Column: China\_4 2010-01-01 - 2012-05-31

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 628  
Model: ARIMA(0, 1, 0) Log Likelihood -3074.786  
Date: Mon, 20 May 2024 AIC 6151.572  
Time: 18:59:14 BIC 6156.013  
Sample: 0 HQIC 6153.297  
 - 628   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 1064.2815 31.522 33.763 0.000 1002.500 1126.063  
===================================================================================  
Ljung-Box (L1) (Q): 0.50 Jarque-Bera (JB): 772.67  
Prob(Q): 0.48 Prob(JB): 0.00  
Heteroskedasticity (H): 2.44 Skew: -0.52  
Prob(H) (two-sided): 0.00 Kurtosis: 8.34  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 628  
Model: ARIMA(3, 1, 0) Log Likelihood -3019.667  
Date: Mon, 20 May 2024 AIC 6061.334  
Time: 18:59:14 BIC 6110.184  
Sample: 0 HQIC 6080.313  
 - 628   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -4.6300 0.807 -5.738 0.000 -6.212 -3.048  
x2 0.0071 0.012 0.595 0.552 -0.016 0.030  
x3 -0.0658 0.062 -1.066 0.286 -0.187 0.055  
x4 -9.2836 14.703 -0.631 0.528 -38.100 19.533  
x5 -0.1092 0.033 -3.327 0.001 -0.174 -0.045  
x6 -74.1232 21.604 -3.431 0.001 -116.466 -31.780  
x7 467.8862 188.957 2.476 0.013 97.536 838.236  
ar.L1 -0.0299 0.032 -0.934 0.350 -0.093 0.033  
ar.L2 -0.0802 0.029 -2.786 0.005 -0.137 -0.024  
ar.L3 -0.0682 0.029 -2.363 0.018 -0.125 -0.012  
sigma2 893.0313 25.448 35.092 0.000 843.154 942.909  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 1256.22  
Prob(Q): 0.95 Prob(JB): 0.00  
Heteroskedasticity (H): 2.47 Skew: -0.67  
Prob(H) (two-sided): 0.00 Kurtosis: 9.80  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_4 2012-05-31 - 2014-11-19

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 643  
Model: ARIMA(0, 1, 0) Log Likelihood -2848.862  
Date: Mon, 20 May 2024 AIC 5699.724  
Time: 18:59:14 BIC 5704.189  
Sample: 0 HQIC 5701.457  
 - 643   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 418.6726 10.722 39.047 0.000 397.657 439.688  
===================================================================================  
Ljung-Box (L1) (Q): 0.07 Jarque-Bera (JB): 1519.06  
Prob(Q): 0.79 Prob(JB): 0.00  
Heteroskedasticity (H): 0.19 Skew: -0.15  
Prob(H) (two-sided): 0.00 Kurtosis: 10.53  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 643  
Model: ARIMA(3, 1, 0) Log Likelihood -2814.777  
Date: Mon, 20 May 2024 AIC 5651.554  
Time: 18:59:14 BIC 5700.664  
Sample: 0 HQIC 5670.613  
 - 643   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -2.6926 0.614 -4.387 0.000 -3.896 -1.490  
x2 0.0137 0.008 1.678 0.093 -0.002 0.030  
x3 0.0586 0.044 1.340 0.180 -0.027 0.144  
x4 -20.1934 12.000 -1.683 0.092 -43.713 3.326  
x5 -0.1440 0.029 -5.041 0.000 -0.200 -0.088  
x6 -43.1758 22.599 -1.910 0.056 -87.470 1.118  
x7 528.5170 122.228 4.324 0.000 288.954 768.080  
ar.L1 -0.0142 0.034 -0.415 0.678 -0.081 0.053  
ar.L2 0.0297 0.038 0.773 0.439 -0.046 0.105  
ar.L3 0.0381 0.035 1.105 0.269 -0.030 0.106  
sigma2 376.3691 11.492 32.751 0.000 353.845 398.893  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 1664.73  
Prob(Q): 0.97 Prob(JB): 0.00  
Heteroskedasticity (H): 0.22 Skew: -0.37  
Prob(H) (two-sided): 0.00 Kurtosis: 10.85  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_4 2014-11-19 - 2023-06-07

