

Examining ARIMA(2,0,0)(0,1,1)_12 on Y=log(X)

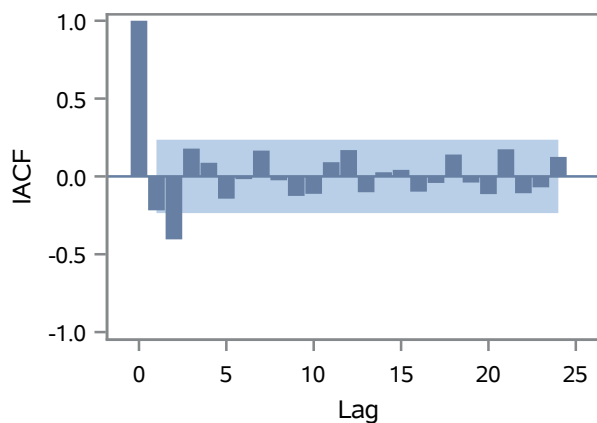
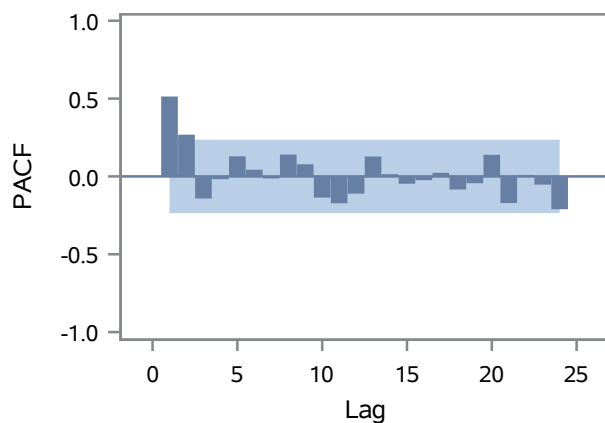
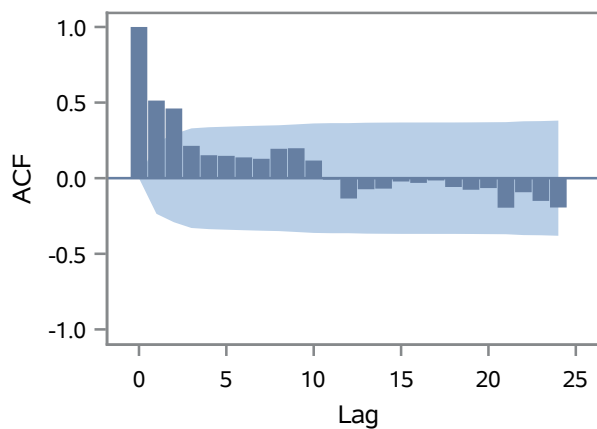
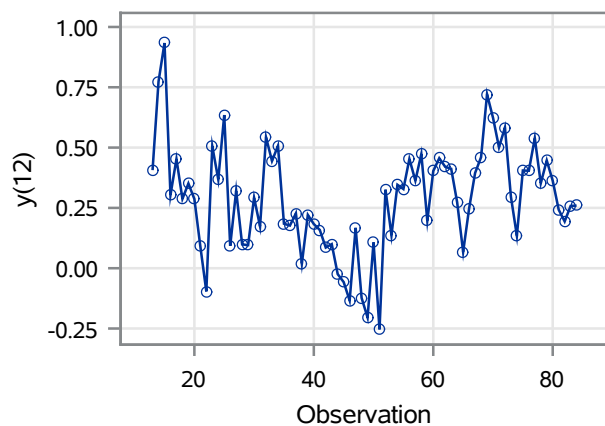
The ARIMA Procedure

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 = y	
Period(s) of Differencing	12
Mean of Working Series	0.288627
Standard Deviation	0.221759
Number of Observations	72
Observation(s) eliminated by differencing	12

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	44.53	6	<.0001	0.513	0.461	0.214	0.152	0.148	0.137
12	55.12	12	<.0001	0.128	0.194	0.198	0.117	-0.010	-0.134
18	56.54	18	<.0001	-0.073	-0.069	-0.022	-0.031	-0.015	-0.058
24	69.09	24	<.0001	-0.077	-0.065	-0.195	-0.093	-0.150	-0.194

