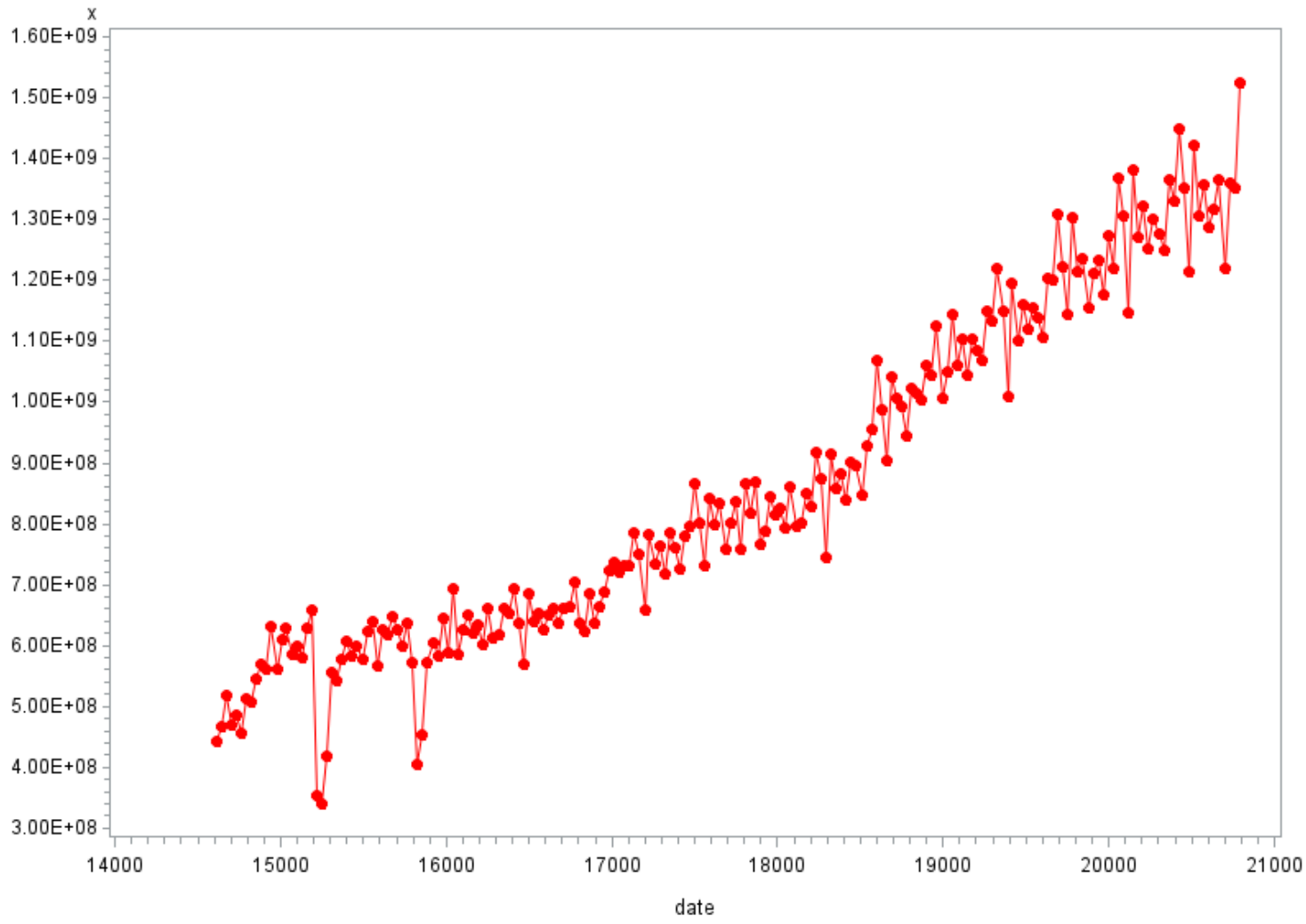