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 2229  
Model: ARIMA(0, 1, 0) Log Likelihood -8727.620  
Date: Mon, 20 May 2024 AIC 17457.241  
Time: 18:59:14 BIC 17462.950  
Sample: 0 HQIC 17459.326  
 - 2229   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 147.9118 0.870 170.028 0.000 146.207 149.617  
===================================================================================  
Ljung-Box (L1) (Q): 65.90 Jarque-Bera (JB): 234319.66  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.39 Skew: 2.60  
Prob(H) (two-sided): 0.00 Kurtosis: 52.97  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 2229  
Model: ARIMA(3, 1, 0) Log Likelihood -8598.639  
Date: Mon, 20 May 2024 AIC 17219.278  
Time: 18:59:14 BIC 17282.075  
Sample: 0 HQIC 17242.210  
 - 2229   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.8032 0.115 -7.007 0.000 -1.028 -0.579  
x2 -0.0013 0.002 -0.713 0.476 -0.005 0.002  
x3 0.0364 0.009 4.085 0.000 0.019 0.054  
x4 2.9690 7.464 0.398 0.691 -11.659 17.597  
x5 -0.0298 0.004 -7.196 0.000 -0.038 -0.022  
x6 1.7892 5.666 0.316 0.752 -9.317 12.895  
x7 78.1565 13.298 5.877 0.000 52.093 104.220  
ar.L1 0.1286 0.006 20.342 0.000 0.116 0.141  
ar.L2 0.1110 0.006 18.696 0.000 0.099 0.123  
ar.L3 0.0882 0.006 13.803 0.000 0.076 0.101  
sigma2 131.7816 1.423 92.627 0.000 128.993 134.570  
===================================================================================  
Ljung-Box (L1) (Q): 0.01 Jarque-Bera (JB): 141483.50  
Prob(Q): 0.94 Prob(JB): 0.00  
Heteroskedasticity (H): 0.42 Skew: 1.40  
Prob(H) (two-sided): 0.00 Kurtosis: 41.94  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_33 2010-01-01 - 2013-12-09

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1025  
Model: ARIMA(0, 1, 0) Log Likelihood -2937.039  
Date: Mon, 20 May 2024 AIC 5876.078  
Time: 18:59:14 BIC 5881.010  
Sample: 0 HQIC 5877.951  
 - 1025   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 18.1474 0.329 55.206 0.000 17.503 18.792  
===================================================================================  
Ljung-Box (L1) (Q): 10.84 Jarque-Bera (JB): 4189.23  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.80 Skew: 0.13  
Prob(H) (two-sided): 0.04 Kurtosis: 12.91  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1025  
Model: ARIMA(4, 1, 0) Log Likelihood -2911.301  
Date: Mon, 20 May 2024 AIC 5842.603  
Time: 18:59:14 BIC 5891.918  
Sample: 0 HQIC 5861.324  
 - 1025   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.1562 0.086 -1.813 0.070 -0.325 0.013  
x2 -0.0161 0.006 -2.648 0.008 -0.028 -0.004  
x3 -2.1425 1.703 -1.258 0.208 -5.479 1.195  
x4 0.9346 2.378 0.393 0.694 -3.727 5.596  
x5 45.4555 17.891 2.541 0.011 10.389 80.522  
ar.L1 0.0768 0.023 3.297 0.001 0.031 0.122  
ar.L2 0.1505 0.024 6.334 0.000 0.104 0.197  
ar.L3 -0.0463 0.020 -2.330 0.020 -0.085 -0.007  
ar.L4 0.0232 0.024 0.948 0.343 -0.025 0.071  
sigma2 17.2576 0.362 47.647 0.000 16.548 17.968  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 3669.39  
Prob(Q): 0.98 Prob(JB): 0.00  
Heteroskedasticity (H): 0.72 Skew: 0.07  
Prob(H) (two-sided): 0.00 Kurtosis: 12.27  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_33 2013-12-09 - 2016-01-19