Trend and Correlation Analysis for y(12)



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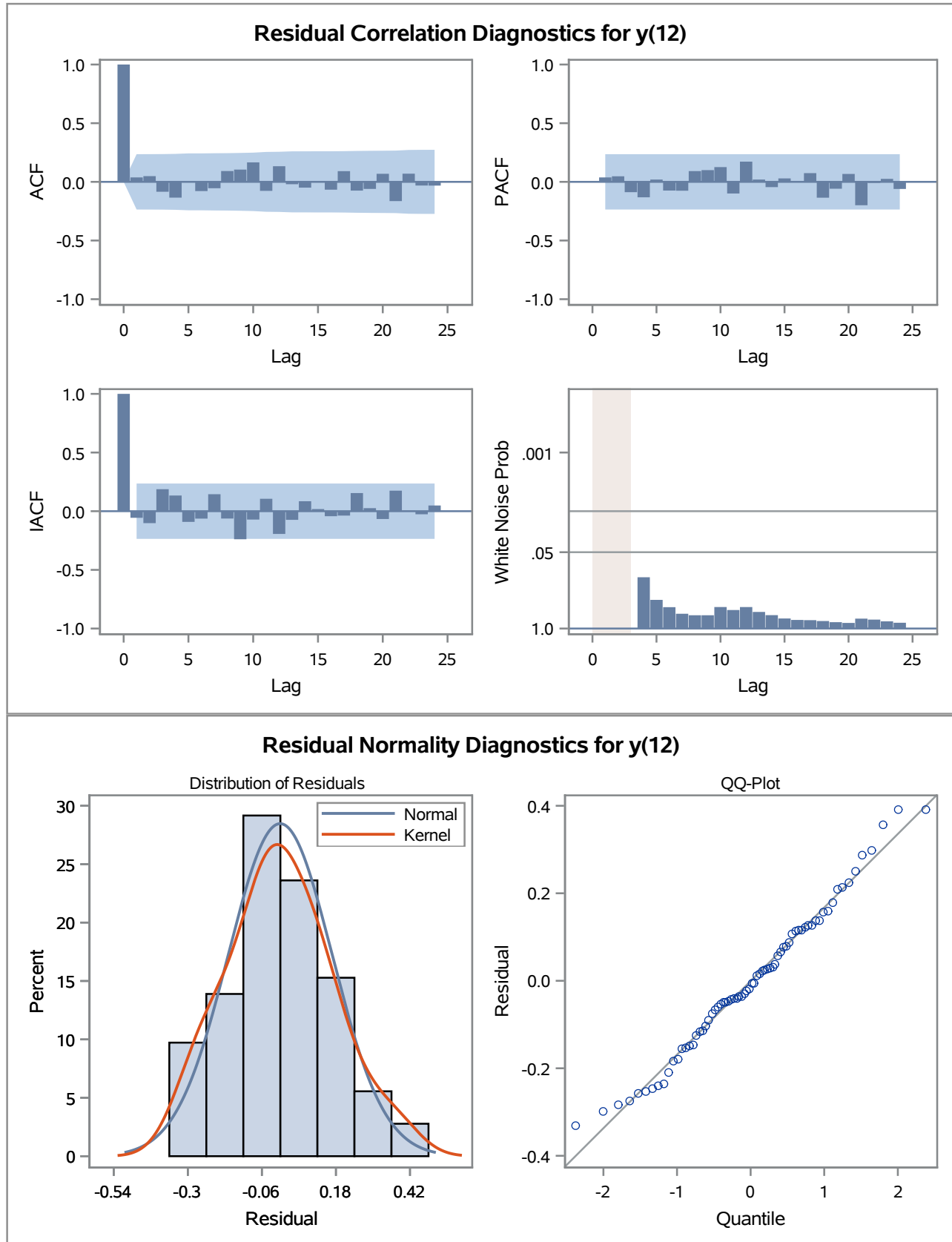
The ARIMA Procedure

