水生根茎类

SARIMAX Results

==============================================================================

Dep. Variable: 水生根茎类 No. Observations: 147

Model: ARIMA(1, 1, 6) Log Likelihood -215.463

Date: Sun, 10 Sep 2023 AIC 446.926

Time: 02:32:59 BIC 470.795

Sample: 02-04-2023 HQIC 456.625

- 06-30-2023

Covariance Type: opg

==============================================================================

coef std err z P>|z| [0.025 0.975]

------------------------------------------------------------------------------

ar.L1 -0.0073 0.309 -0.024 0.981 -0.612 0.598

ma.L1 -0.5761 0.307 -1.876 0.061 -1.178 0.026

ma.L2 0.0591 0.207 0.286 0.775 -0.346 0.464

ma.L3 -0.1262 0.078 -1.612 0.107 -0.280 0.027

ma.L4 0.3455 0.095 3.634 0.000 0.159 0.532

ma.L5 -0.1194 0.162 -0.736 0.462 -0.437 0.199

ma.L6 -0.2988 0.113 -2.637 0.008 -0.521 -0.077

sigma2 1.1077 0.054 20.618 0.000 1.002 1.213

===================================================================================

Ljung-Box (L1) (Q): 0.10 Jarque-Bera (JB): 925.48

Prob(Q): 0.76 Prob(JB): 0.00

Heteroskedasticity (H): 0.32 Skew: 1.15

Prob(H) (two-sided): 0.00 Kurtosis: 15.12

===================================================================================

Warnings:

[1] Covariance matrix calculated using the outer product of gradients (complex-step).

作为期7天的预测:

12.009405

11.304331

11.279290

11.472212

11.304427

11.257793

11.258136

Freq: D, Name: predicted\_mean, dtype: float64

残差序列的白噪声检验结果为： lb\_stat lb\_pvalue

1 0.000452 0.983039

花叶类

SARIMAX Results

==============================================================================

Dep. Variable: 花叶类 No. Observations: 147

Model: ARIMA(3, 1, 0) Log Likelihood -204.701

Date: Sun, 10 Sep 2023 AIC 417.401

Time: 02:32:59 BIC 429.336

Sample: 02-04-2023 HQIC 422.250

- 06-30-2023

Covariance Type: opg

==============================================================================

coef std err z P>|z| [0.025 0.975]

------------------------------------------------------------------------------

ar.L1 -0.5905 0.057 -10.275 0.000 -0.703 -0.478

ar.L2 -0.3508 0.054 -6.464 0.000 -0.457 -0.244

ar.L3 -0.0144 0.061 -0.236 0.813 -0.134 0.105

sigma2 0.9637 0.072 13.316 0.000 0.822 1.106

===================================================================================

Ljung-Box (L1) (Q): 0.01 Jarque-Bera (JB): 52.87

Prob(Q): 0.94 Prob(JB): 0.00

Heteroskedasticity (H): 0.20 Skew: -0.21

Prob(H) (two-sided): 0.00 Kurtosis: 5.92

===================================================================================

Warnings:

[1] Covariance matrix calculated using the outer product of gradients (complex-step).

作为期7天的预测:

3.577892

3.473293

3.503712

3.521269

3.501733

3.506672

3.510357

Freq: D, Name: predicted\_mean, dtype: float64

残差序列的白噪声检验结果为： lb\_stat lb\_pvalue

1 0.067196 0.795464

花菜类

SARIMAX Results

==============================================================================

Dep. Variable: 花菜类 No. Observations: 147

Model: ARIMA(3, 1, 1) Log Likelihood -112.077

Date: Sun, 10 Sep 2023 AIC 234.154

Time: 02:32:59 BIC 249.072

Sample: 02-04-2023 HQIC 240.216

- 06-30-2023

Covariance Type: opg

==============================================================================

coef std err z P>|z| [0.025 0.975]

------------------------------------------------------------------------------

ar.L1 -0.5578 0.386 -1.446 0.148 -1.314 0.198

ar.L2 -0.3144 0.160 -1.966 0.049 -0.628 -0.001

ar.L3 0.1619 0.162 1.001 0.317 -0.155 0.479

ma.L1 0.3389 0.397 0.853 0.394 -0.440 1.118

sigma2 0.2709 0.027 9.971 0.000 0.218 0.324

===================================================================================

Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 11.55

Prob(Q): 0.96 Prob(JB): 0.00

Heteroskedasticity (H): 0.42 Skew: -0.11

Prob(H) (two-sided): 0.00 Kurtosis: 4.36

===================================================================================

Warnings:

[1] Covariance matrix calculated using the outer product of gradients (complex-step).