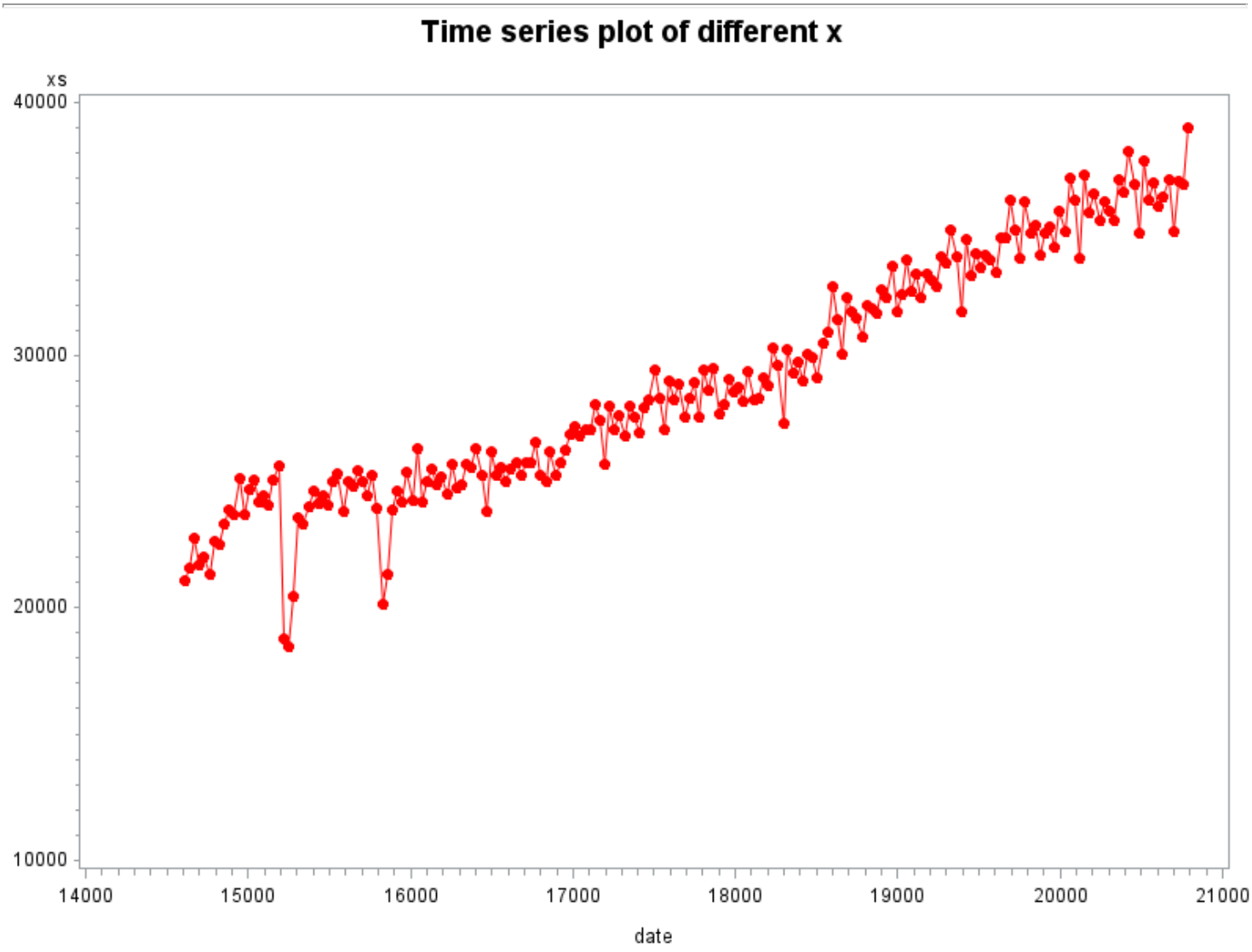
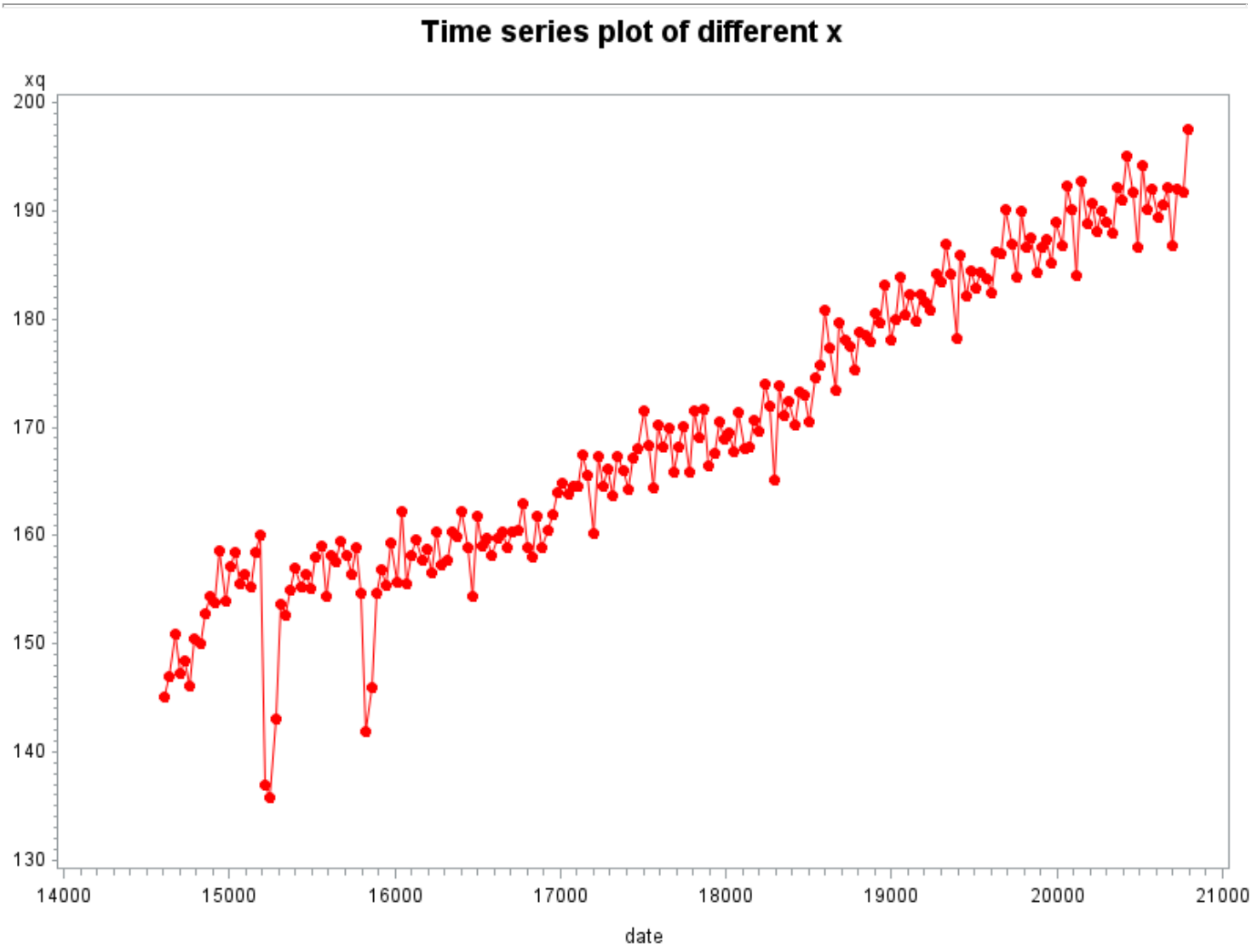
