Column: India\_8

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3609  
Model: ARIMA(0, 1, 0) Log Likelihood -10159.831  
Date: Sat, 18 May 2024 AIC 20321.661  
Time: 01:49:10 BIC 20327.852  
Sample: 0 HQIC 20323.867  
 - 3609   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 16.3459 0.077 213.522 0.000 16.196 16.496  
===================================================================================  
Ljung-Box (L1) (Q): 50.39 Jarque-Bera (JB): 354461.20  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.34 Skew: 0.47  
Prob(H) (two-sided): 0.00 Kurtosis: 51.55  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(3,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3609  
Model: ARIMA(3, 1, 0) Log Likelihood -10059.640  
Date: Sat, 18 May 2024 AIC 20135.279  
Time: 01:49:10 BIC 20184.806  
Sample: 0 HQIC 20152.928  
 - 3609   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 0.0209 0.040 0.527 0.598 -0.057 0.099  
x2 -0.0023 0.000 -5.568 0.000 -0.003 -0.001  
x3 -0.0243 0.142 -0.172 0.864 -0.302 0.253  
x4 1.4533 0.224 6.487 0.000 1.014 1.892  
ar.L1 0.0838 0.008 10.737 0.000 0.068 0.099  
ar.L2 0.1211 0.009 13.781 0.000 0.104 0.138  
ar.L3 0.0323 0.010 3.108 0.002 0.012 0.053  
sigma2 15.4611 0.101 153.508 0.000 15.264 15.659  
===================================================================================  
Ljung-Box (L1) (Q): 0.02 Jarque-Bera (JB): 296425.56  
Prob(Q): 0.88 Prob(JB): 0.00  
Heteroskedasticity (H): 0.32 Skew: -0.05  
Prob(H) (two-sided): 0.00 Kurtosis: 47.40  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: India\_36

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3503  
Model: ARIMA(0, 1, 0) Log Likelihood -11624.264  
Date: Sat, 18 May 2024 AIC 23250.528  
Time: 01:49:10 BIC 23256.689  
Sample: 0 HQIC 23252.727  
 - 3503   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 44.7358 0.112 399.653 0.000 44.516 44.955  
===================================================================================  
Ljung-Box (L1) (Q): 7.85 Jarque-Bera (JB): 4776521.88  
Prob(Q): 0.01 Prob(JB): 0.00  
Heteroskedasticity (H): 0.43 Skew: 6.82  
Prob(H) (two-sided): 0.00 Kurtosis: 183.41  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(3,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3503  
Model: ARIMA(3, 1, 0) Log Likelihood -11426.118  
Date: Sat, 18 May 2024 AIC 22870.235  
Time: 01:49:10 BIC 22925.685  
Sample: 0 HQIC 22890.024  
 - 3503   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.4766 0.060 -7.937 0.000 -0.594 -0.359  
x2 -0.0095 0.001 -15.859 0.000 -0.011 -0.008  
x3 -0.5417 0.288 -1.882 0.060 -1.106 0.022  
x4 4.3366 0.439 9.882 0.000 3.477 5.197  
x5 -0.0023 0.005 -0.510 0.610 -0.011 0.007  
ar.L1 0.0223 0.009 2.527 0.011 0.005 0.040  
ar.L2 0.0170 0.009 1.911 0.056 -0.000 0.034  
ar.L3 0.0126 0.009 1.437 0.151 -0.005 0.030  
sigma2 39.9337 0.103 388.322 0.000 39.732 40.135  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 7357528.87  
Prob(Q): 0.99 Prob(JB): 0.00  
Heteroskedasticity (H): 0.39 Skew: 7.57  
Prob(H) (two-sided): 0.00 Kurtosis: 227.04  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: India\_40