作为期7天的预测:

7.735966

7.940142

7.770169

7.788267

7.864665

7.788841

7.810048

Freq: D, Name: predicted\_mean, dtype: float64

残差序列的白噪声检验结果为： lb\_stat lb\_pvalue

1 4.207873 0.040237

茄类

SARIMAX Results

==============================================================================

Dep. Variable: 茄类 No. Observations: 147

Model: ARIMA(3, 1, 0) Log Likelihood -65.490

Date: Sun, 10 Sep 2023 AIC 138.980

Time: 02:32:59 BIC 150.914

Sample: 02-04-2023 HQIC 143.829

- 06-30-2023

Covariance Type: opg

==============================================================================

coef std err z P>|z| [0.025 0.975]

------------------------------------------------------------------------------

ar.L1 -0.0929 0.071 -1.310 0.190 -0.232 0.046

ar.L2 -0.1366 0.078 -1.755 0.079 -0.289 0.016

ar.L3 0.1024 0.077 1.339 0.181 -0.048 0.252

sigma2 0.1435 0.014 10.302 0.000 0.116 0.171

===================================================================================

Ljung-Box (L1) (Q): 0.04 Jarque-Bera (JB): 26.57

Prob(Q): 0.84 Prob(JB): 0.00

Heteroskedasticity (H): 0.51 Skew: 0.56

Prob(H) (two-sided): 0.02 Kurtosis: 4.76

===================================================================================

Warnings:

[1] Covariance matrix calculated using the outer product of gradients (complex-step).

作为期7天的预测:

4.417397

4.412579

4.403462

4.406493

4.406963

4.405571

4.405947

Freq: D, Name: predicted\_mean, dtype: float64

残差序列的白噪声检验结果为： lb\_stat lb\_pvalue

1 0.095135 0.757748

辣椒类

SARIMAX Results

==============================================================================

Dep. Variable: 辣椒类 No. Observations: 147

Model: ARIMA(4, 1, 2) Log Likelihood -141.620

Date: Sun, 10 Sep 2023 AIC 297.240

Time: 02:33:00 BIC 318.126

Sample: 02-04-2023 HQIC 305.726

- 06-30-2023

Covariance Type: opg

==============================================================================

coef std err z P>|z| [0.025 0.975]

------------------------------------------------------------------------------

ar.L1 -0.5068 0.082 -6.216 0.000 -0.667 -0.347

ar.L2 0.4750 0.097 4.879 0.000 0.284 0.666

ar.L3 0.1628 0.096 1.693 0.090 -0.026 0.351

ar.L4 0.1807 0.090 2.015 0.044 0.005 0.357

ma.L1 -0.0034 1257.067 -2.67e-06 1.000 -2463.808 2463.802

ma.L2 -0.9966 1252.842 -0.001 0.999 -2456.521 2454.528

sigma2 0.3939 495.089 0.001 0.999 -969.963 970.750

===================================================================================

Ljung-Box (L1) (Q): 0.05 Jarque-Bera (JB): 49.25

Prob(Q): 0.82 Prob(JB): 0.00

Heteroskedasticity (H): 0.25 Skew: 0.15

Prob(H) (two-sided): 0.00 Kurtosis: 5.83

===================================================================================

Warnings:

[1] Covariance matrix calculated using the outer product of gradients (complex-step).

作为期7天的预测:

5.995372

6.001034

6.113805

5.974080

6.147161

6.012453

6.160579

Freq: D, Name: predicted\_mean, dtype: float64

残差序列的白噪声检验结果为： lb\_stat lb\_pvalue

1 0.288439 0.591222

食用菌

SARIMAX Results

==============================================================================

Dep. Variable: 食用菌 No. Observations: 147

Model: ARIMA(1, 1, 1) Log Likelihood -158.181

Date: Sun, 10 Sep 2023 AIC 322.362

Time: 02:33:00 BIC 331.313

Sample: 02-04-2023 HQIC 325.999

- 06-30-2023

Covariance Type: opg

==============================================================================

coef std err z P>|z| [0.025 0.975]

------------------------------------------------------------------------------

ar.L1 0.1130 0.107 1.058 0.290 -0.096 0.322

ma.L1 -0.8528 0.095 -8.931 0.000 -1.040 -0.666

sigma2 0.5073 0.013 38.499 0.000 0.481 0.533

===================================================================================

Ljung-Box (L1) (Q): 0.02 Jarque-Bera (JB): 18904.96

Prob(Q): 0.90 Prob(JB): 0.00

Heteroskedasticity (H): 5.54 Skew: 6.00

Prob(H) (two-sided): 0.00 Kurtosis: 57.44

===================================================================================

Warnings:

[1] Covariance matrix calculated using the outer product of gradients (complex-step).

作为期7天的预测:

4.740679

4.753981

4.755485

4.755655

4.755674

4.755676

4.755677

Freq: D, Name: predicted\_mean, dtype: float64

残差序列的白噪声检验结果为： lb\_stat lb\_pvalue

1 0.045248 0.831549