Maximum Likelihood Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > t	Lag
MU	0.28562	0.03657	7.81	<.0001	0
MA1,1	0.52048	0.13629	3.82	0.0001	12
AR1,1	0.34695	0.11029	3.15	0.0017	1
AR1,2	0.35167	0.11058	3.18	0.0015	2

Constant Estimate	0.086079
Variance Estimate	0.029522
Std Error Estimate	0.17182
AIC	-41.0894
SBC	-31.9828
Number of Residuals	72

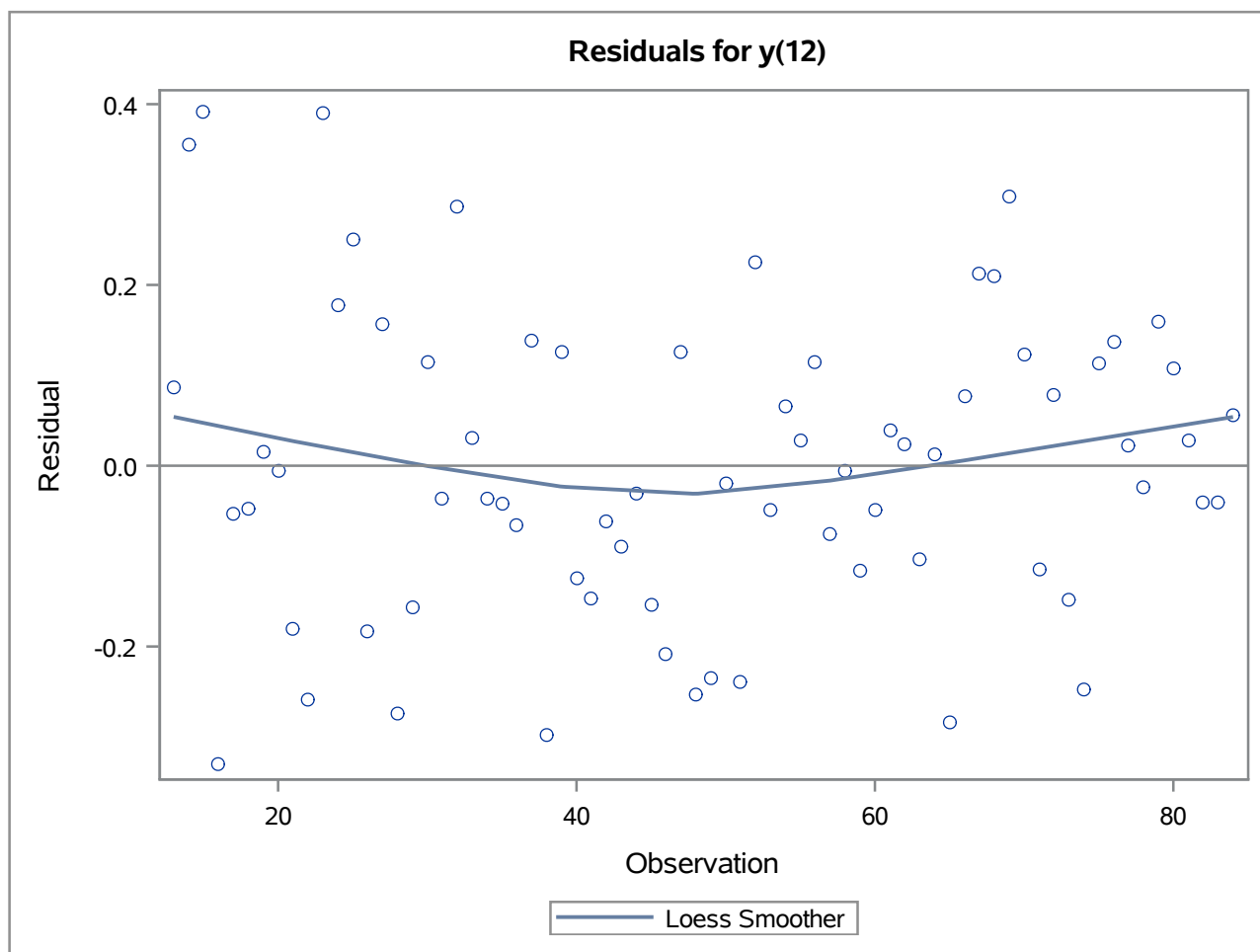
Correlations of Parameter Estimates				
Parameter	MU	MA1,1	AR1,1	AR1,2
MU	1.000	-0.063	0.043	0.046
MA1,1	-0.063	1.000	-0.062	0.167
AR1,1	0.043	-0.062	1.000	-0.524
AR1,2	0.046	0.167	-0.524	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	2.74	3	0.4341	0.038	0.049	-0.084	-0.134	0.002	-0.078
12	9.08	9	0.4300	-0.054	0.092	0.105	0.166	-0.076	0.133
18	11.10	15	0.7454	-0.020	-0.049	0.002	-0.066	0.091	-0.074
24	15.48	21	0.7983	-0.060	0.069	-0.163	0.070	-0.031	-0.031

