

# Emilia Romagna Grand Prix, 2021

## Forecasting Antonio Giovinazzi's Next 5 Lap Times

Nathan Jones 2022

Name of Variable = time	
Period(s) of Differencing	1,1
Mean of Working Series	-0.31917
Standard Deviation	20.43628
Number of Observations	60
Observation(s) eliminated by differencing	2

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	15.74	6	0.0152	-0.459	-0.023	0.036	-0.108	-0.033	0.148
12	16.34	12	0.1763	-0.025	-0.031	-0.003	0.041	-0.053	-0.043

Variance Estimate	417.7436
Std Error Estimate	20.43878
AIC	532.3647
SBC	532.3647
Number of Residuals	60

\* AIC and SBC do not include log determinant.

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	15.74	6	0.0152	-0.458	-0.023	0.036	-0.108	-0.033	0.148
12	16.33	12	0.1765	-0.025	-0.031	-0.003	0.041	-0.053	-0.043
18	18.64	18	0.4146	0.129	-0.098	0.043	-0.023	0.011	-0.001
24	19.17	24	0.7430	-0.003	0.016	-0.052	0.043	0.024	0.002

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

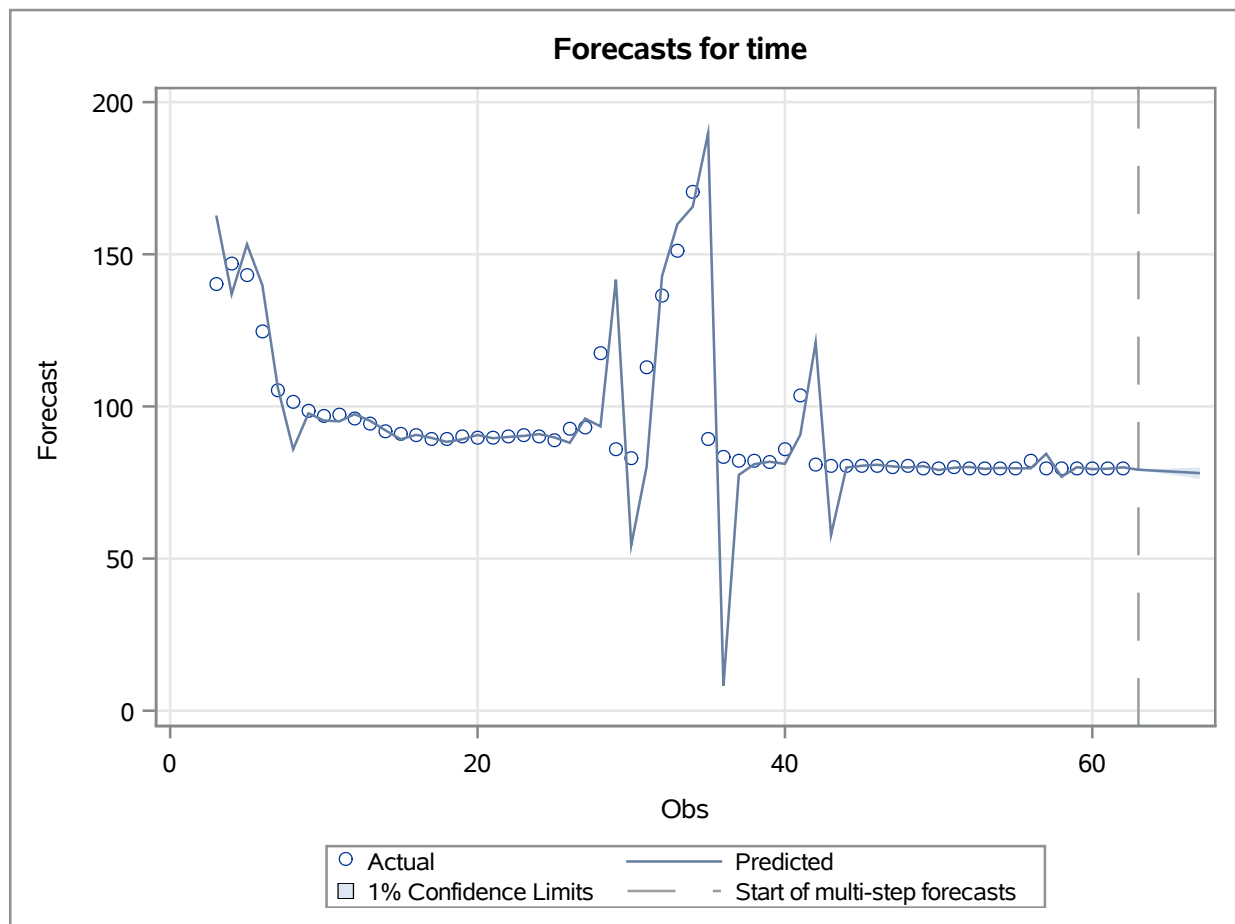
No mean term in this model.

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Forecasts for variable time				
Obs	Forecast	Std Error	1% Confidence Limits	
63	79.2010	20.4388	78.9448	79.4572
64	78.9190	45.7025	78.3462	79.4918
65	78.6370	76.4749	77.6785	79.5955
66	78.3550	111.9478	76.9519	79.7581
67	78.0730	151.5780	76.1732	79.9728



Outlier Detection Summary	
Maximum number searched	2
Number found	2
Significance used	0.05

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Outlier Details				
Obs	Type	Estimate	Chi-Square	Approx Prob>ChiSq
35	Shift	-87.84150	6882.16	<.0001
28	Additive	27.35117	2001.70	<.0001