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 550  
Model: ARIMA(0, 1, 0) Log Likelihood -1381.192  
Date: Mon, 20 May 2024 AIC 2764.384  
Time: 18:59:14 BIC 2768.692  
Sample: 0 HQIC 2766.068  
 - 550   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 8.9691 0.189 47.527 0.000 8.599 9.339  
===================================================================================  
Ljung-Box (L1) (Q): 23.57 Jarque-Bera (JB): 4832.57  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.38 Skew: 1.12  
Prob(H) (two-sided): 0.00 Kurtosis: 17.36  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 550  
Model: ARIMA(4, 1, 0) Log Likelihood -1354.274  
Date: Mon, 20 May 2024 AIC 2728.549  
Time: 18:59:14 BIC 2771.629  
Sample: 0 HQIC 2745.385  
 - 550   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0806 0.136 -0.593 0.553 -0.347 0.186  
x2 0.0037 0.014 0.272 0.786 -0.023 0.030  
x3 -3.6398 2.214 -1.644 0.100 -7.980 0.700  
x4 8.3745 3.671 2.281 0.023 1.179 15.570  
x5 11.0807 13.363 0.829 0.407 -15.111 37.272  
ar.L1 -0.2012 0.022 -9.155 0.000 -0.244 -0.158  
ar.L2 0.1166 0.020 5.780 0.000 0.077 0.156  
ar.L3 -0.0384 0.025 -1.552 0.121 -0.087 0.010  
ar.L4 -0.1464 0.022 -6.642 0.000 -0.190 -0.103  
sigma2 8.1433 0.238 34.180 0.000 7.676 8.610  
===================================================================================  
Ljung-Box (L1) (Q): 0.02 Jarque-Bera (JB): 2980.42  
Prob(Q): 0.89 Prob(JB): 0.00  
Heteroskedasticity (H): 0.43 Skew: 1.18  
Prob(H) (two-sided): 0.00 Kurtosis: 14.17  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_33 2016-01-19 - 2024-01-18

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 2086  
Model: ARIMA(0, 1, 0) Log Likelihood -4595.364  
Date: Mon, 20 May 2024 AIC 9192.729  
Time: 18:59:14 BIC 9198.371  
Sample: 0 HQIC 9194.796  
 - 2086   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 4.8073 0.050 97.094 0.000 4.710 4.904  
===================================================================================  
Ljung-Box (L1) (Q): 8.01 Jarque-Bera (JB): 23531.18  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 1.55 Skew: 1.48  
Prob(H) (two-sided): 0.00 Kurtosis: 19.19  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 2086  
Model: ARIMA(4, 1, 0) Log Likelihood -4572.472  
Date: Mon, 20 May 2024 AIC 9164.945  
Time: 18:59:14 BIC 9221.370  
Sample: 0 HQIC 9185.619  
 - 2086   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0165 0.025 -0.659 0.510 -0.066 0.033  
x2 -4.671e-05 0.003 -0.018 0.986 -0.005 0.005  
x3 -3.7424 2.040 -1.834 0.067 -7.742 0.257  
x4 -1.8142 1.159 -1.566 0.117 -4.085 0.456  
x5 14.8830 2.403 6.194 0.000 10.173 19.593  
ar.L1 0.0347 0.011 3.160 0.002 0.013 0.056  
ar.L2 0.0311 0.012 2.618 0.009 0.008 0.054  
ar.L3 -0.0022 0.015 -0.150 0.881 -0.031 0.027  
ar.L4 0.0361 0.016 2.195 0.028 0.004 0.068  
sigma2 4.7020 0.054 86.367 0.000 4.595 4.809  
===================================================================================  
Ljung-Box (L1) (Q): 0.01 Jarque-Bera (JB): 22138.88  
Prob(Q): 0.93 Prob(JB): 0.00  
Heteroskedasticity (H): 1.55 Skew: 1.35  
Prob(H) (two-sided): 0.00 Kurtosis: 18.73  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_103 2014-11-21 - 2015-10-14