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The ARIMA Procedure



Model for variable y	
Estimated Mean	0.285617
Period(s) of Differencing	12

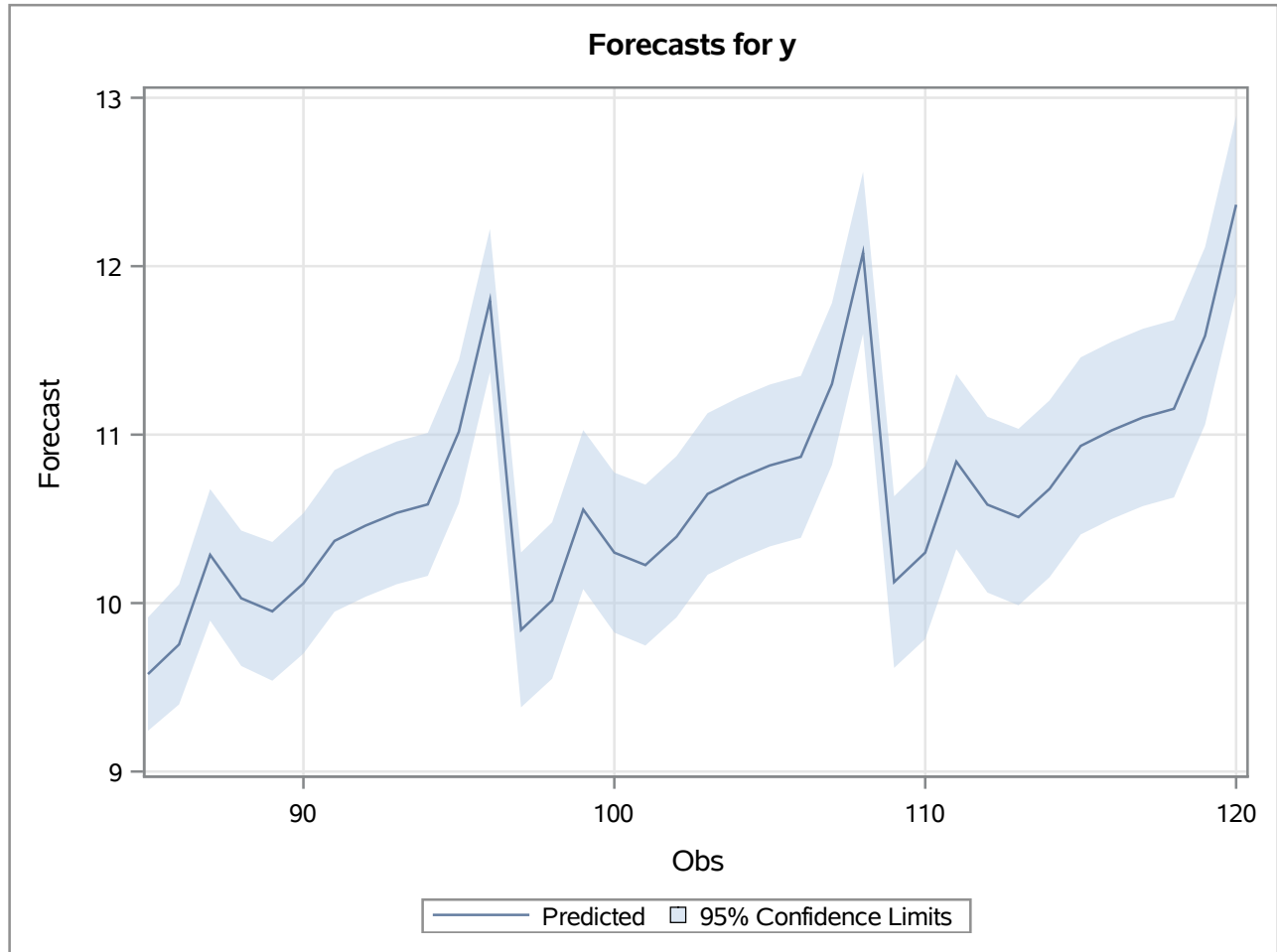
Autoregressive Factors	
Factor 1:	1 - 0.34695 B**(1) - 0.35167 B**(2)