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3664  
Model: ARIMA(0, 1, 0) Log Likelihood -10036.791  
Date: Sat, 18 May 2024 AIC 20075.582  
Time: 01:49:10 BIC 20081.788  
Sample: 0 HQIC 20077.792  
 - 3664   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 14.0446 0.071 196.440 0.000 13.905 14.185  
===================================================================================  
Ljung-Box (L1) (Q): 19.82 Jarque-Bera (JB): 246355.31  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.35 Skew: 0.67  
Prob(H) (two-sided): 0.00 Kurtosis: 43.15  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(5,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3664  
Model: ARIMA(5, 1, 0) Log Likelihood -9925.262  
Date: Sat, 18 May 2024 AIC 19872.524  
Time: 01:49:10 BIC 19940.791  
Sample: 0 HQIC 19896.831  
 - 3664   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0635 0.038 -1.669 0.095 -0.138 0.011  
x2 -0.0014 0.000 -3.824 0.000 -0.002 -0.001  
x3 -0.2086 0.139 -1.501 0.133 -0.481 0.064  
x4 1.3331 0.227 5.877 0.000 0.888 1.778  
x5 -0.0002 0.003 -0.059 0.953 -0.007 0.006  
ar.L1 0.0228 0.010 2.229 0.026 0.003 0.043  
ar.L2 0.1736 0.009 19.785 0.000 0.156 0.191  
ar.L3 0.0545 0.009 6.143 0.000 0.037 0.072  
ar.L4 0.0142 0.010 1.363 0.173 -0.006 0.035  
ar.L5 0.0276 0.009 3.211 0.001 0.011 0.044  
sigma2 13.3029 0.086 154.440 0.000 13.134 13.472  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 207218.72  
Prob(Q): 0.98 Prob(JB): 0.00  
Heteroskedasticity (H): 0.32 Skew: 0.10  
Prob(H) (two-sided): 0.00 Kurtosis: 39.85  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: India\_67

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3664  
Model: ARIMA(0, 1, 0) Log Likelihood -10424.737  
Date: Sat, 18 May 2024 AIC 20851.474  
Time: 01:49:10 BIC 20857.680  
Sample: 0 HQIC 20853.683  
 - 3664   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 17.3580 0.071 242.830 0.000 17.218 17.498  
===================================================================================  
Ljung-Box (L1) (Q): 20.23 Jarque-Bera (JB): 601516.37  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.52 Skew: 2.92  
Prob(H) (two-sided): 0.00 Kurtosis: 65.51  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(4,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3664  
Model: ARIMA(4, 1, 0) Log Likelihood -10284.507  
Date: Sat, 18 May 2024 AIC 20591.013  
Time: 01:49:10 BIC 20659.280  
Sample: 0 HQIC 20615.320  
 - 3664   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 0.7597 0.841 0.903 0.366 -0.889 2.408  
x2 -0.1021 0.045 -2.248 0.025 -0.191 -0.013  
x3 -0.0020 0.000 -5.504 0.000 -0.003 -0.001  
x4 0.0839 0.159 0.528 0.597 -0.227 0.395  
x5 1.7296 0.226 7.664 0.000 1.287 2.172  
x6 -0.0008 0.004 -0.203 0.839 -0.009 0.007  
ar.L1 0.0319 0.009 3.380 0.001 0.013 0.050  
ar.L2 0.1782 0.008 23.070 0.000 0.163 0.193  
ar.L3 0.0011 0.006 0.185 0.853 -0.010 0.012  
ar.L4 0.0668 0.007 9.214 0.000 0.053 0.081  
sigma2 16.1778 0.107 151.015 0.000 15.968 16.388  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 447833.62  
Prob(Q): 0.98 Prob(JB): 0.00  
Heteroskedasticity (H): 0.53 Skew: 2.32  
Prob(H) (two-sided): 0.00 Kurtosis: 56.97  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: India\_69

