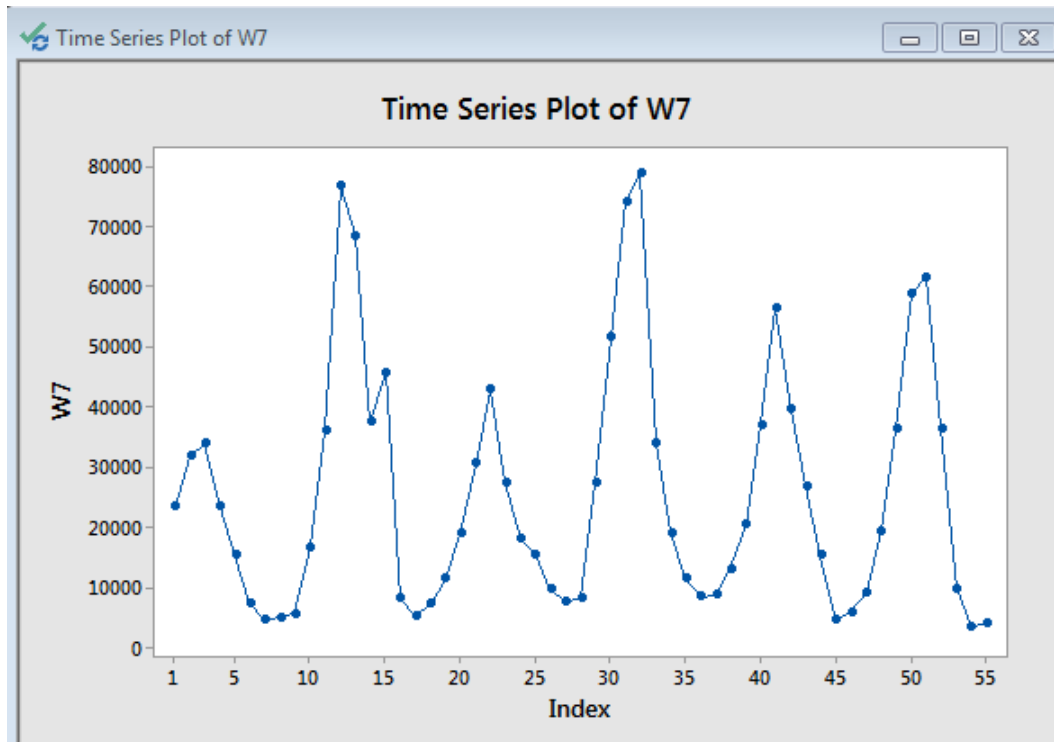


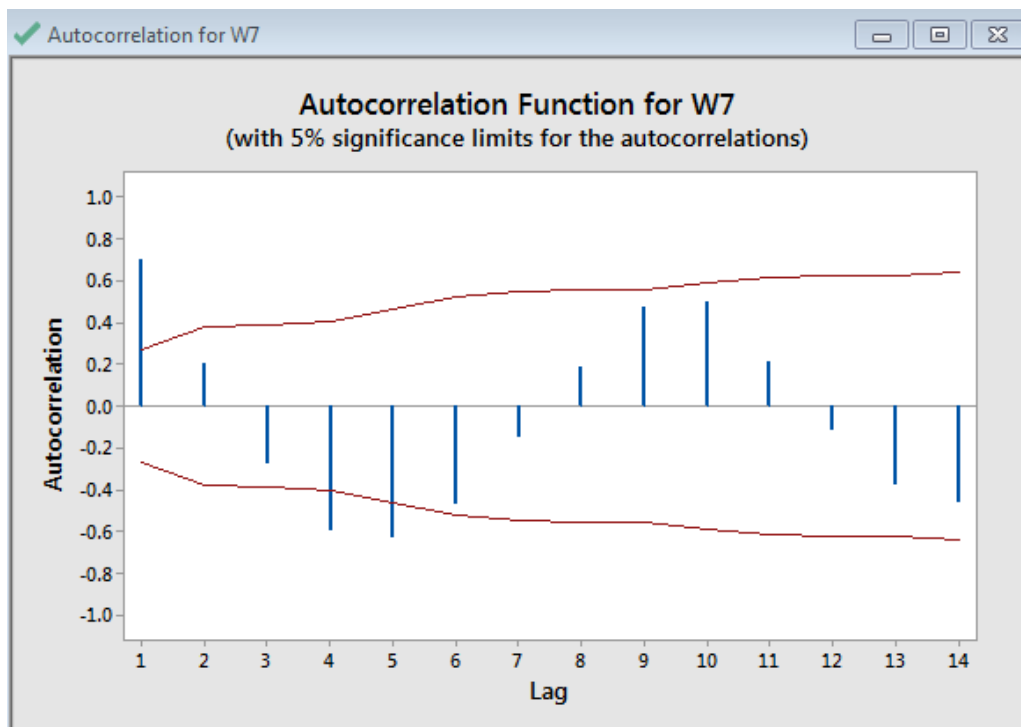
Time Series and Forecasting

(STAT 436)

