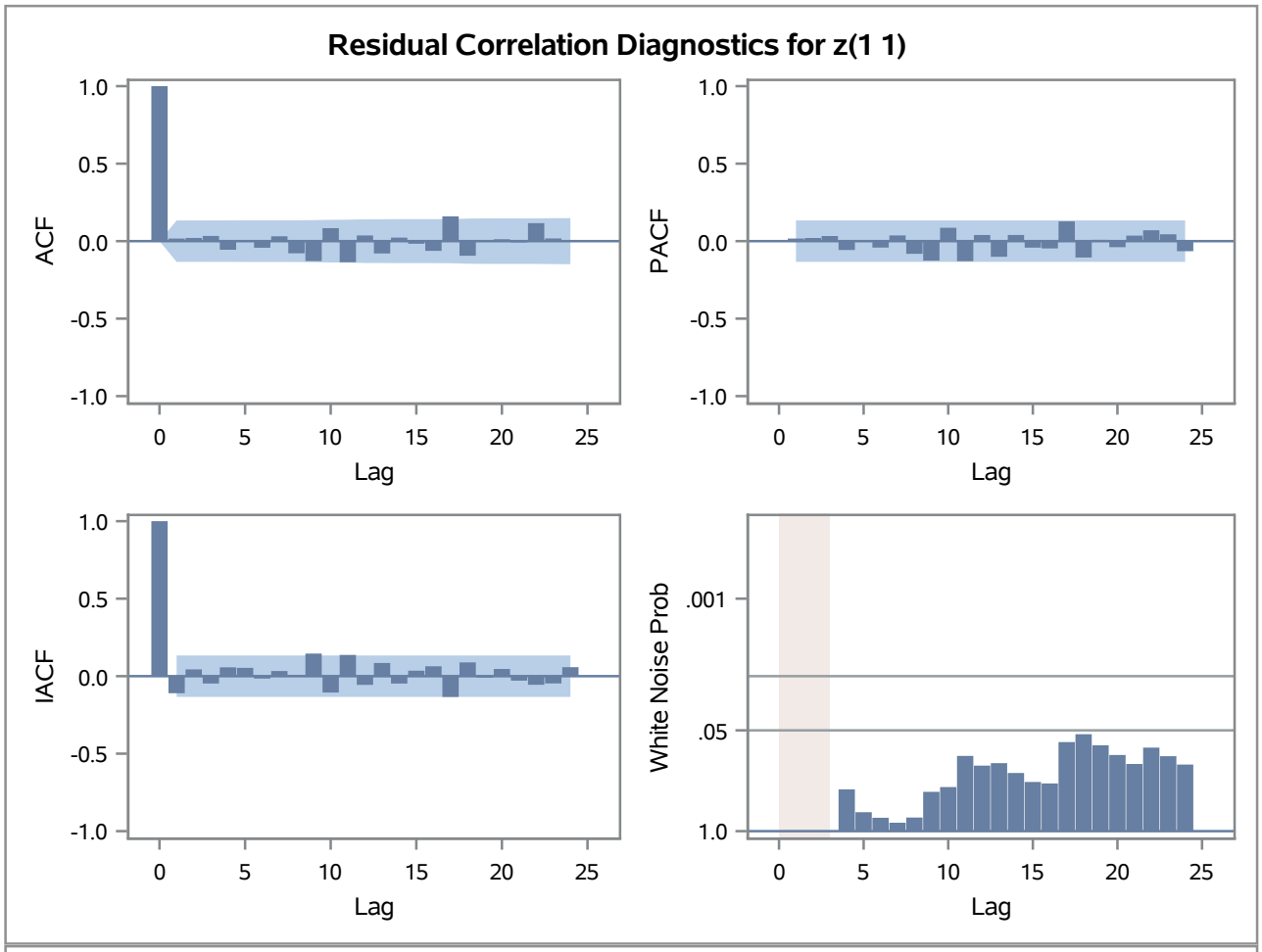
Maximum Likelihood Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	-0.0021354	0.0053721	-0.40	0.6910	0
MA1,1	0.13554	0.06667	2.03	0.0420	1
MA1,2	0.11358	0.06684	1.70	0.0893	2
MA1,3	0.17617	0.06682	2.64	0.0084	3