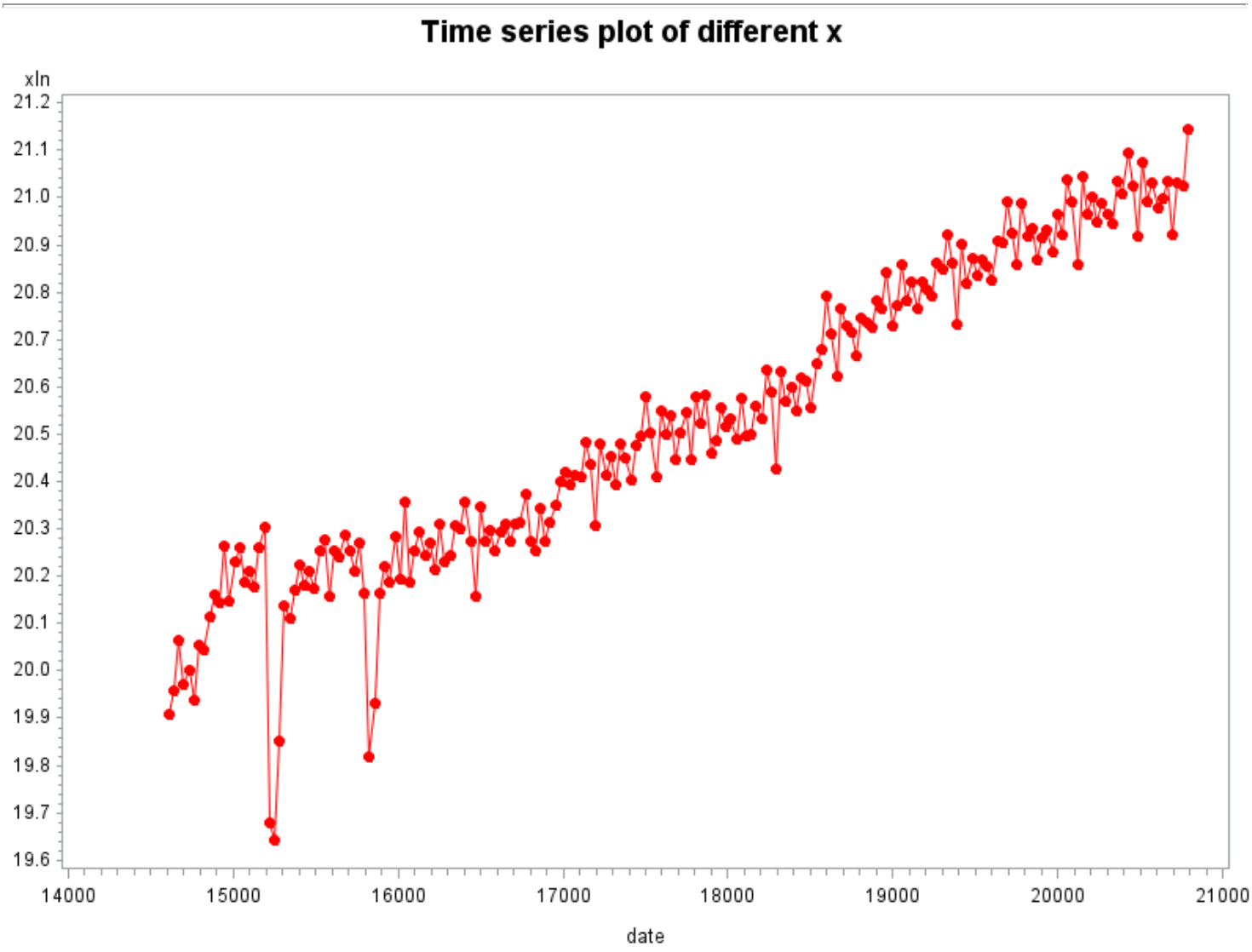