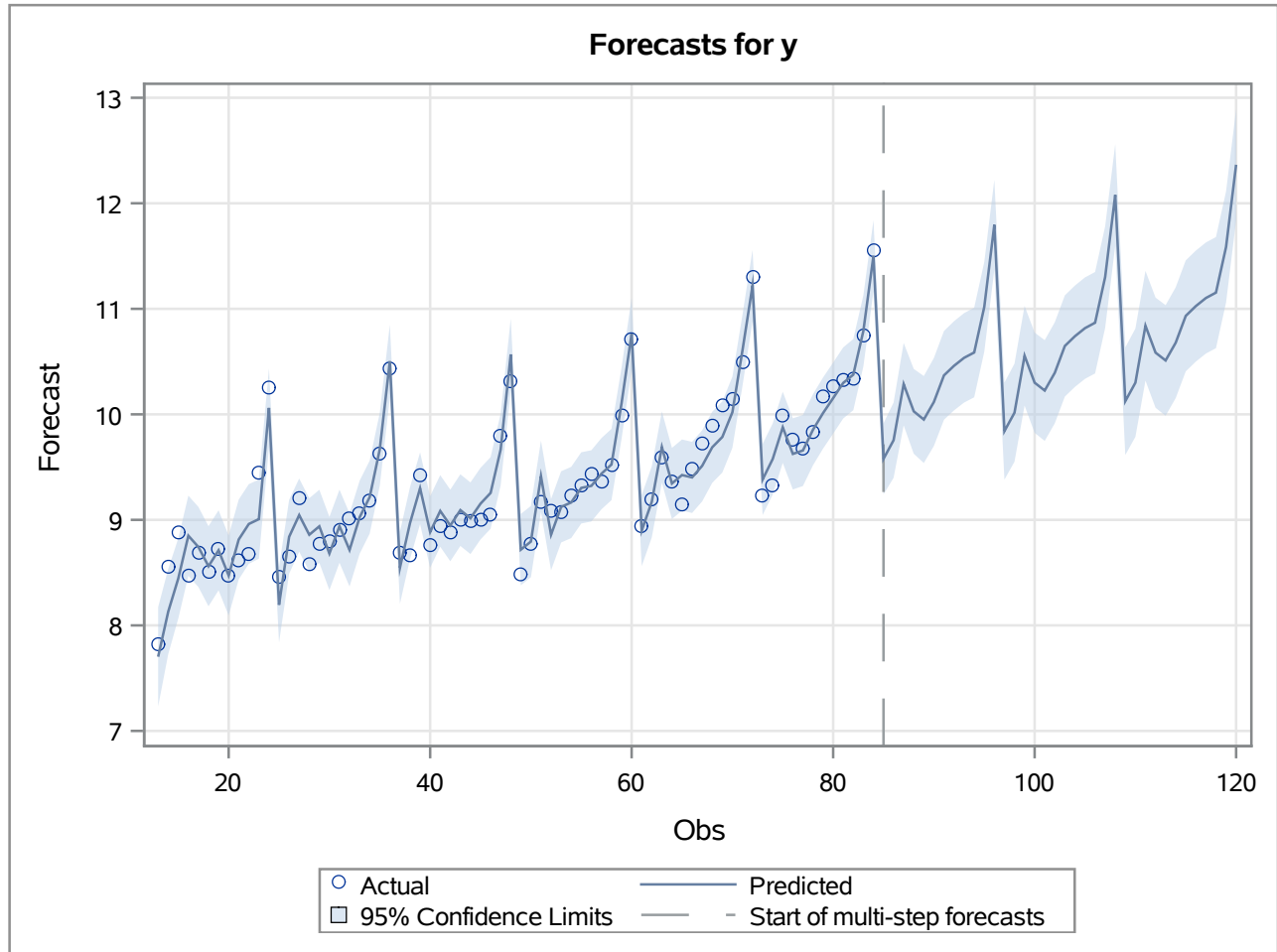
Moving Average Factors	
Factor 1:	1 - 0.52048 B**(12)

