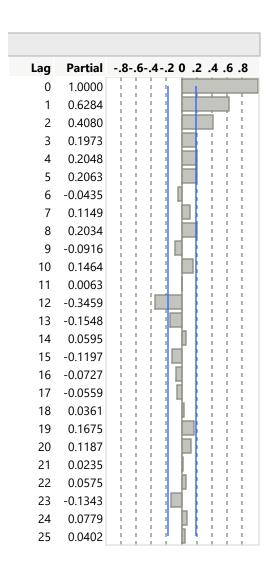


Mean	6.0573937
Std	2.3872088
N	114
Zero Mean ADF	0.8209779
Single Mean ADF	-3.471114
Trend ADF	-3.225744

#### **Time Series Basic Diagnostics**

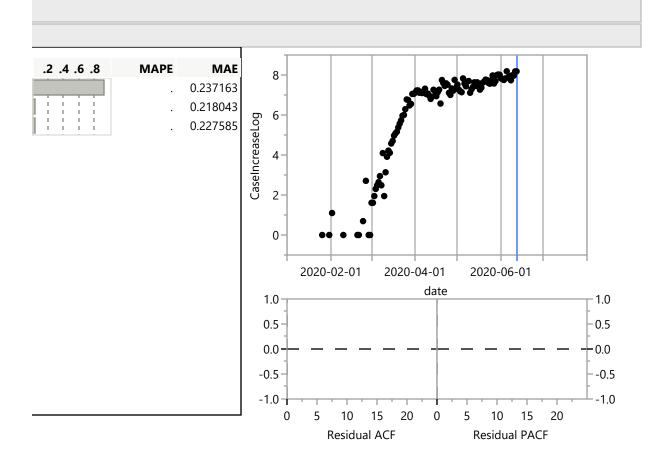
ime 3	eries Bas	ic Diagnostics		
Lag	AutoCorr	8642 0 .2 .4 .6 .8	Ljung-Box Q	p-Value
0	1.0000			
1	0.6284		46.2067	<.0001*
2	0.6418		94.8349	<.0001*
3	0.5946		136.961	<.0001*
4	0.6113		181.890	<.0001*
5	0.6245		229.208	<.0001*
6	0.5334		264.047	<.0001*
7	0.5806		305.706	<.0001*
8	0.6111		352.301	<.0001*
9	0.5223		386.660	<.0001*
10	0.5929		431.353	<.0001*
11	0.5213		466.248	<.0001*
12	0.4121		488.265	<.0001*
13	0.3956		508.758	<.0001*
14	0.4041		530.356	<.0001*
15	0.4003		551.758	<.0001*
16	0.3426		567.594	<.0001*
17	0.2785		578.167	<.0001*
18	0.3636		596.377	<.0001*
19	0.3562		614.034	<.0001*
20	0.3124		627.762	<.0001*
21	0.2880		639.554	<.0001*
22	0.2486		648.440	<.0001*
23	0.1839		653.354	<.0001*
24	0.2376		661.653	<.0001*
25	0.2001		667.599	<.0001*



#### **Model Comparison**

Report	Graph	Model	DF	Variance	AIC	SBC	<b>RSquare</b>	-2LogLH	Weights
<b>~</b>		<b>ARI</b> (1, 1)	104	0.1441364	97.671952	102.99883	0.976	93.671952	0.934554
<b>✓</b>		— ARI(20, 1)	85	0.1270273	104.14000	160.07222	0.981	62.139996	0.036820
<b>✓</b>		ARI(14, 1)	91	0.1368762	104.64346	144.59505	0.979	74.643464	0.028626

#### Difference: (1-B)^1 2.0 Mean 0.0771887 Std 0.4159142 1.0-Ν 106 0.5 0.0 Zero Mean ADF -15.12105 -0.5 Single Mean ADF -15.94364 -1.0 Trend ADF -17.01925 -1.5 -2.0 <del>-</del> 2020-07-01 2020-01-01 2020-03-01 2020-05-01 date

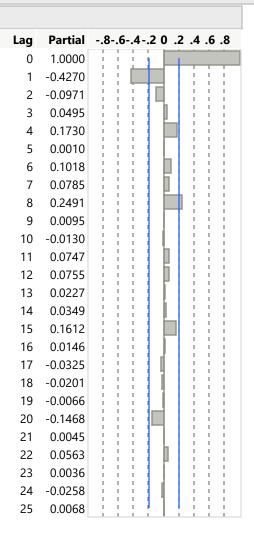


### Difference: (1-B)^1

Lag	AutoCorr	8642 0 .2 .4 .6 .8	Ljung-Box Q	p-Value
0	1.0000			
1	-0.4270		19.8782	<.0001*
2	0.1029		21.0442	<.0001*
3	0.0334		21.1678	<.0001*
4	0.0956		22.1927	0.0002*
5	-0.1069		23.4871	0.0003*
6	0.1461		25.9314	0.0002*
7	-0.0210		25.9824	0.0005*
8	0.1780		29.6836	0.0002*
9	-0.1582		32.6368	0.0002*
10	0.1065		33.9904	0.0002*
11	0.0526		34.3238	0.0003*
12	0.0216		34.3805	0.0006*
13	-0.0279		34.4763	0.0010*
14	0.1125		36.0523	0.0010*
15	0.0738		36.7381	0.0014*
16	-0.0678		37.3228	0.0019*
17	0.0191		37.3698	0.0030*
18	0.0704		38.0145	0.0039*
19	-0.0064		38.0199	0.0059*
20	-0.0980		39.2991	0.0061*
21	0.1618		42.8233	0.0033*
22	0.0059		42.8280	0.0050*
23	-0.0273		42.9305	0.0071*
24	-0.0116		42.9491	0.0101*
25	0.0859		43.9922	0.0109*