Time series plot of different x
x
1.60E+09
1.50E+09
1.40E+09
1.30E+09
1.20E+09
1.10E+09
1.00E+09
9.00E+08
8.00E+08
7.00E+08
6.00E+08
5.00E+08
4.00E+08
3.00E+08
14000
15000
16000
17000
18000
19000
20000
21000
date


Time series plot of different x
xs
40000
30000
20000
10000
14000
15000
16000
17000
18000
19000
20000
21000
date


Time series plot of different x
xq
200
190
180
170
160
150
140
130
14000
15000
16000
17000
18000
19000
20000
21000
date

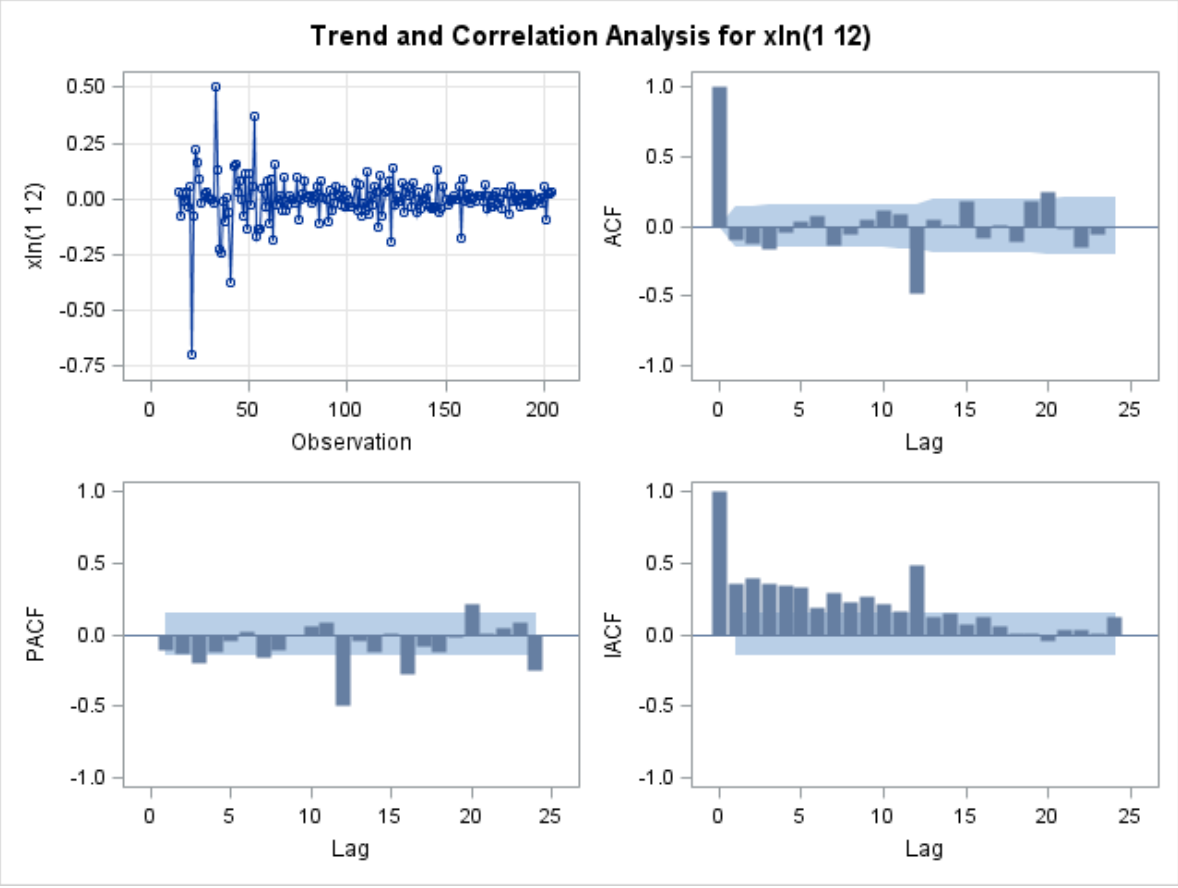

Time series plot of different x
xln
21.2
21.1
21.0
20.9
20.8
20.7
20.6
20.5
20.4
20.3
20.2
20.1
20.0
19.9
19.8
19.7
19.6
14000
15000
16000
17000
18000
19000
20000
21000
date

Time series plot of different x

The ARIMA Procedure

Name of Variable = xln	
Period(s) of Differencing	1,12
Mean of Working Series	-0.00099
Standard Deviation	0.099464
Number of Observations	191
Observation(s) eliminated by differencing	13

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	12.01	6	0.0618	-0.103	-0.118	-0.163	-0.051	0.034	0.080
12	69.85	12	<.0001	-0.136	-0.060	0.051	0.115	0.090	-0.486
18	81.62	18	<.0001	0.045	0.013	0.184	-0.080	0.008	-0.116
24	108.09	24	<.0001	0.182	0.249	-0.013	-0.153	-0.064	-0.010



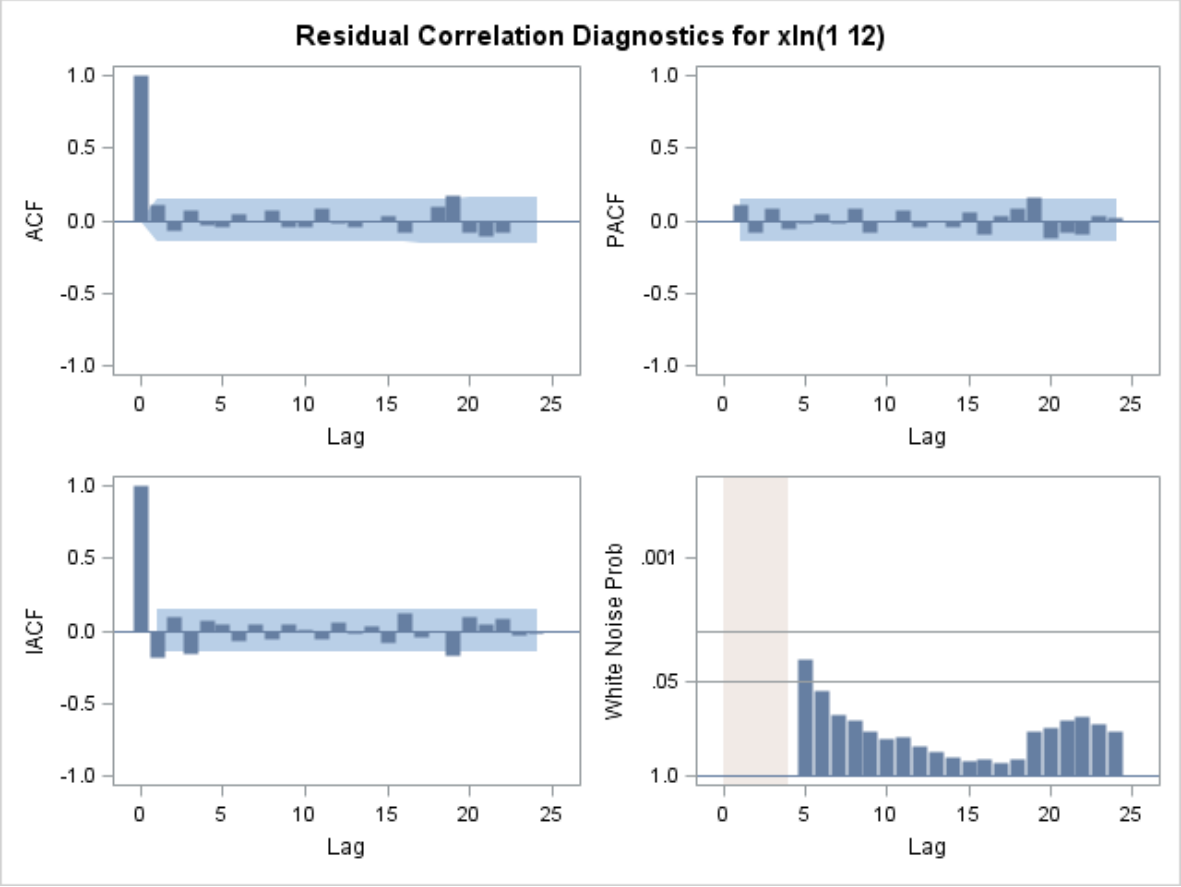
Maximum Likelihood Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MA1,1	0.50752	0.05809	8.74	<.0001	1
MA1,2	0.37719	0.05541	6.81	<.0001	3
MA2,1	0.83824	0.06212	13.49	<.0001	12
AR1,1	0.45494	0.05953	7.64	<.0001	20