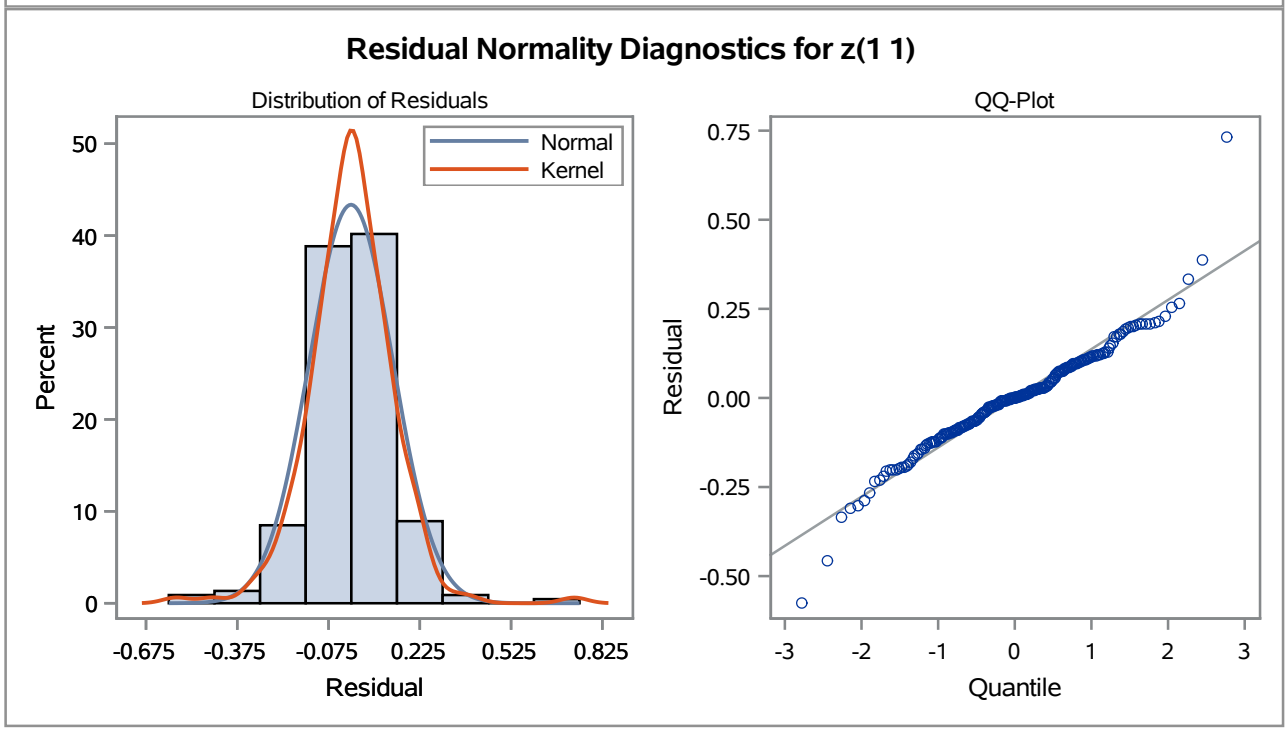
Constant Estimate	-0.00214
Variance Estimate	0.01931
Std Error Estimate	0.13896
AIC	-244.341
SBC	-230.694
Number of Residuals	224

Correlations of Parameter Estimates				
Parameter	MU	MA1,1	MA1,2	MA1,3
MU	1.000	0.002	-0.005	-0.013
MA1,1	0.002	1.000	-0.153	-0.141
MA1,2	-0.005	-0.153	1.000	-0.153
MA1,3	-0.013	-0.141	-0.153	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	1.54	3	0.6723	0.017	0.021	0.034	-0.055	-0.002	-0.042
12	13.48	9	0.1419	0.031	-0.079	-0.129	0.084	-0.136	0.036
18	24.58	15	0.0558	-0.080	0.022	-0.017	-0.063	0.160	-0.094
24	28.08	21	0.1380	-0.000	0.012	-0.008	0.116	0.017	-0.004
30	36.95	27	0.0960	-0.106	0.012	0.055	0.015	0.129	-0.058
36	52.13	33	0.0183	-0.111	0.032	-0.094	-0.049	-0.175	-0.044
42	55.24	39	0.0441	-0.066	-0.075	0.011	0.005	0.021	0.029