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 232  
Model: ARIMA(0, 1, 0) Log Likelihood -509.698  
Date: Mon, 20 May 2024 AIC 1021.395  
Time: 18:59:15 BIC 1024.837  
Sample: 0 HQIC 1022.783  
 - 232   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 4.8312 0.281 17.200 0.000 4.281 5.382  
===================================================================================  
Ljung-Box (L1) (Q): 2.23 Jarque-Bera (JB): 93.93  
Prob(Q): 0.14 Prob(JB): 0.00  
Heteroskedasticity (H): 1.91 Skew: 0.28  
Prob(H) (two-sided): 0.01 Kurtosis: 6.08  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 232  
Model: ARIMA(2, 1, 0) Log Likelihood -503.611  
Date: Mon, 20 May 2024 AIC 1021.221  
Time: 18:59:15 BIC 1045.318  
Sample: 0 HQIC 1030.940  
 - 232   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0008 0.002 -0.401 0.689 -0.005 0.003  
x2 0.0110 0.014 0.770 0.441 -0.017 0.039  
x3 7.3667 2.405 3.063 0.002 2.652 12.081  
x4 4.2605 15.324 0.278 0.781 -25.773 34.294  
ar.L1 0.1184 0.058 2.053 0.040 0.005 0.231  
ar.L2 -0.0214 0.058 -0.371 0.711 -0.135 0.092  
sigma2 4.5829 0.297 15.449 0.000 4.001 5.164  
===================================================================================  
Ljung-Box (L1) (Q): 0.03 Jarque-Bera (JB): 80.96  
Prob(Q): 0.87 Prob(JB): 0.00  
Heteroskedasticity (H): 1.83 Skew: 0.10  
Prob(H) (two-sided): 0.01 Kurtosis: 5.89  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_103 2015-10-14 - 2023-04-17

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1957  
Model: ARIMA(0, 1, 0) Log Likelihood -5294.349  
Date: Mon, 20 May 2024 AIC 10590.698  
Time: 18:59:15 BIC 10596.276  
Sample: 0 HQIC 10592.748  
 - 1957   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 13.1387 0.057 229.361 0.000 13.026 13.251  
===================================================================================  
Ljung-Box (L1) (Q): 0.07 Jarque-Bera (JB): 908537.02  
Prob(Q): 0.80 Prob(JB): 0.00  
Heteroskedasticity (H): 2.44 Skew: -1.60  
Prob(H) (two-sided): 0.00 Kurtosis: 108.53  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1957  
Model: ARIMA(2, 1, 0) Log Likelihood -5282.799  
Date: Mon, 20 May 2024 AIC 10579.597  
Time: 18:59:15 BIC 10618.648  
Sample: 0 HQIC 10593.952  
 - 1957   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0001 0.000 -0.259 0.796 -0.001 0.001  
x2 0.0183 0.005 3.678 0.000 0.009 0.028  
x3 -4.7094 2.342 -2.011 0.044 -9.300 -0.119  
x4 23.0134 5.158 4.462 0.000 12.904 33.122  
ar.L1 -0.0074 0.019 -0.397 0.692 -0.044 0.029  
ar.L2 0.0111 0.030 0.378 0.706 -0.047 0.069  
sigma2 12.9881 0.065 200.387 0.000 12.861 13.115  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 942391.77  
Prob(Q): 0.97 Prob(JB): 0.00  
Heteroskedasticity (H): 2.49 Skew: -1.77  
Prob(H) (two-sided): 0.00 Kurtosis: 110.47  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_165 2010-01-01 - 2013-06-18