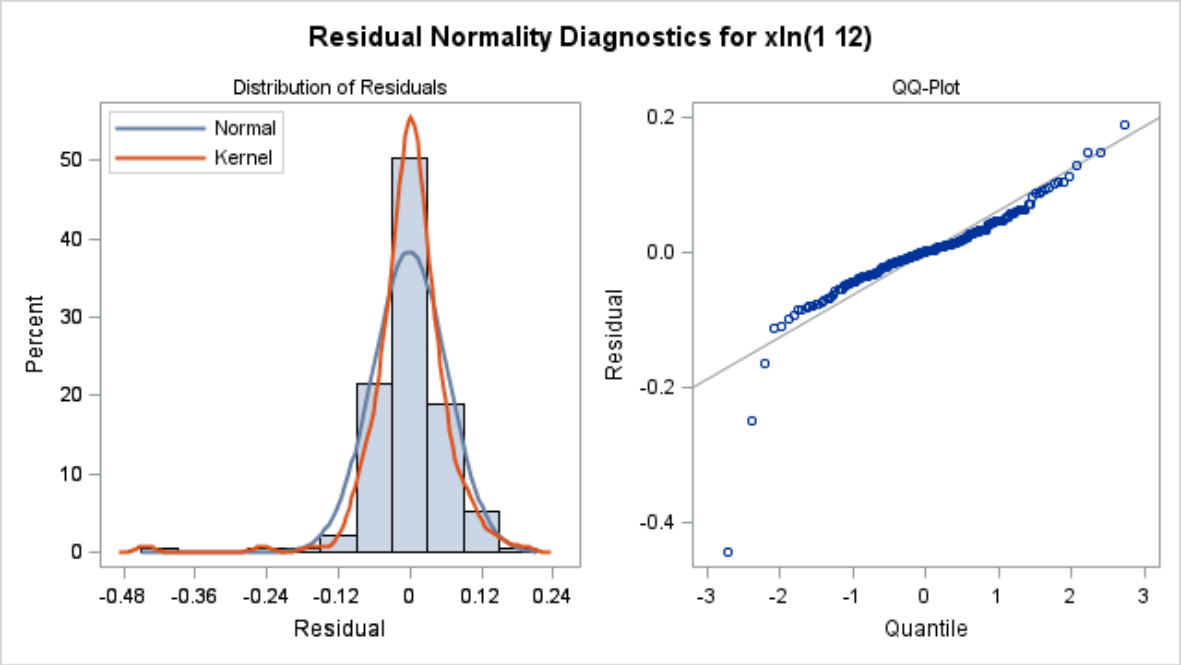
Variance Estimate	0.003946
Std Error Estimate	0.062821
AIC	-490.21

SBC	-477.201
Number of Residuals	191

Correlations of Parameter Estimates				
Parameter	**MA1,1**	**MA1,2**	**MA2,1**	**AR1,1**
MA1,1	1.000	-0.452	-0.117	0.117
MA1,2	-0.452	1.000	-0.033	-0.039
MA2,1	-0.117	-0.033	1.000	-0.060
AR1,1	0.117	-0.039	-0.060	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	5.45	2	0.0654	0.114	-0.070	0.068	-0.033	-0.047	0.046
12	8.55	8	0.3819	-0.002	0.067	-0.043	-0.041	0.081	-0.024
18	12.47	14	0.5687	-0.039	-0.012	0.039	-0.079	0.001	0.096
24	24.13	20	0.2366	0.167	-0.085	-0.106	-0.086	-0.009	-0.001
30	28.43	26	0.3375	-0.074	0.064	-0.064	-0.046	-0.023	0.054
36	31.99	32	0.4672	-0.069	-0.004	-0.012	-0.008	0.051	0.087





Model for variable xln	
Period(s) of Differencing	1,12

No mean term in this model.

Autoregressive Factors	
Factor 1:	1 - 0.45494 B**(20)

Moving Average Factors	
Factor 1:	1 - 0.50752 B**(1) - 0.37719 B**(3)
Factor 2:	1 - 0.83824 B**(12)

