水生根茎类

SARIMAX Results

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

Dep. Variable: 水生根茎类 No. Observations: 151

Model: ARIMA(1, 1, 6) Log Likelihood -219.102

Date: Sun, 10 Sep 2023 AIC 454.205

Time: 02:01:28 BIC 478.290

Sample: 01-26-2023 HQIC 463.990

- 06-25-2023

Covariance Type: opg

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

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

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

ar.L1 -0.0210 0.295 -0.071 0.943 -0.600 0.558

ma.L1 -0.5680 0.294 -1.932 0.053 -1.144 0.008

ma.L2 0.0441 0.199 0.221 0.825 -0.346 0.434

ma.L3 -0.1248 0.074 -1.696 0.090 -0.269 0.019

ma.L4 0.3391 0.090 3.762 0.000 0.162 0.516

ma.L5 -0.1154 0.152 -0.760 0.448 -0.413 0.182

ma.L6 -0.3064 0.108 -2.840 0.005 -0.518 -0.095

sigma2 1.0749 0.051 21.282 0.000 0.976 1.174

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

Ljung-Box (L1) (Q): 0.08 Jarque-Bera (JB): 993.65

Prob(Q): 0.78 Prob(JB): 0.00

Heteroskedasticity (H): 0.34 Skew: 1.27

Prob(H) (two-sided): 0.00 Kurtosis: 15.35

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

Warnings:

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

作为期7天的预测:

2023-06-26 10.845967

2023-06-27 10.754543

2023-06-28 10.789919

2023-06-29 11.053678

2023-06-30 10.892942

2023-07-01 10.672000

2023-07-02 10.676636

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 0.149947 0.698586

花叶类

SARIMAX Results

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

Dep. Variable: 花叶类 No. Observations: 151

Model: ARIMA(3, 1, 0) Log Likelihood -211.153

Date: Sun, 10 Sep 2023 AIC 430.307

Time: 02:01:28 BIC 442.349

Sample: 01-26-2023 HQIC 435.199

- 06-25-2023

Covariance Type: opg

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

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

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

ar.L1 -0.6037 0.057 -10.526 0.000 -0.716 -0.491

ar.L2 -0.3496 0.055 -6.387 0.000 -0.457 -0.242

ar.L3 -0.0183 0.061 -0.300 0.764 -0.138 0.101

sigma2 0.9747 0.074 13.260 0.000 0.831 1.119

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

Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 48.23

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

Heteroskedasticity (H): 0.60 Skew: -0.18

Prob(H) (two-sided): 0.07 Kurtosis: 5.75

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

Warnings:

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

作为期7天的预测:

2023-06-26 3.967476

2023-06-27 4.106205

2023-06-28 4.101167

2023-06-29 4.059789

2023-06-30 4.083986

2023-07-01 4.083937

2023-07-02 4.076266

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 0.063093 0.801672

花菜类

SARIMAX Results

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

Dep. Variable: 花菜类 No. Observations: 151

Model: ARIMA(3, 1, 1) Log Likelihood -117.281

Date: Sun, 10 Sep 2023 AIC 244.561

Time: 02:01:28 BIC 259.614

Sample: 01-26-2023 HQIC 250.677

- 06-25-2023

Covariance Type: opg

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

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

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

ar.L1 -0.6137 0.539 -1.138 0.255 -1.671 0.443

ar.L2 -0.3122 0.180 -1.731 0.083 -0.666 0.041

ar.L3 0.0683 0.190 0.360 0.719 -0.304 0.440

ma.L1 0.3829 0.537 0.713 0.476 -0.670 1.436

sigma2 0.2791 0.024 11.688 0.000 0.232 0.326

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

Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 44.00

Prob(Q): 0.95 Prob(JB): 0.00

Heteroskedasticity (H): 0.43 Skew: -0.18

Prob(H) (two-sided): 0.00 Kurtosis: 5.63

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

Warnings:

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

作为期7天的预测:

2023-06-26 8.585531

2023-06-27 8.537659

2023-06-28 8.532513

2023-06-29 8.556799

2023-06-30 8.540233

2023-07-01 8.542466

2023-07-02 8.547926

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 0.012521 0.910906

茄类

SARIMAX Results

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

Dep. Variable: 茄类 No. Observations: 151

Model: ARIMA(3, 1, 0) Log Likelihood -67.099

Date: Sun, 10 Sep 2023 AIC 142.199

Time: 02:01:28 BIC 154.241

Sample: 01-26-2023 HQIC 147.091

- 06-25-2023

Covariance Type: opg

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

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

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

ar.L1 -0.0835 0.071 -1.184 0.236 -0.222 0.055

ar.L2 -0.1383 0.078 -1.781 0.075 -0.290 0.014

ar.L3 0.0994 0.076 1.306 0.192 -0.050 0.249

sigma2 0.1432 0.014 10.423 0.000 0.116 0.170

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

Ljung-Box (L1) (Q): 0.04 Jarque-Bera (JB): 26.38

Prob(Q): 0.85 Prob(JB): 0.00

Heteroskedasticity (H): 0.56 Skew: 0.54

Prob(H) (two-sided): 0.05 Kurtosis: 4.75

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

Warnings:

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

作为期7天的预测:

2023-06-26 4.850017

2023-06-27 4.868697

2023-06-28 4.840321

2023-06-29 4.842595

2023-06-30 4.848185

2023-07-01 4.844584

2023-07-02 4.844337

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 0.060457 0.805775

辣椒类

SARIMAX Results

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

Dep. Variable: 辣椒类 No. Observations: 151

Model: ARIMA(4, 1, 2) Log Likelihood -152.714

Date: Sun, 10 Sep 2023 AIC 319.428

Time: 02:01:28 BIC 340.502

Sample: 01-26-2023 HQIC 327.990

- 06-25-2023

Covariance Type: opg

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

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

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

ar.L1 -0.5523 0.078 -7.049 0.000 -0.706 -0.399

ar.L2 0.4547 0.092 4.947 0.000 0.275 0.635

ar.L3 0.2036 0.086 2.368 0.018 0.035 0.372

ar.L4 0.1965 0.086 2.280 0.023 0.028 0.365

ma.L1 -0.0015 0.318 -0.005 0.996 -0.625 0.622

ma.L2 -0.9985 0.276 -3.619 0.000 -1.539 -0.458

sigma2 0.4342 0.104 4.184 0.000 0.231 0.638

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

Ljung-Box (L1) (Q): 0.03 Jarque-Bera (JB): 36.52

Prob(Q): 0.87 Prob(JB): 0.00

Heteroskedasticity (H): 0.23 Skew: -0.04

Prob(H) (two-sided): 0.00 Kurtosis: 5.42

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

Warnings:

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

[2] Covariance matrix is singular or near-singular, with condition number 3.75e+16. Standard errors may be unstable.

作为期7天的预测:

2023-06-26 6.074131

2023-06-27 6.219785

2023-06-28 6.039923

2023-06-29 6.165176

2023-06-30 6.047348

2023-07-01 6.161384

2023-07-02 6.034982

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 1.108586 0.29239

食用菌

SARIMAX Results

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

Dep. Variable: 食用菌 No. Observations: 151

Model: ARIMA(1, 1, 1) Log Likelihood -161.989

Date: Sun, 10 Sep 2023 AIC 329.979

Time: 02:01:28 BIC 339.011

Sample: 01-26-2023 HQIC 333.648

- 06-25-2023

Covariance Type: opg

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

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

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

ar.L1 0.1257 0.105 1.196 0.232 -0.080 0.332

ma.L1 -0.8576 0.095 -9.075 0.000 -1.043 -0.672

sigma2 0.5038 0.013 37.723 0.000 0.478 0.530

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

Ljung-Box (L1) (Q): 0.01 Jarque-Bera (JB): 19808.05

Prob(Q): 0.93 Prob(JB): 0.00

Heteroskedasticity (H): 5.05 Skew: 6.01

Prob(H) (two-sided): 0.00 Kurtosis: 58.00

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

Warnings:

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

作为期7天的预测:

2023-06-26 4.872999

2023-06-27 4.877616

2023-06-28 4.878196

2023-06-29 4.878269

2023-06-30 4.878278

2023-07-01 4.878280

2023-07-02 4.878280

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 0.246985 0.619206