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3592  
Model: ARIMA(0, 1, 0) Log Likelihood -10335.390  
Date: Sat, 18 May 2024 AIC 20672.779  
Time: 01:49:10 BIC 20678.966  
Sample: 0 HQIC 20674.984  
 - 3592   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 18.5119 0.075 246.494 0.000 18.365 18.659  
===================================================================================  
Ljung-Box (L1) (Q): 11.68 Jarque-Bera (JB): 652421.26  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.60 Skew: 2.94  
Prob(H) (two-sided): 0.00 Kurtosis: 68.77  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(4,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3592  
Model: ARIMA(4, 1, 0) Log Likelihood -10182.050  
Date: Sat, 18 May 2024 AIC 20386.100  
Time: 01:49:10 BIC 20454.148  
Sample: 0 HQIC 20410.354  
 - 3592   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 1.3608 0.816 1.668 0.095 -0.238 2.959  
x2 -0.1177 0.044 -2.672 0.008 -0.204 -0.031  
x3 -0.0030 0.000 -8.189 0.000 -0.004 -0.002  
x4 0.0342 0.164 0.208 0.835 -0.288 0.357  
x5 1.5161 0.257 5.894 0.000 1.012 2.020  
x6 -0.0044 0.004 -1.067 0.286 -0.013 0.004  
ar.L1 0.0165 0.009 1.747 0.081 -0.002 0.035  
ar.L2 0.1772 0.007 25.279 0.000 0.163 0.191  
ar.L3 -0.0165 0.005 -3.253 0.001 -0.026 -0.007  
ar.L4 0.0851 0.009 9.927 0.000 0.068 0.102  
sigma2 17.0627 0.121 140.990 0.000 16.825 17.300  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 507248.66  
Prob(Q): 0.97 Prob(JB): 0.00  
Heteroskedasticity (H): 0.59 Skew: 2.46  
Prob(H) (two-sided): 0.00 Kurtosis: 61.02  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: India\_124

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3501  
Model: ARIMA(0, 1, 0) Log Likelihood -6214.070  
Date: Sat, 18 May 2024 AIC 12430.139  
Time: 01:49:10 BIC 12436.300  
Sample: 0 HQIC 12432.338  
 - 3501   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 2.0401 0.013 152.557 0.000 2.014 2.066  
===================================================================================  
Ljung-Box (L1) (Q): 14.16 Jarque-Bera (JB): 88332.92  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.36 Skew: 0.24  
Prob(H) (two-sided): 0.00 Kurtosis: 27.61  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(3,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3501  
Model: ARIMA(3, 1, 0) Log Likelihood -5935.303  
Date: Sat, 18 May 2024 AIC 11888.605  
Time: 01:49:10 BIC 11944.050  
Sample: 0 HQIC 11908.393  
 - 3501   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.1502 0.011 -14.002 0.000 -0.171 -0.129  
x2 -0.0020 0.000 -16.403 0.000 -0.002 -0.002  
x3 -0.1278 0.047 -2.718 0.007 -0.220 -0.036  
x4 1.2128 0.082 14.750 0.000 1.052 1.374  
x5 0.0003 0.001 0.325 0.745 -0.002 0.002  
ar.L1 0.0477 0.007 6.766 0.000 0.034 0.062  
ar.L2 -0.0338 0.008 -4.250 0.000 -0.049 -0.018  
ar.L3 -0.0339 0.008 -4.048 0.000 -0.050 -0.018  
sigma2 1.7413 0.017 102.235 0.000 1.708 1.775  
===================================================================================  
Ljung-Box (L1) (Q): 0.05 Jarque-Bera (JB): 63346.05  
Prob(Q): 0.83 Prob(JB): 0.00  
Heteroskedasticity (H): 0.38 Skew: -0.32  
Prob(H) (two-sided): 0.00 Kurtosis: 23.83  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: India\_136

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3664  
Model: ARIMA(0, 1, 0) Log Likelihood -9439.415  
Date: Sat, 18 May 2024 AIC 18880.829  
Time: 01:49:10 BIC 18887.035  
Sample: 0 HQIC 18883.039  
 - 3664   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 10.1355 0.046 218.675 0.000 10.045 10.226  
===================================================================================  
Ljung-Box (L1) (Q): 67.79 Jarque-Bera (JB): 385064.61  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.28 Skew: 0.19  
Prob(H) (two-sided): 0.00 Kurtosis: 53.23  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(3,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3664  
Model: ARIMA(3, 1, 0) Log Likelihood -9276.433  
Date: Sat, 18 May 2024 AIC 18568.866  
Time: 01:49:10 BIC 18618.514  
Sample: 0 HQIC 18586.544  
 - 3664   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.3060 0.024 -13.010 0.000 -0.352 -0.260  
x2 -0.3086 0.111 -2.791 0.005 -0.525 -0.092  
x3 2.6093 0.188 13.877 0.000 2.241 2.978  
x4 0.0031 0.002 1.436 0.151 -0.001 0.007  
ar.L1 -0.1669 0.005 -33.150 0.000 -0.177 -0.157  
ar.L2 -0.0531 0.010 -5.169 0.000 -0.073 -0.033  
ar.L3 -0.0188 0.011 -1.689 0.091 -0.041 0.003  
sigma2 9.2734 0.063 147.702 0.000 9.150 9.396  
===================================================================================  
Ljung-Box (L1) (Q): 0.01 Jarque-Bera (JB): 282121.60  
Prob(Q): 0.94 Prob(JB): 0.00  
Heteroskedasticity (H): 0.32 Skew: 0.61  
Prob(H) (two-sided): 0.00 Kurtosis: 45.98  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: India\_153