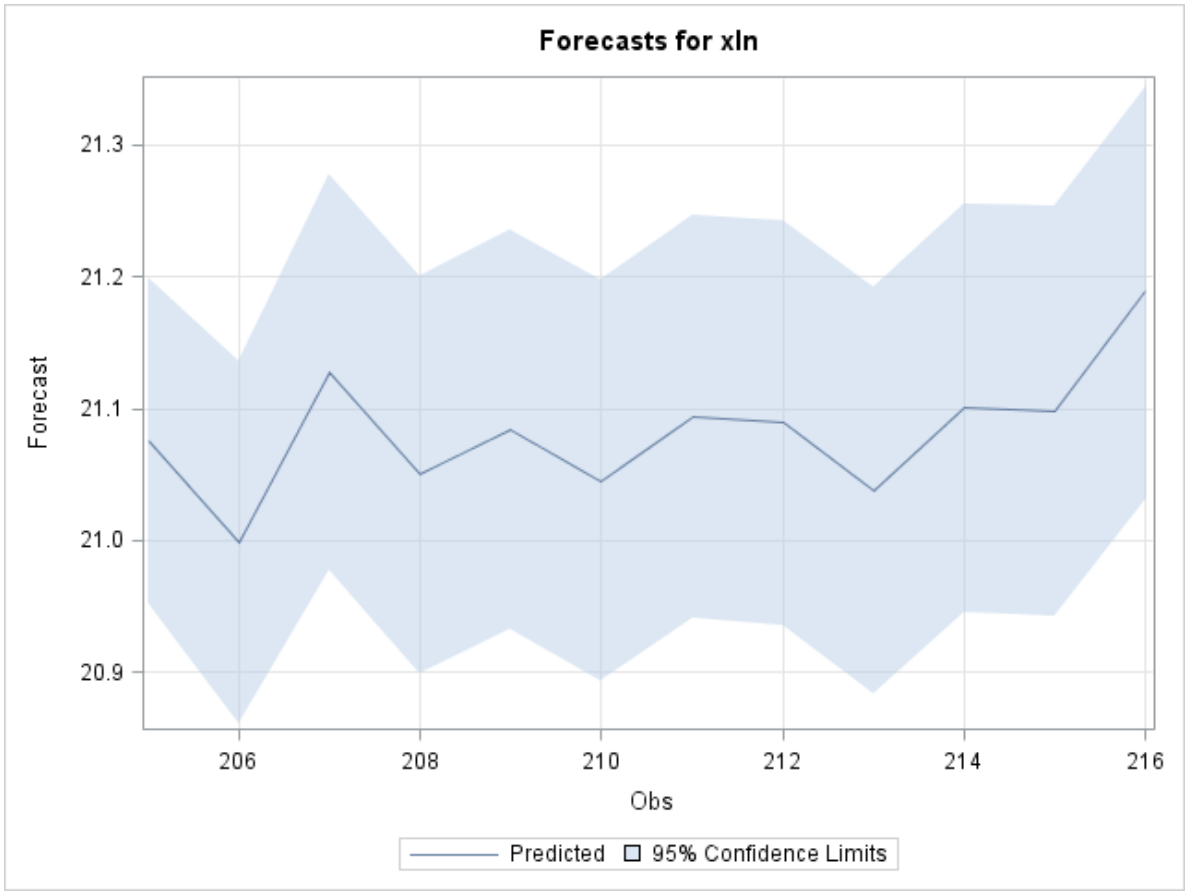
Forecasts for variable xln						
Obs	Forecast	Std Error	95% Confidence Limits		Actual	Residual
14	20.1987	0.1089	19.9853	20.4122	20.2299	0.0311
15	20.3246	0.1015	20.1257	20.5236	20.2604	-0.0642
16	20.1918	0.1015	19.9929	20.3907	20.1884	-0.0034
17	20.2092	0.0982	20.0166	20.4017	20.2098	0.0006
18	20.1653	0.0959	19.9773	20.3533	20.1790	0.0137
19	20.2924	0.0959	20.1044	20.4804	20.2604	-0.0320
20	20.2586	0.0956	20.0712	20.4459	20.3038	0.0453
21	20.3534	0.0956	20.1661	20.5408	19.6797	-0.6737
22	20.0099	0.0931	19.8275	20.1923	19.6434	-0.3665
23	19.7577	0.0929	19.5755	19.9399	19.8523	0.0946
24	20.1225	0.0929	19.9403	20.3046	20.1378	0.0153
25	20.1283	0.0918	19.9483	20.3083	20.1116	-0.0168
26	20.1610	0.0819	20.0005	20.3214	20.1722	0.0113
27	20.2117	0.0810	20.0529	20.3705	20.2254	0.0137
28	20.1056	0.0810	19.9468	20.2644	20.1815	0.0759
29	20.3157	0.0808	20.1574	20.4739	20.2092	-0.1065
30	20.2237	0.0785	20.0698	20.3775	20.1751	-0.0486
31	20.2259	0.0767	20.0755	20.3763	20.2524	0.0265

32	20.2415	0.0762	20.0920	20.3909	20.2774	0.0360
33	20.0088	0.0731	19.8655	20.1520	20.1572	0.1485
34	20.0835	0.0728	19.9408	20.2261	20.2543	0.1709
35	20.2375	0.0723	20.0958	20.3792	20.2404	0.0029
36	20.4011	0.0722	20.2595	20.5426	20.2872	-0.1139
37	20.2041	0.0713	20.0643	20.3439	20.2533	0.0492
38	20.3041	0.0702	20.1666	20.4417	20.2102	-0.0939
39	20.3326	0.0700	20.1953	20.4698	20.2719	-0.0606
40	20.2277	0.0700	20.0906	20.3649	20.1651	-0.0626
41	20.0008	0.0700	19.8636	20.1379	19.8197	-0.1810
42	19.8632	0.0695	19.7269	19.9994	19.9330	0.0699
43	20.0945	0.0690	19.9592	20.2298	20.1636	0.0690
44	20.2759	0.0689	20.1409	20.4110	20.2219	-0.0540
45	20.0625	0.0680	19.9292	20.1958	20.1857	0.1232
46	20.1224	0.0679	19.9893	20.2555	20.2827	0.1602
47	20.2727	0.0677	20.1400	20.4054	20.1926	-0.0801
48	20.3622	0.0677	20.2296	20.4949	20.3572	-0.0050
49	20.2366	0.0673	20.1047	20.3684	20.1865	-0.0501
50	20.2645	0.0668	20.1336	20.3954	20.2554	-0.0091
51	20.3066	0.0667	20.1757	20.4374	20.2927	-0.0139
52	20.2411	0.0667	20.1103	20.3719	20.2448	0.0037
53	20.2082	0.0667	20.0774	20.3390	20.2695	0.0613
54	20.2875	0.0665	20.1571	20.4178	20.2147	-0.0728
55	20.3464	0.0663	20.2164	20.4764	20.3090	-0.0374
56	20.2676	0.0663	20.1377	20.3976	20.2311	-0.0366
57	20.1507	0.0659	20.0216	20.2799	20.2425	0.0918
58	20.2097	0.0658	20.0807	20.3388	20.3082	0.0984
59	20.2884	0.0657	20.1596	20.4172	20.2988	0.0104
60	20.4040	0.0657	20.2752	20.5328	20.3571	-0.0468
61	20.0751	0.0655	19.9467	20.2034	20.2732	0.1981
62	20.2748	0.0652	20.1469	20.4027	20.1580	-0.1168
63	20.3469	0.0652	20.2191	20.4747	20.3471	0.0002
64	20.2221	0.0652	20.0943	20.3499	20.2752	0.0531
65	20.2987	0.0652	20.1709	20.4265	20.2957	-0.0030
66	20.3205	0.0651	20.1929	20.4481	20.2533	-0.0672
67	20.3282	0.0650	20.2008	20.4556	20.2932	-0.0350
68	20.3206	0.0650	20.1932	20.4479	20.3103	-0.0103
69	20.1814	0.0648	20.0545	20.3084	20.2726	0.0912
70	20.3109	0.0647	20.1841	20.4378	20.3108	-0.0001
71	20.3122	0.0647	20.1854	20.4389	20.3140	0.0018
72	20.4309	0.0647	20.3042	20.5576	20.3742	-0.0567
73	20.3413	0.0645	20.2148	20.4677	20.2728	-0.0684
74	20.2887	0.0644	20.1625	20.4149	20.2524	-0.0363
75	20.3597	0.0644	20.2335	20.4858	20.3451	-0.0145
76	20.2617	0.0644	20.1355	20.3878	20.2731	0.0115
77	20.3102	0.0644	20.1841	20.4363	20.3133	0.0031
78	20.3127	0.0643	20.1867	20.4387	20.3504	0.0378
79	20.4195	0.0642	20.2936	20.5454	20.3987	-0.0208