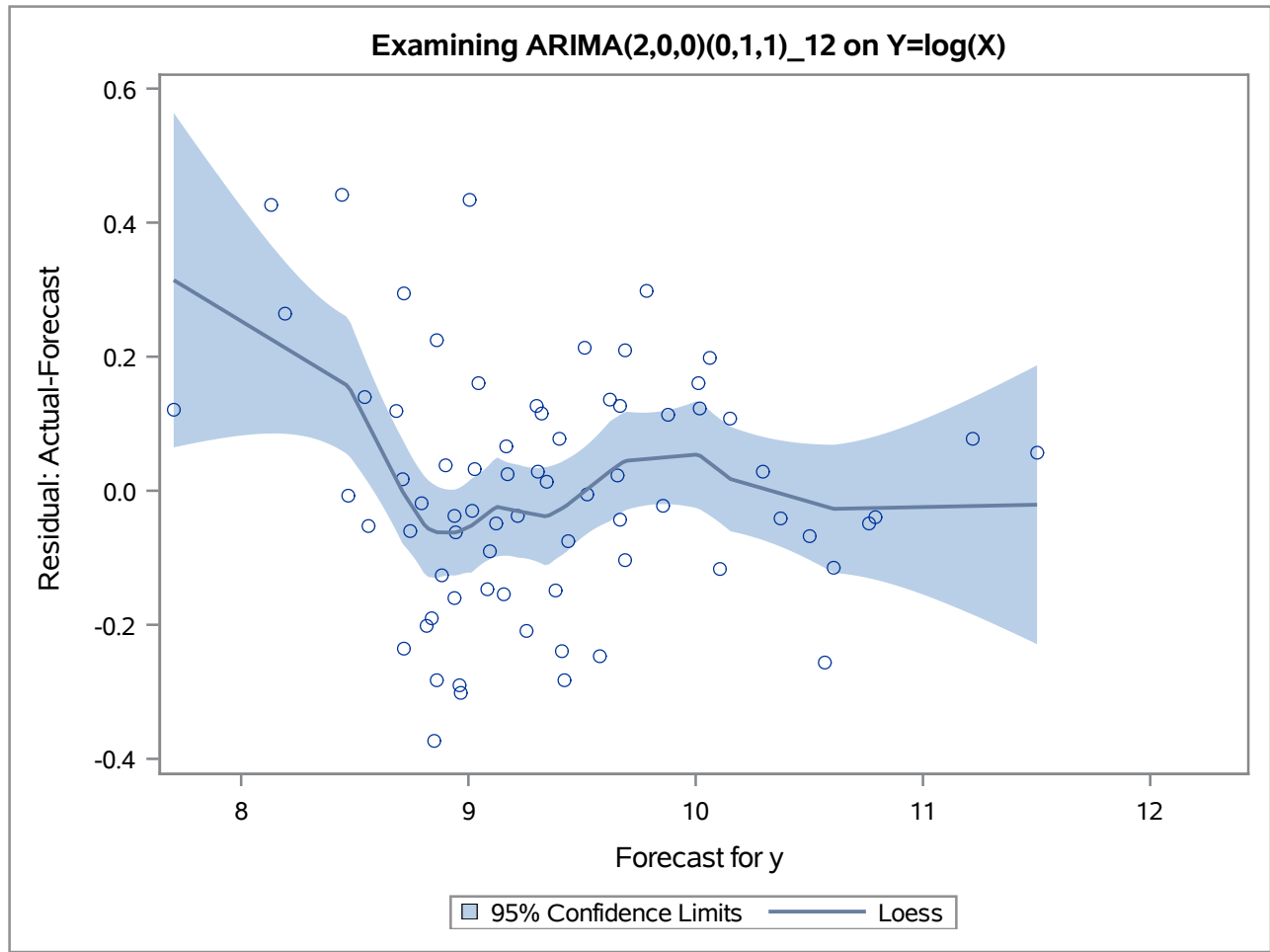
Forecasts for variable y				
Obs	Forecast	Std Error	95% Confidence Limits	
85	9.5783	0.1718	9.2415	9.9150
86	9.7548	0.1819	9.3984	10.1113
87	10.2862	0.1991	9.8959	10.6765
88	10.0286	0.2051	9.6267	10.4306
89	9.9509	0.2101	9.5391	10.3627