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3664  
Model: ARIMA(0, 1, 0) Log Likelihood -9793.966  
Date: Sat, 18 May 2024 AIC 19589.933  
Time: 01:49:10 BIC 19596.139  
Sample: 0 HQIC 19592.143  
 - 3664   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 12.3008 0.054 226.602 0.000 12.194 12.407  
===================================================================================  
Ljung-Box (L1) (Q): 17.28 Jarque-Bera (JB): 451730.13  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.58 Skew: 2.63  
Prob(H) (two-sided): 0.00 Kurtosis: 57.15  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(6,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3664  
Model: ARIMA(6, 1, 0) Log Likelihood -9617.894  
Date: Sat, 18 May 2024 AIC 19257.789  
Time: 01:49:10 BIC 19326.055  
Sample: 0 HQIC 19282.096  
 - 3664   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0222 0.031 -0.715 0.475 -0.083 0.039  
x2 -0.0030 0.000 -8.756 0.000 -0.004 -0.002  
x3 -0.2027 0.123 -1.653 0.098 -0.443 0.038  
x4 1.1391 0.201 5.670 0.000 0.745 1.533  
ar.L1 0.0154 0.008 1.964 0.049 3.44e-05 0.031  
ar.L2 0.1738 0.008 20.826 0.000 0.157 0.190  
ar.L3 0.0584 0.010 5.992 0.000 0.039 0.077  
ar.L4 0.0694 0.010 7.122 0.000 0.050 0.088  
ar.L5 -0.0017 0.008 -0.214 0.830 -0.017 0.014  
ar.L6 0.0602 0.007 9.062 0.000 0.047 0.073  
sigma2 11.1916 0.077 144.574 0.000 11.040 11.343  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 368470.83  
Prob(Q): 0.98 Prob(JB): 0.00  
Heteroskedasticity (H): 0.55 Skew: 2.34  
Prob(H) (two-sided): 0.00 Kurtosis: 51.91  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: India\_160

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3501  
Model: ARIMA(0, 1, 0) Log Likelihood -10707.480  
Date: Sat, 18 May 2024 AIC 21416.960  
Time: 01:49:10 BIC 21423.121  
Sample: 0 HQIC 21419.159  
 - 3501   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 26.5943 0.061 436.064 0.000 26.475 26.714  
===================================================================================  
Ljung-Box (L1) (Q): 7.90 Jarque-Bera (JB): 6791546.63  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.85 Skew: 6.81  
Prob(H) (two-sided): 0.01 Kurtosis: 218.37  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(3,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 3501  
Model: ARIMA(3, 1, 0) Log Likelihood -10597.183  
Date: Sat, 18 May 2024 AIC 21210.367  
Time: 01:49:10 BIC 21259.651  
Sample: 0 HQIC 21227.956  
 - 3501   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.4043 0.049 -8.303 0.000 -0.500 -0.309  
x2 -0.5674 0.213 -2.669 0.008 -0.984 -0.151  
x3 4.4661 0.342 13.077 0.000 3.797 5.135  
x4 0.0161 0.004 3.844 0.000 0.008 0.024  
ar.L1 0.0327 0.010 3.246 0.001 0.013 0.052  
ar.L2 -0.0079 0.014 -0.572 0.568 -0.035 0.019  
ar.L3 -0.0068 0.011 -0.608 0.543 -0.029 0.015  
sigma2 24.9604 0.067 371.018 0.000 24.829 25.092  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 8373099.66  
Prob(Q): 0.98 Prob(JB): 0.00  
Heteroskedasticity (H): 0.94 Skew: 7.12  
Prob(H) (two-sided): 0.27 Kurtosis: 242.19  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).