80	20.3711	0.0642	20.2453	20.4970	20.4194	0.0483
81	20.2870	0.0641	20.1614	20.4127	20.3945	0.1075
82	20.3279	0.0641	20.2023	20.4535	20.4120	0.0840
83	20.4196	0.0640	20.2941	20.5451	20.4114	-0.0082
84	20.4962	0.0640	20.3707	20.6217	20.4832	-0.0130
85	20.3859	0.0639	20.2605	20.5112	20.4370	0.0511
86	20.4006	0.0639	20.2754	20.5257	20.3070	-0.0936
87	20.4084	0.0638	20.2833	20.5336	20.4798	0.0714
88	20.3599	0.0638	20.2348	20.4851	20.4135	0.0535
89	20.4295	0.0638	20.3044	20.5547	20.4532	0.0237
90	20.4066	0.0638	20.2815	20.5316	20.3926	-0.0140
91	20.4684	0.0638	20.3434	20.5934	20.4801	0.0117
92	20.4408	0.0638	20.3158	20.5657	20.4486	0.0078
93	20.3611	0.0637	20.2363	20.4859	20.4044	0.0433
94	20.4099	0.0637	20.2851	20.5347	20.4753	0.0654
95	20.4493	0.0636	20.3246	20.5741	20.4969	0.0475
96	20.5684	0.0636	20.4437	20.6931	20.5793	0.0109
97	20.4900	0.0636	20.3653	20.6146	20.5035	0.0135
98	20.4799	0.0635	20.3554	20.6044	20.4094	-0.0705
99	20.5170	0.0635	20.3926	20.6415	20.5504	0.0333
100	20.4655	0.0635	20.3410	20.5899	20.4991	0.0336
101	20.5279	0.0635	20.4035	20.6524	20.5402	0.0123
102	20.4948	0.0635	20.3704	20.6192	20.4458	-0.0490
103	20.5444	0.0635	20.4200	20.6688	20.5017	-0.0427
104	20.4982	0.0635	20.3738	20.6225	20.5459	0.0478
105	20.4848	0.0634	20.3605	20.6090	20.4459	-0.0389
106	20.4718	0.0634	20.3475	20.5960	20.5783	0.1065
107	20.5546	0.0634	20.4304	20.6788	20.5223	-0.0323
108	20.6622	0.0634	20.5379	20.7864	20.5840	-0.0782
109	20.5211	0.0633	20.3969	20.6452	20.4584	-0.0627
110	20.4417	0.0633	20.3177	20.5658	20.4852	0.0435
111	20.5986	0.0633	20.4746	20.7227	20.5551	-0.0435
112	20.5160	0.0633	20.3920	20.6401	20.5175	0.0015
113	20.5154	0.0633	20.3914	20.6395	20.5331	0.0177
114	20.5248	0.0633	20.4008	20.6488	20.4909	-0.0339
115	20.5993	0.0633	20.4753	20.7233	20.5747	-0.0246
116	20.5763	0.0633	20.4523	20.7003	20.4962	-0.0801
117	20.4731	0.0632	20.3492	20.5971	20.5004	0.0273
118	20.5273	0.0632	20.4034	20.6512	20.5594	0.0321
119	20.5889	0.0632	20.4650	20.7128	20.5343	-0.0546
120	20.6592	0.0632	20.5353	20.7831	20.6364	-0.0228
121	20.5626	0.0632	20.4388	20.6865	20.5897	0.0271
122	20.5358	0.0632	20.4120	20.6596	20.4274	-0.1084
123	20.5765	0.0631	20.4528	20.7003	20.6338	0.0572
124	20.5527	0.0631	20.4290	20.6765	20.5700	0.0173
125	20.5913	0.0631	20.4676	20.7151	20.5982	0.0068
126	20.5811	0.0631	20.4573	20.7048	20.5482	-0.0329
127	20.6133	0.0631	20.4896	20.7370	20.6208	0.0075