# Model: ARI(20, 1)

model Summary			
DF	85	Stable	Yes
Sum of Squared Errors	10.7973172	Invertible	Yes
Variance Estimate	0.12702726		
Standard Deviation	0.35640884		
Akaike's 'A' Information Criterion	104.139996		
Schwarz's Bayesian Criterion	160.072217		
RSquare	0.98068663		
RSquare Adj	0.97648808		
MAPE			
MAE	0.21804309		
-2LogLikelihood	62.139996		

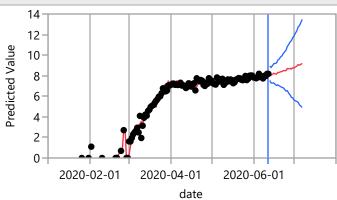


### Model: ARI(20, 1)

_	
Parameter	Fatime at a a
Parameter	FETIMATAS

						Constant	
Term	Lag	Estimate	Std Error	t Ratio	Prob> t	Estimate	Mu
AR1	1	-0.5785053	0.0917364	-6.31	<.0001*	0.02092414	0.25252603
AR2	2	-0.2129937	0.1091890	-1.95	0.0544		
AR3	3	-0.0335371	0.1136334	-0.30	0.7686		
AR4	4	0.0290866	0.1147851	0.25	0.8006		
AR5	5	0.0264414	0.1114953	0.24	0.8131		
AR6	6	0.1757144	0.1110775	1.58	0.1174		
AR7	7	0.1809534	0.1140349	1.59	0.1163		
AR8	8	0.2556063	0.1118075	2.29	0.0247*		
AR9	9	0.0791233	0.1139661	0.69	0.4894		
AR10	10	0.1724234	0.1281755	1.35	0.1821		
AR11	11	0.2788228	0.1327713	2.10	0.0387*		
AR12	12	0.2679933	0.1307228	2.05	0.0434*		
AR13	13	0.2518015	0.1263203	1.99	0.0494*		
AR14	14	0.3088668	0.1162126	2.66	0.0094*		
AR15	15	0.2683974	0.1171638	2.29	0.0245*		
AR16	16	0.0829834	0.1207485	0.69	0.4938		
AR17	17	-0.0431203	0.1228670	-0.35	0.7265		
AR18	18	-0.0784065	0.1222014	-0.64	0.5228		
AR19	19	-0.1586928	0.1459050	-1.09	0.2798		
AR20	20	-0.3558178	0.1267164	-2.81	0.0062*		
Intercept	0	0.2525260	0.1630974	1.55	0.1253		

#### Forecast



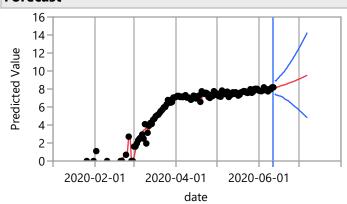
# Model: ARI(14, 1)

Model Summary			
DF	91	Stable	Yes
Sum of Squared Errors	12.4557342	Invertible	Yes
Variance Estimate	0.1368762		
Standard Deviation	0.36996784		
Akaike's 'A' Information Criterion	104.643464		
Schwarz's Bayesian Criterion	144.59505		
RSquare	0.9794743		
RSquare Adj	0.97654205		
MAPE			
MAE	0.22758455		
-2LogLikelihood	74.643464		

Parame	ter E	stim	ates

						Constant	
Term	Lag	Estimate	Std Error	t Ratio	Prob> t	Estimate	Mu
AR1	1	-0.5529755	0.0964120	-5.74	<.0001*	0.0248806	0.34271157
AR2	2	-0.1716563	0.1117681	-1.54	0.1281		
AR3	3	0.0389356	0.1136295	0.34	0.7326		
AR4	4	0.1010460	0.1168326	0.86	0.3894		
AR5	5	0.0283639	0.1162431	0.24	0.8078		
AR6	6	0.1794313	0.1169485	1.53	0.1284		
AR7	7	0.2601576	0.1168773	2.23	0.0285*		
AR8	8	0.3247427	0.1124805	2.89	0.0049*		
AR9	9	0.0802479	0.1113568	0.72	0.4730		
AR10	10	0.1156620	0.1193860	0.97	0.3352		
AR11	11	0.1844629	0.1254465	1.47	0.1449		
AR12	12	0.1637635	0.1284168	1.28	0.2055		
AR13	13	0.1000975	0.1256446	0.80	0.4277		
AR14	14	0.0751218	0.1051792	0.71	0.4769		
Intercept	0	0.3427116	0.2147797	1.60	0.1140		

#### Forecast



#### Model: ARI(1, 1)

Model Summary								
DF	104	Stable	Yes					
Sum of Squared Errors	14.990183	Invertible	Yes					
Variance Estimate	0.14413638							
Standard Deviation	0.37965297							
Akaike's 'A' Information Criterion	97.6719516							
Schwarz's Bayesian Criterion	102.99883							
RSquare	0.97553015							
RSquare Adj	0.9753097							
MAPE								
MAE	0.23716256							
-2LogLikelihood	93.6719516							

# Parameter Estimates Term Lag Estimate Std Error t Ratio Prob>|t| Estimate Mu AR1 1 -0.4234418 0.0872822 -4.85 <.0001\*</td> 0.11102155 0.07799514 Intercept 0 0.0779951 0.0257955 3.02 0.0031\*