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 901  
Model: ARIMA(0, 1, 0) Log Likelihood -2406.839  
Date: Mon, 20 May 2024 AIC 4815.678  
Time: 18:59:15 BIC 4820.481  
Sample: 0 HQIC 4817.513  
 - 901   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 12.3130 0.274 44.993 0.000 11.777 12.849  
===================================================================================  
Ljung-Box (L1) (Q): 2.21 Jarque-Bera (JB): 1836.62  
Prob(Q): 0.14 Prob(JB): 0.00  
Heteroskedasticity (H): 0.74 Skew: 0.12  
Prob(H) (two-sided): 0.01 Kurtosis: 9.99  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 901  
Model: ARIMA(5, 1, 0) Log Likelihood -2350.678  
Date: Mon, 20 May 2024 AIC 4725.357  
Time: 18:59:15 BIC 4782.986  
Sample: 0 HQIC 4747.372  
 - 901   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.1029 0.068 -1.502 0.133 -0.237 0.031  
x2 -0.0093 0.006 -1.629 0.103 -0.021 0.002  
x3 0.2468 1.404 0.176 0.860 -2.505 2.998  
x4 -0.0226 0.003 -8.016 0.000 -0.028 -0.017  
x5 0.4394 2.111 0.208 0.835 -3.697 4.576  
x6 31.0546 17.714 1.753 0.080 -3.664 65.773  
ar.L1 0.0398 0.024 1.628 0.104 -0.008 0.088  
ar.L2 0.1351 0.025 5.500 0.000 0.087 0.183  
ar.L3 -0.1757 0.020 -8.891 0.000 -0.214 -0.137  
ar.L4 -0.0656 0.022 -3.003 0.003 -0.108 -0.023  
ar.L5 0.0182 0.024 0.749 0.454 -0.029 0.066  
sigma2 10.8663 0.305 35.570 0.000 10.268 11.465  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 1156.45  
Prob(Q): 0.97 Prob(JB): 0.00  
Heteroskedasticity (H): 0.65 Skew: 0.02  
Prob(H) (two-sided): 0.00 Kurtosis: 8.55  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_165 2013-06-18 - 2020-03-05

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1751  
Model: ARIMA(0, 1, 0) Log Likelihood -4053.548  
Date: Mon, 20 May 2024 AIC 8109.096  
Time: 18:59:15 BIC 8114.564  
Sample: 0 HQIC 8111.117  
 - 1751   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 6.0179 0.075 79.937 0.000 5.870 6.165  
===================================================================================  
Ljung-Box (L1) (Q): 0.13 Jarque-Bera (JB): 12119.50  
Prob(Q): 0.72 Prob(JB): 0.00  
Heteroskedasticity (H): 0.33 Skew: 1.22  
Prob(H) (two-sided): 0.00 Kurtosis: 15.66  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1751  
Model: ARIMA(5, 1, 0) Log Likelihood -3986.641  
Date: Mon, 20 May 2024 AIC 7997.283  
Time: 18:59:15 BIC 8062.891  
Sample: 0 HQIC 8021.536  
 - 1751   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0965 0.046 -2.081 0.037 -0.187 -0.006  
x2 -0.0039 0.003 -1.140 0.254 -0.011 0.003  
x3 -2.3555 1.173 -2.008 0.045 -4.655 -0.056  
x4 -0.0099 0.001 -10.299 0.000 -0.012 -0.008  
x5 4.4355 1.564 2.837 0.005 1.371 7.500  
x6 12.0939 4.013 3.014 0.003 4.229 19.959  
ar.L1 -0.0023 0.016 -0.146 0.884 -0.033 0.029  
ar.L2 -0.0039 0.012 -0.339 0.735 -0.027 0.019  
ar.L3 -0.0033 0.018 -0.188 0.851 -0.038 0.031  
ar.L4 -0.0474 0.013 -3.627 0.000 -0.073 -0.022  
ar.L5 -0.0307 0.017 -1.757 0.079 -0.065 0.004  
sigma2 5.5749 0.096 58.023 0.000 5.387 5.763  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 11001.76  
Prob(Q): 0.96 Prob(JB): 0.00  
Heteroskedasticity (H): 0.30 Skew: 1.17  
Prob(H) (two-sided): 0.00 Kurtosis: 15.06  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_165 2020-03-05 - 2024-01-18