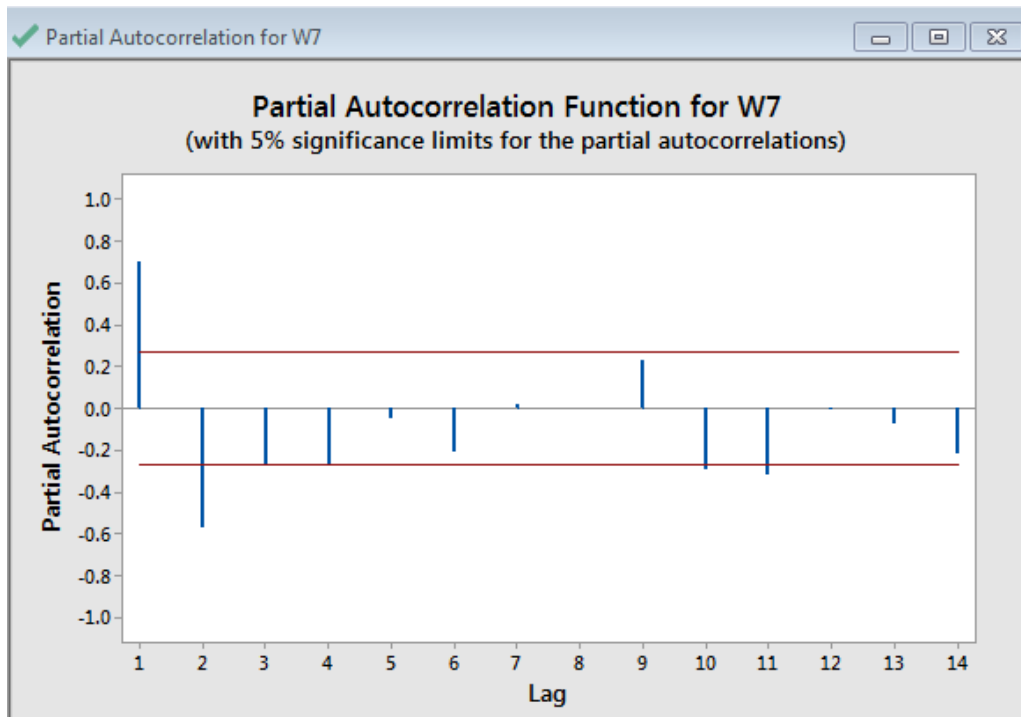
Time series plot of W7



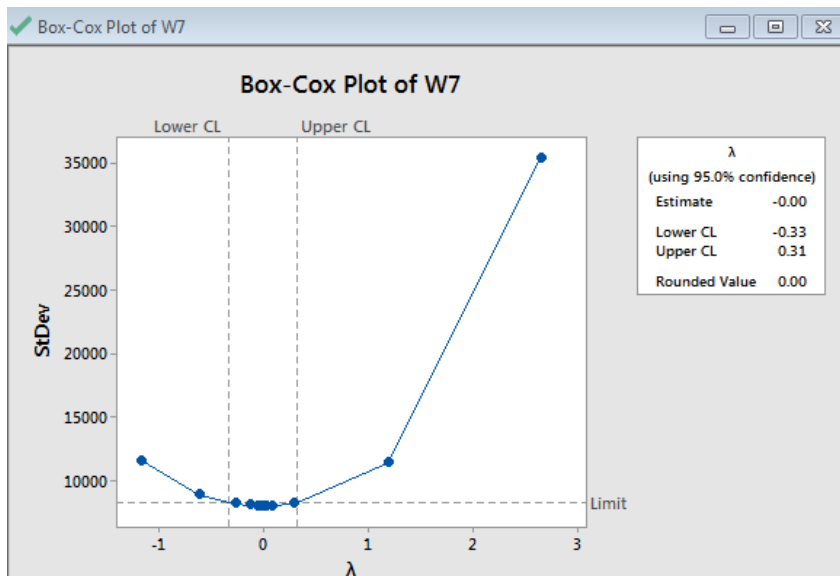
ACF



PACF

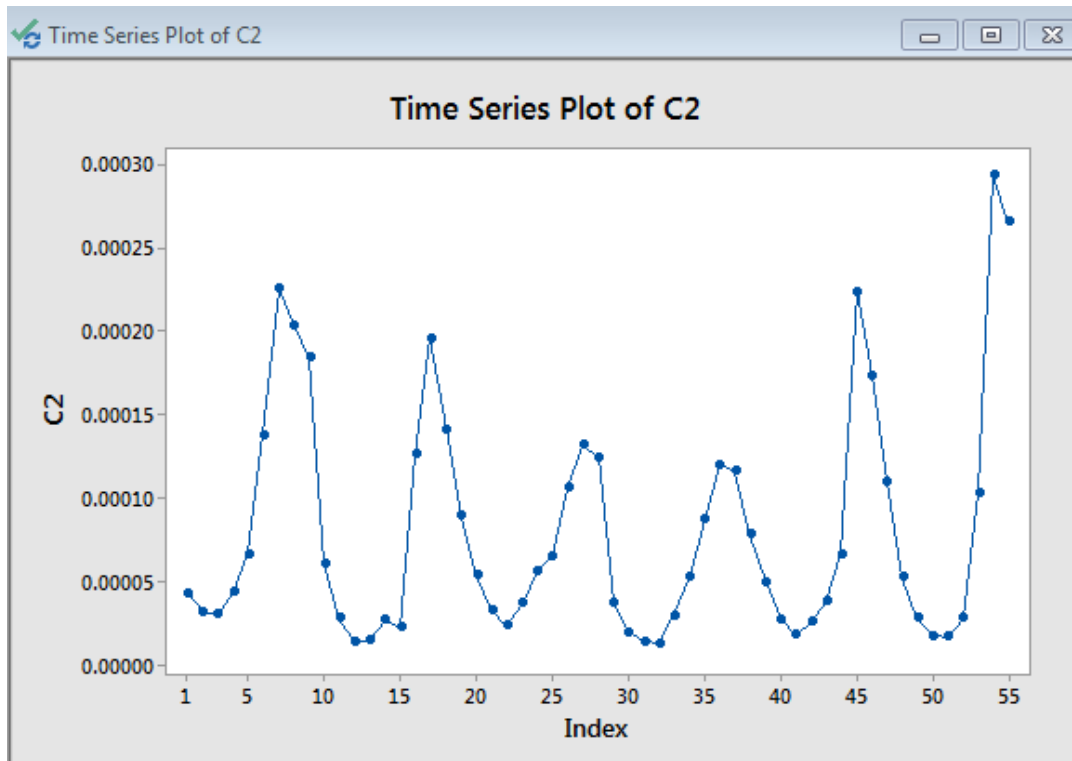


Transformation



$\lambda = 0$, Transformation is $W7^{-1}$

Time series plot of $W7^{-1}$



Fitting the model

The figure shows the ARIMA dialog box for fitting a model to the series "C2". The "Fit seasonal model" checkbox is checked, and the "Period" is set to 12. The model parameters are:

	Nonseasonal	Seasonal
Autoregressive:	1	0
Difference:	0	1
Moving average:	1	2

Other options include "Include constant term in model" (unchecked) and "Starting values for coefficients" (empty field). Buttons for "Graphs...", "Forecasts...", "Results...", "Storage...", "OK", and "Cancel" are present.

ARIMA Model: C2

Estimates at each iteration

Iteration	SSE		Parameters			
0	3.61825E-07	0.100	0.100	0.100	0.100	0.100
1	2.34901E-07	0.224	-0.024	0.250	0.248	
2	2.20174E-07	0.121	-0.174	0.248	0.266	
3	2.04373E-07	0.030	-0.324	0.248	0.289	
4	1.84203E-07	-0.033	-0.474	0.255	0.323	
5	1.45882E-07	0.021	-0.624	0.296	0.412	
6	1.27686E-07	0.171	-0.600	0.344	0.472	
7	1.15419E-07	0.321	-0.609	0.404	0.544	
8	1.12796E-07	0.425	-0.624	0.462	0.570	
9	1.12743E-07	0.435	-0.619	0.481	0.537	
10	1.12740E-07	0.434	-0.624	0.480	0.536	
11	1.12740E-07	0.437	-0.620	0.483	0.533	
12	1.12739E-07	0.436	-0.623	0.481	0.534	
13	1.12739E-07	0.437	-0.621	0.482	0.533	
14	1.12739E-07	0.436	-0.622	0.482	0.534	
15	1.12739E-07	0.437	-0.621	0.482	0.533	
16	1.12739E-07	0.436	-0.622	0.482	0.534	

Relative change in each estimate less than 0.0010

Final Estimates of Parameters

Type		Coef	SE Coef	T	P
AR	1	0.4363	0.1930	2.26	0.029
MA	1	-0.6218	0.1853	-3.36	0.002
SMA	12	0.4819	0.1987	2.43	0.020
SMA	24	0.5337	0.2757	1.94	0.060

Differencing: 0 regular, 1 seasonal of order 12

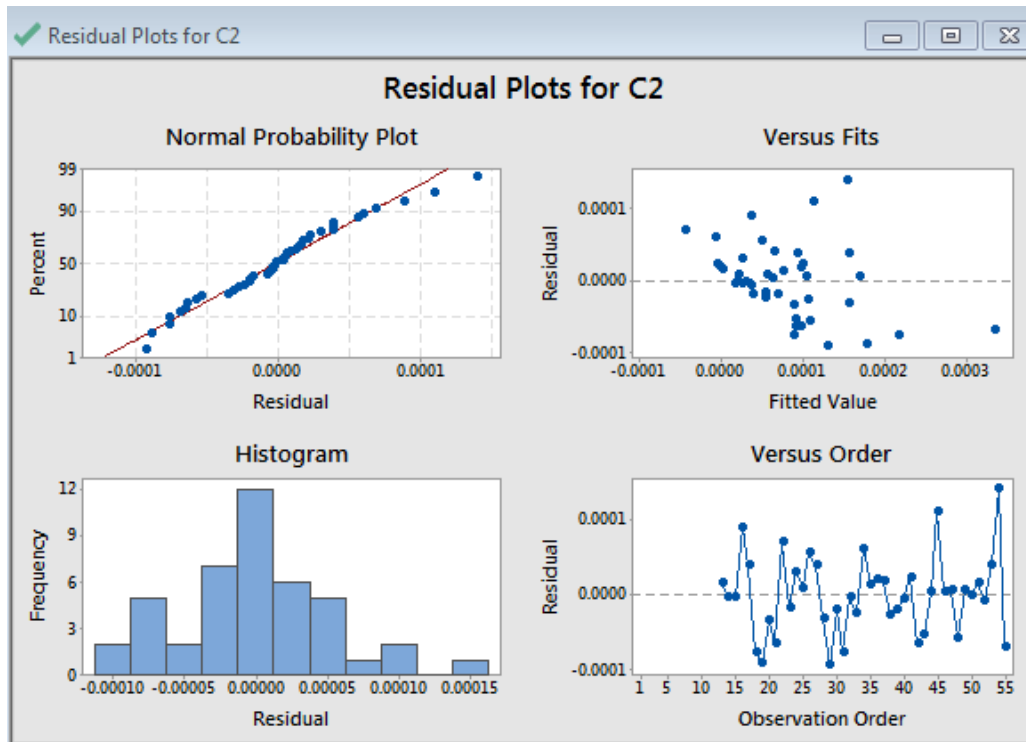
Number of observations: Original series 55, after differencing 43