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Forecasts for variable y				
Obs	Forecast	Std Error	95% Confidence Limits	
90	10.1169	0.2127	9.7001	10.5338
91	10.3692	0.2145	9.9488	10.7895
92	10.4601	0.2155	10.0377	10.8825
93	10.5356	0.2162	10.1119	10.9593
94	10.5860	0.2166	10.1615	11.0105
95	11.0178	0.2168	10.5928	11.4428
96	11.7960	0.2170	11.3707	12.2213
97	9.8409	0.2346	9.3812	10.3006
98	10.0156	0.2370	9.5511	10.4800
99	10.5551	0.2409	10.0830	11.0272
100	10.2997	0.2424	9.8247	10.7747
101	10.2256	0.2436	9.7481	10.7030
102	10.3937	0.2442	9.9149	10.8724
103	10.6478	0.2447	10.1683	11.1274
104	10.7402	0.2450	10.2601	11.2203
105	10.8169	0.2451	10.3364	11.2973
106	10.8682	0.2452	10.3875	11.3488
107	11.3006	0.2453	10.8199	11.7814
108	12.0794	0.2453	11.5986	12.5603
109	10.1248	0.2600	9.6153	10.6343
110	10.2998	0.2619	9.7866	10.8131
111	10.8396	0.2651	10.3201	11.3592
112	10.5845	0.2663	10.0626	11.1064
113	10.5105	0.2673	9.9866	11.0344
114	10.6787	0.2678	10.1538	11.2037
115	10.9330	0.2682	10.4074	11.4587
116	11.0254	0.2684	10.4993	11.5515
117	11.1022	0.2686	10.5759	11.6286
118	11.1536	0.2686	10.6270	11.6801
119	11.5861	0.2687	11.0594	12.1127
120	12.3649	0.2687	11.8382	12.8916

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Back transform forecasts to the original scale

Obs	osforecast	osL95	osU95
85	14447.66	10316.79	20232.55
86	17237.35	12068.82	24619.32
87	29325.19	19848.99	43325.47
88	22666.62	15163.76	33881.82
89	20970.46	13892.25	31655.06
90	24759.10	16319.13	37564.07
91	31861.99	20928.03	48508.46
92	34894.57	22873.14	53234.09
93	37632.81	24635.63	57487.00
94	39577.87	25888.02	60507.04
95	60946.84	39845.23	93223.63
96	132719.24	86740.39	203070.29
97	18786.64	11863.01	29751.12
98	22371.71	14059.78	35597.55
99	38372.31	23932.93	61523.34
100	29723.89	18484.81	47796.50
101	27599.50	17122.36	44487.58
102	32651.68	20230.55	52699.13
103	42101.91	26062.84	68011.42
104	46173.52	28568.36	74627.80
105	49855.60	30836.14	80606.12
106	52479.61	32452.37	84866.22
107	80873.30	50003.91	130799.58
108	176211.75	108942.71	285017.51
109	24954.38	14991.97	41536.97
110	29727.07	17793.19	49665.00
111	51002.77	30336.25	85748.32
112	39516.52	23448.75	66594.39
113	36698.75	21733.50	61968.75
114	43422.67	25688.38	73400.02
115	55996.51	33102.98	94722.86
116	61417.24	36291.90	103937.15
117	66319.54	39177.86	112264.46
118	69813.92	41235.11	118199.84
119	107590.88	63540.96	182178.50
120	234433.74	138442.45	396982.11