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1009  
Model: ARIMA(0, 1, 0) Log Likelihood -2422.262  
Date: Mon, 20 May 2024 AIC 4846.523  
Time: 18:59:15 BIC 4851.439  
Sample: 0 HQIC 4848.391  
 - 1009   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 7.1577 0.128 55.764 0.000 6.906 7.409  
===================================================================================  
Ljung-Box (L1) (Q): 2.05 Jarque-Bera (JB): 4505.71  
Prob(Q): 0.15 Prob(JB): 0.00  
Heteroskedasticity (H): 1.85 Skew: 0.38  
Prob(H) (two-sided): 0.00 Kurtosis: 13.33  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1009  
Model: ARIMA(5, 1, 0) Log Likelihood -2364.146  
Date: Mon, 20 May 2024 AIC 4752.292  
Time: 18:59:15 BIC 4811.281  
Sample: 0 HQIC 4774.703  
 - 1009   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0250 0.038 -0.655 0.512 -0.100 0.050  
x2 -0.0007 0.004 -0.161 0.872 -0.009 0.008  
x3 -1.3828 3.552 -0.389 0.697 -8.344 5.579  
x4 -0.0117 0.002 -6.405 0.000 -0.015 -0.008  
x5 -1.6453 1.973 -0.834 0.404 -5.513 2.222  
x6 23.0238 4.227 5.447 0.000 14.740 31.308  
ar.L1 0.0074 0.015 0.506 0.613 -0.021 0.036  
ar.L2 -0.0365 0.025 -1.472 0.141 -0.085 0.012  
ar.L3 -0.0603 0.021 -2.922 0.003 -0.101 -0.020  
ar.L4 0.0356 0.021 1.682 0.093 -0.006 0.077  
ar.L5 0.0729 0.017 4.237 0.000 0.039 0.107  
sigma2 6.3778 0.136 47.056 0.000 6.112 6.643  
===================================================================================  
Ljung-Box (L1) (Q): 0.01 Jarque-Bera (JB): 5098.88  
Prob(Q): 0.94 Prob(JB): 0.00  
Heteroskedasticity (H): 1.83 Skew: 0.18  
Prob(H) (two-sided): 0.00 Kurtosis: 14.01  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_169 2010-01-01 - 2014-09-23

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1231  
Model: ARIMA(0, 1, 0) Log Likelihood -3370.534  
Date: Mon, 20 May 2024 AIC 6743.068  
Time: 18:59:15 BIC 6748.182  
Sample: 0 HQIC 6744.992  
 - 1231   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 14.0506 0.228 61.623 0.000 13.604 14.497  
===================================================================================  
Ljung-Box (L1) (Q): 0.06 Jarque-Bera (JB): 5524.09  
Prob(Q): 0.81 Prob(JB): 0.00  
Heteroskedasticity (H): 1.12 Skew: 0.42  
Prob(H) (two-sided): 0.24 Kurtosis: 13.35  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1231  
Model: ARIMA(4, 1, 0) Log Likelihood -3305.784  
Date: Mon, 20 May 2024 AIC 6633.569  
Time: 18:59:15 BIC 6689.831  
Sample: 0 HQIC 6654.736  
 - 1231   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.3832 0.075 -5.083 0.000 -0.531 -0.235  
x2 0.0007 0.001 0.648 0.517 -0.001 0.003  
x3 -0.0102 0.005 -1.913 0.056 -0.021 0.000  
x4 -0.0188 0.003 -5.768 0.000 -0.025 -0.012  
x5 -6.9632 2.162 -3.221 0.001 -11.200 -2.726  
x6 27.7238 18.954 1.463 0.144 -9.425 64.873  
ar.L1 -0.0332 0.022 -1.521 0.128 -0.076 0.010  
ar.L2 -0.0135 0.019 -0.726 0.468 -0.050 0.023  
ar.L3 -0.0741 0.017 -4.262 0.000 -0.108 -0.040  
ar.L4 0.0172 0.016 1.075 0.282 -0.014 0.048  
sigma2 12.6478 0.264 47.859 0.000 12.130 13.166  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 3904.04  
Prob(Q): 0.99 Prob(JB): 0.00  
Heteroskedasticity (H): 1.26 Skew: 0.16  
Prob(H) (two-sided): 0.02 Kurtosis: 11.72  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_169 2014-09-23 - 2021-04-08