The ARIMA Procedure





Model for variable z	
Estimated Mean	-0.00214
Period(s) of Differencing	1,1

The ARIMA Procedure

Moving Average Factors	
Factor 1:	1 - 0.13554 B**(1) - 0.11358 B**(2) - 0.17617 B**(3)

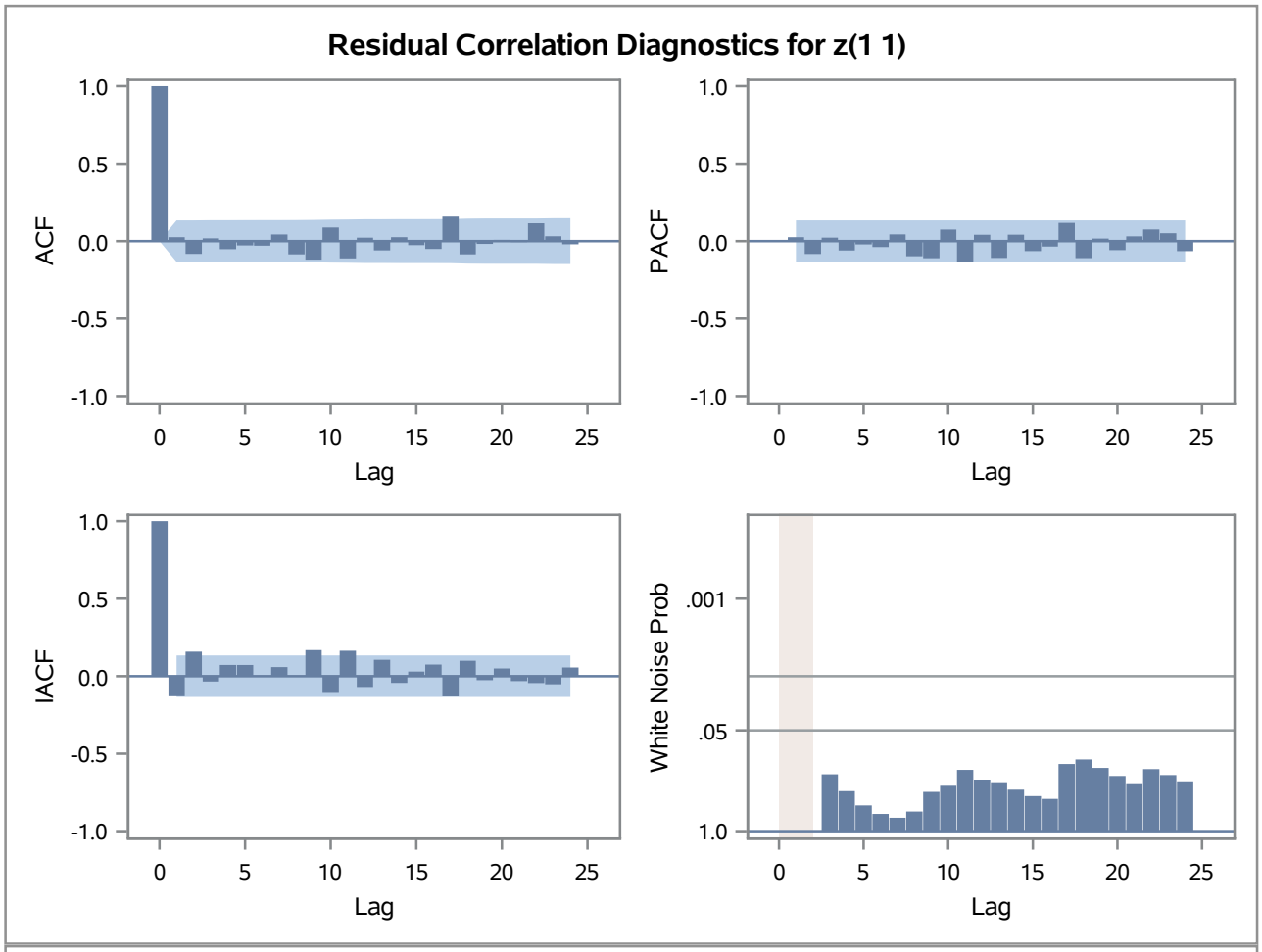
Maximum Likelihood Estimation					
Parameter	**Estimate**	**Standard Error**	**t Value**	**Approx Pr > |t|**	**Lag**
MA1,1	0.14401	0.06580	2.19	0.0286	1
MA1,2	0.17111	0.06608	2.59	0.0096	3