128	20.5879	0.0631	20.4642	20.7117	20.6128	0.0249
129	20.5272	0.0631	20.4036	20.6509	20.5562	0.0290
130	20.6303	0.0631	20.5066	20.7540	20.6492	0.0189
131	20.6062	0.0631	20.4825	20.7298	20.6778	0.0716
132	20.7434	0.0631	20.6197	20.8670	20.7907	0.0473
133	20.6790	0.0631	20.5554	20.8026	20.7115	0.0325
134	20.6140	0.0631	20.4904	20.7376	20.6216	0.0076
135	20.7185	0.0630	20.5950	20.8421	20.7648	0.0462
136	20.6277	0.0630	20.5041	20.7513	20.7290	0.1013
137	20.7179	0.0630	20.5944	20.8415	20.7160	-0.0020
138	20.6644	0.0630	20.5408	20.7879	20.6662	0.0019
139	20.6989	0.0630	20.5753	20.8224	20.7459	0.0470
140	20.7177	0.0630	20.5941	20.8412	20.7372	0.0195
141	20.6821	0.0630	20.5586	20.8056	20.7261	0.0440
142	20.6920	0.0630	20.5684	20.8155	20.7827	0.0908
143	20.7761	0.0630	20.6526	20.8996	20.7664	-0.0097
144	20.8557	0.0630	20.7322	20.9792	20.8425	-0.0131
145	20.7404	0.0630	20.6169	20.8639	20.7302	-0.0102
146	20.6754	0.0630	20.5520	20.7989	20.7715	0.0961
147	20.8454	0.0630	20.7220	20.9689	20.8571	0.0117
148	20.7968	0.0630	20.6733	20.9202	20.7820	-0.0148
149	20.7594	0.0630	20.6359	20.8828	20.8211	0.0617
150	20.7629	0.0630	20.6395	20.8863	20.7666	0.0037
151	20.8680	0.0630	20.7446	20.9914	20.8212	-0.0468
152	20.8210	0.0630	20.6976	20.9444	20.8055	-0.0155
153	20.7582	0.0630	20.6349	20.8816	20.7907	0.0324
154	20.8391	0.0630	20.7157	20.9625	20.8625	0.0234
155	20.8641	0.0630	20.7407	20.9875	20.8479	-0.0162
156	20.9535	0.0630	20.8301	21.0769	20.9229	-0.0306
157	20.8299	0.0629	20.7065	20.9533	20.8634	0.0335
158	20.8064	0.0629	20.6831	20.9298	20.7315	-0.0750
159	20.8967	0.0629	20.7733	21.0200	20.9024	0.0057
160	20.8256	0.0629	20.7023	20.9489	20.8195	-0.0061
161	20.8830	0.0629	20.7597	21.0064	20.8716	-0.0114
162	20.8310	0.0629	20.7077	20.9544	20.8362	0.0052
163	20.9059	0.0629	20.7826	21.0292	20.8682	-0.0377
164	20.8718	0.0629	20.7485	20.9951	20.8543	-0.0175
165	20.7989	0.0629	20.6755	20.9222	20.8256	0.0267
166	20.9373	0.0629	20.8140	21.0606	20.9079	-0.0294
167	20.9072	0.0629	20.7839	21.0305	20.9062	-0.0009
168	20.9826	0.0629	20.8593	21.1059	20.9922	0.0096
169	20.9290	0.0629	20.8057	21.0523	20.9236	-0.0054
170	20.8644	0.0629	20.7411	20.9877	20.8576	-0.0067
171	20.9708	0.0629	20.8475	21.0941	20.9886	0.0178
172	20.9135	0.0629	20.7903	21.0368	20.9179	0.0044
173	20.9519	0.0629	20.8287	21.0752	20.9359	-0.0161
174	20.9015	0.0629	20.7782	21.0248	20.8677	-0.0338
175	20.9478	0.0629	20.8245	21.0711	20.9163	-0.0315

176	20.9189	0.0629	20.7956	21.0422	20.9327	0.0138
177	20.9056	0.0629	20.7824	21.0289	20.8851	-0.0206
178	20.9349	0.0629	20.8116	21.0582	20.9662	0.0313
179	20.9651	0.0629	20.8419	21.0884	20.9214	-0.0437
180	21.0338	0.0629	20.9105	21.1570	21.0373	0.0036
181	20.9604	0.0629	20.8371	21.0836	20.9911	0.0307
182	20.9377	0.0629	20.8144	21.0609	20.8598	-0.0779
183	21.0040	0.0629	20.8808	21.1272	21.0462	0.0422
184	20.9455	0.0629	20.8223	21.0687	20.9643	0.0188
185	21.0089	0.0629	20.8857	21.1322	21.0031	-0.0058
186	20.9538	0.0629	20.8306	21.0771	20.9474	-0.0064
187	21.0114	0.0629	20.8882	21.1346	20.9867	-0.0247
188	20.9929	0.0629	20.8696	21.1161	20.9665	-0.0264
189	20.9429	0.0629	20.8197	21.0661	20.9453	0.0024
190	21.0197	0.0629	20.8965	21.1430	21.0340	0.0143
191	21.0279	0.0629	20.9047	21.1511	21.0090	-0.0189
192	21.1111	0.0629	20.9879	21.2344	21.0950	-0.0162
193	21.0217	0.0629	20.8985	21.1449	21.0260	0.0043
194	20.9492	0.0629	20.8260	21.0724	20.9185	-0.0307
195	21.0669	0.0629	20.9437	21.1901	21.0753	0.0084
196	21.0131	0.0629	20.8899	21.1363	20.9904	-0.0227
197	21.0320	0.0629	20.9088	21.1552	21.0298	-0.0022
198	20.9878	0.0629	20.8646	21.1110	20.9768	-0.0110
199	21.0345	0.0629	20.9113	21.1577	20.9995	-0.0350
200	21.0212	0.0629	20.8980	21.1444	21.0350	0.0138
201	21.0059	0.0629	20.8827	21.1291	20.9215	-0.0844
202	21.0178	0.0629	20.8946	21.1410	21.0316	0.0138
203	21.0332	0.0629	20.9100	21.1564	21.0260	-0.0072
204	21.1486	0.0629	21.0254	21.2718	21.1444	-0.0042
205	21.0759	0.0628	20.9528	21.1990	.	.
206	20.9983	0.0700	20.8611	21.1356	.	.
207	21.1273	0.0766	20.9772	21.2773	.	.
208	21.0497	0.0769	20.8990	21.2004	.	.
209	21.0837	0.0772	20.9323	21.2350	.	.
210	21.0450	0.0776	20.8929	21.1970	.	.
211	21.0941	0.0779	20.9414	21.2468	.	.
212	21.0889	0.0783	20.9356	21.2423	.	.
213	21.0381	0.0786	20.8841	21.1922	.	.
214	21.1006	0.0789	20.9459	21.2553	.	.
215	21.0977	0.0792	20.9424	21.2531	.	.
216	21.1886	0.0796	21.0327	21.3446	.	.


Forecasts for xln
Forecast
21.3
21.2
21.1
21.0
20.9
206
208
210
212
214
216
Obs
Predicted
95% Confidence Limits