Residuals: SS = 0.000000110980 (backforecasts excluded)
MS = 0.000000002846 DF = 39

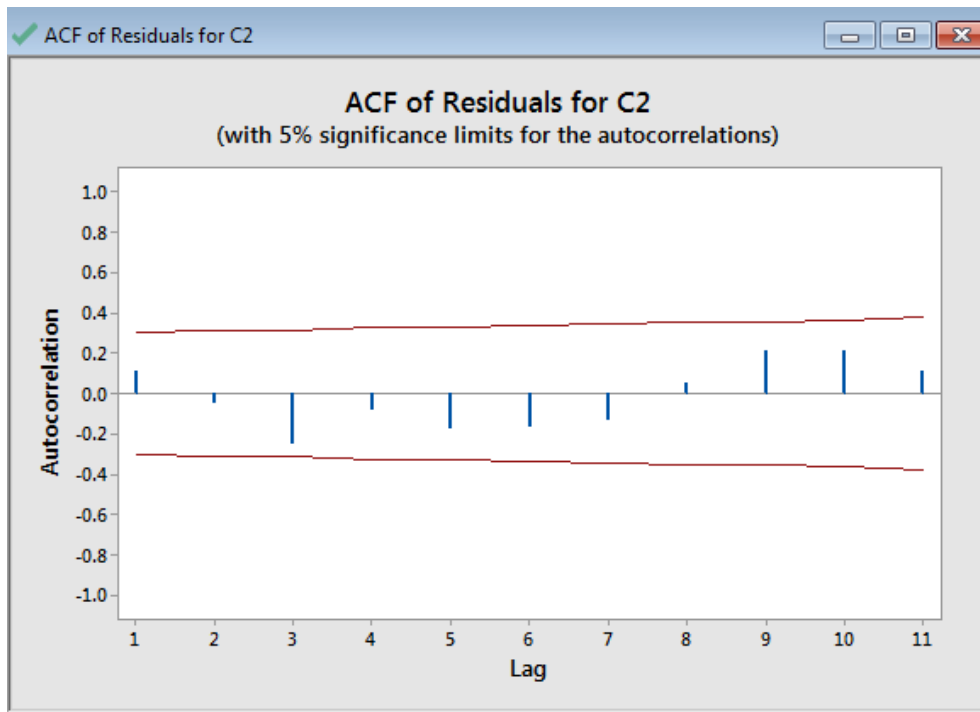
Modified Box-Pierce (Ljung-Box) Chi-Square statistic

Lag	12	24	36	48
Chi-Square	14.4	25.6	41.7	*
DF	8	20	32	*
P-Value	0.073	0.180	0.117	*

Plots of Residuals



ACF



PACF