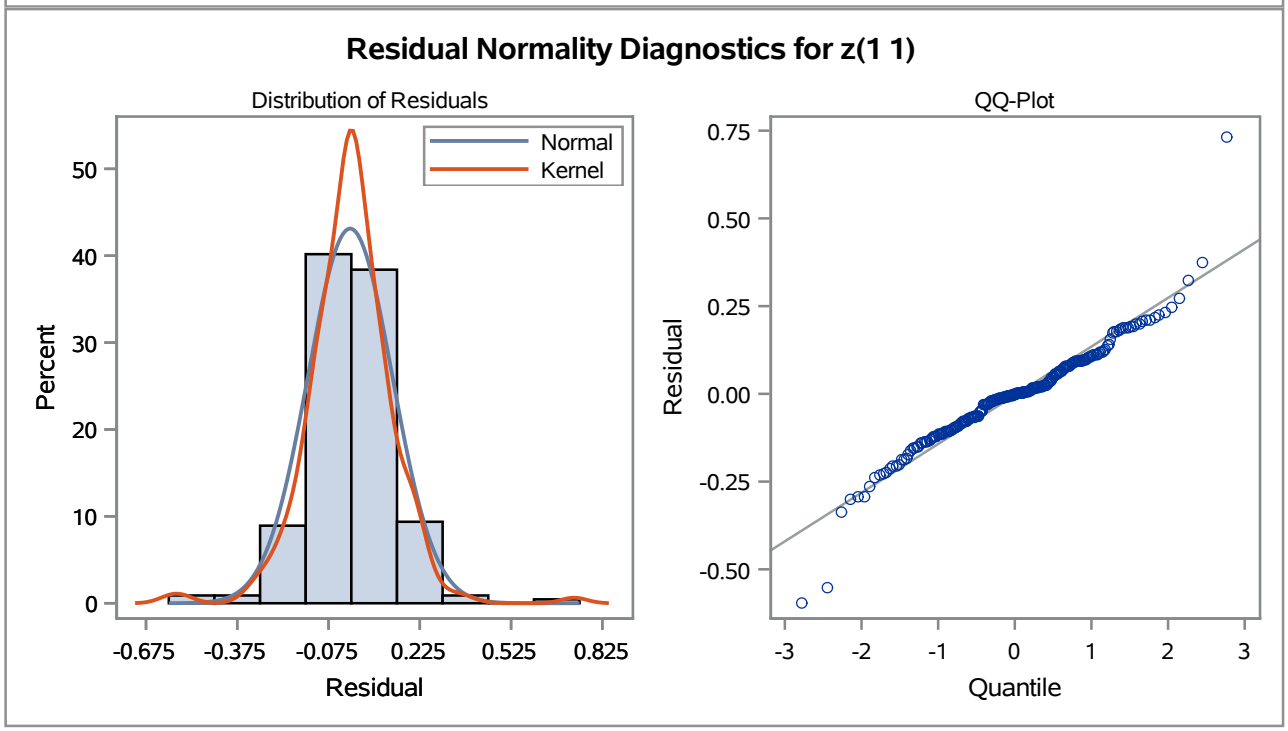
Variance Estimate	0.019359
Std Error Estimate	0.139136
AIC	-245.803
SBC	-238.98
Number of Residuals	224

Correlations of Parameter Estimates		
Parameter	**MA1,1**	**MA1,2**
MA1,1	1.000	0.049
MA1,2	0.049	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	2.71	4	0.6074	0.026	-0.082	0.019	-0.051	-0.027	-0.029
12	13.08	10	0.2191	0.043	-0.085	-0.119	0.088	-0.111	0.022
18	22.73	16	0.1211	-0.060	0.025	-0.026	-0.051	0.157	-0.085
24	26.49	22	0.2313	-0.018	0.008	-0.007	0.115	0.031	-0.020
30	36.41	28	0.1325	-0.114	0.010	0.053	0.027	0.136	-0.058
36	49.02	34	0.0461	-0.115	0.044	-0.061	-0.050	-0.159	-0.030
42	51.28	40	0.1090	-0.050	-0.069	0.016	0.014	0.014	0.020

The ARIMA Procedure



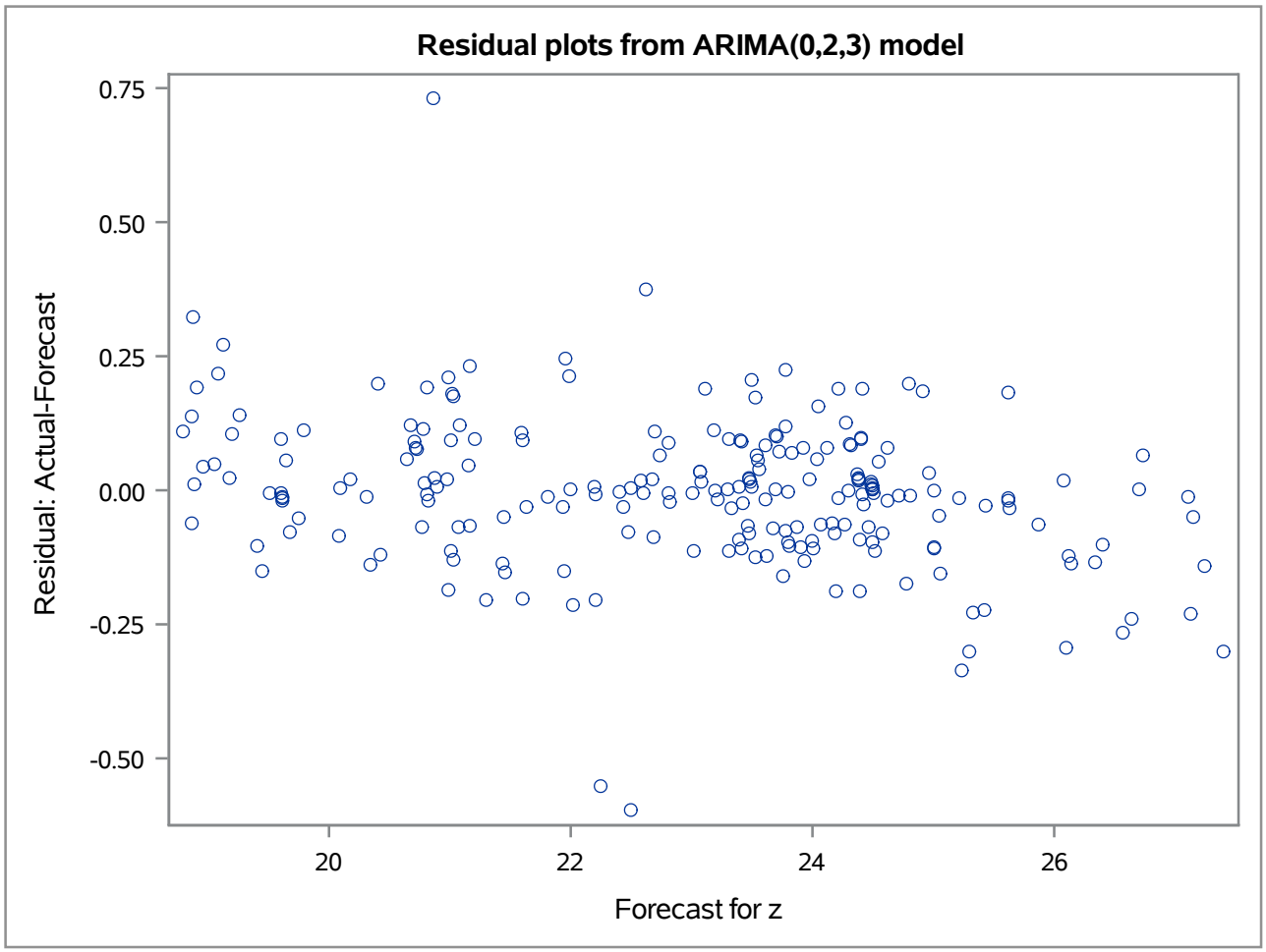


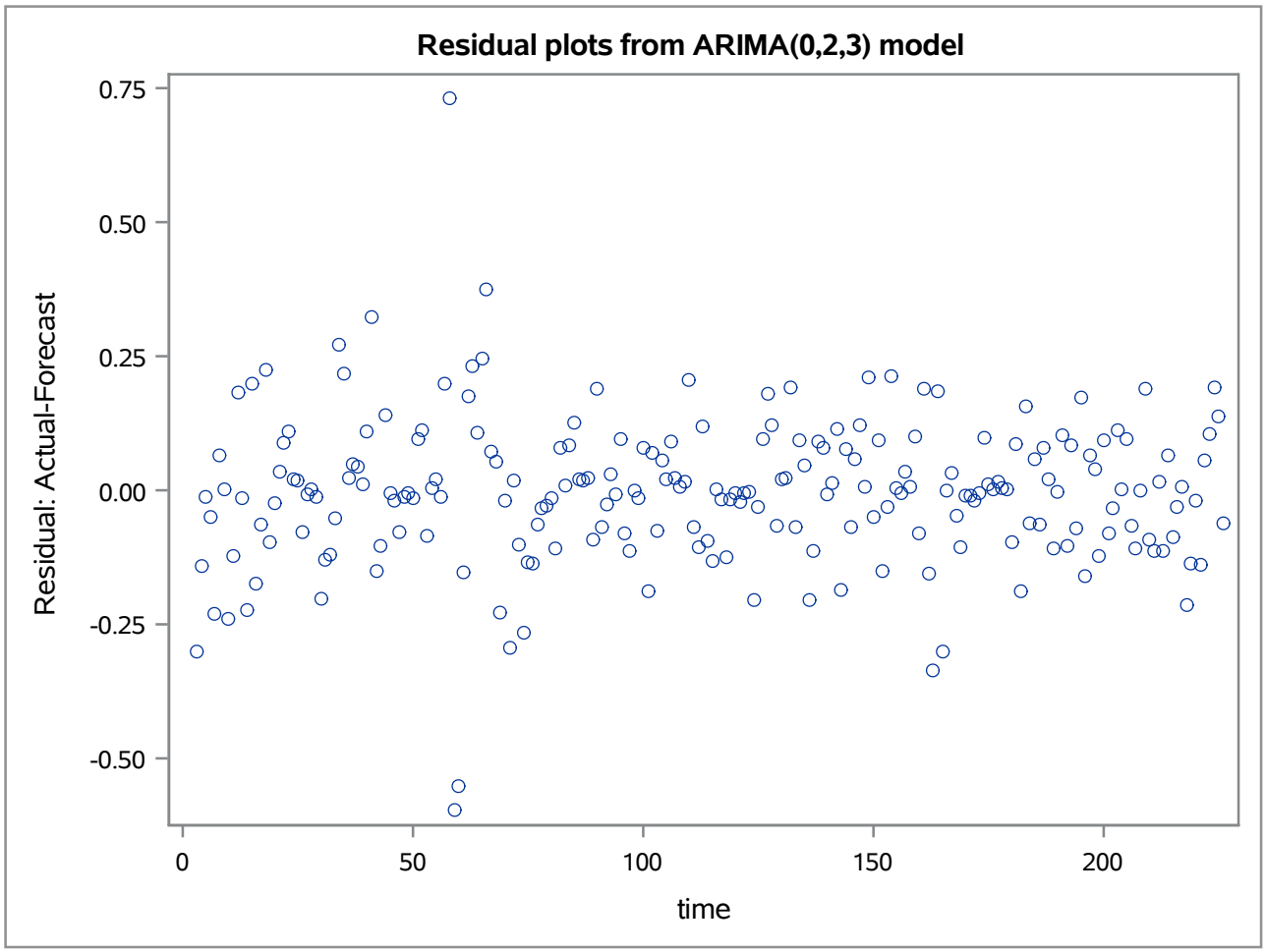
Model for variable z	
Period(s) of Differencing	1,1

No mean term in this model.

The ARIMA Procedure

Moving Average Factors	
Factor 1:	1 - 0.14401 B**(1) - 0.17111 B**(3)


Residual plots from ARIMA(0,2,3) model
Residual: Actual-Forecast
0.75
0.50
0.25
0.00
-0.25
-0.50
20
22
24
26
Forecast for z


Residual plots from ARIMA(0,2,3) model
Residual: Actual-Forecast
0.75
0.50
0.25
0.00
-0.25
-0.50
0
50
100
150
200
time