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1706  
Model: ARIMA(0, 1, 0) Log Likelihood -4062.384  
Date: Mon, 20 May 2024 AIC 8126.767  
Time: 18:59:15 BIC 8132.209  
Sample: 0 HQIC 8128.781  
 - 1706   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 6.8715 0.091 75.206 0.000 6.692 7.051  
===================================================================================  
Ljung-Box (L1) (Q): 19.13 Jarque-Bera (JB): 9284.37  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.68 Skew: 0.85  
Prob(H) (two-sided): 0.00 Kurtosis: 14.30  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1706  
Model: ARIMA(4, 1, 0) Log Likelihood -3957.105  
Date: Mon, 20 May 2024 AIC 7936.210  
Time: 18:59:15 BIC 7996.064  
Sample: 0 HQIC 7958.365  
 - 1706   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.2483 0.027 -9.086 0.000 -0.302 -0.195  
x2 0.0010 0.001 1.332 0.183 -0.000 0.003  
x3 0.0090 0.003 3.059 0.002 0.003 0.015  
x4 -0.0086 0.001 -10.590 0.000 -0.010 -0.007  
x5 2.8213 1.181 2.388 0.017 0.506 5.137  
x6 15.6916 3.443 4.558 0.000 8.944 22.439  
ar.L1 -0.1487 0.012 -12.062 0.000 -0.173 -0.125  
ar.L2 -0.1459 0.016 -9.047 0.000 -0.177 -0.114  
ar.L3 0.0155 0.014 1.113 0.266 -0.012 0.043  
ar.L4 -0.0279 0.016 -1.792 0.073 -0.058 0.003  
sigma2 6.0794 0.107 56.807 0.000 5.870 6.289  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 5075.42  
Prob(Q): 0.98 Prob(JB): 0.00  
Heteroskedasticity (H): 0.66 Skew: 0.69  
Prob(H) (two-sided): 0.00 Kurtosis: 11.34  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_169 2021-04-08 - 2024-01-18

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 724  
Model: ARIMA(0, 1, 0) Log Likelihood -1666.247  
Date: Mon, 20 May 2024 AIC 3334.495  
Time: 18:59:15 BIC 3339.078  
Sample: 0 HQIC 3336.264  
 - 724   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 5.8790 0.044 132.859 0.000 5.792 5.966  
===================================================================================  
Ljung-Box (L1) (Q): 36.03 Jarque-Bera (JB): 275860.57  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 3.18 Skew: 0.52  
Prob(H) (two-sided): 0.00 Kurtosis: 98.69  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 724  
Model: ARIMA(4, 1, 0) Log Likelihood -1626.787  
Date: Mon, 20 May 2024 AIC 3275.573  
Time: 18:59:15 BIC 3325.991  
Sample: 0 HQIC 3295.034  
 - 724   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0036 0.052 -0.070 0.944 -0.105 0.098  
x2 -0.0004 0.001 -0.655 0.513 -0.002 0.001  
x3 0.0107 0.008 1.358 0.175 -0.005 0.026  
x4 -0.0051 0.003 -1.790 0.073 -0.011 0.000  
x5 -5.4820 3.234 -1.695 0.090 -11.820 0.856  
x6 20.2684 5.928 3.419 0.001 8.649 31.887  
ar.L1 -0.2688 0.018 -15.117 0.000 -0.304 -0.234  
ar.L2 -0.0965 0.029 -3.320 0.001 -0.153 -0.040  
ar.L3 0.0146 0.041 0.357 0.721 -0.066 0.095  
ar.L4 0.0681 0.041 1.644 0.100 -0.013 0.149  
sigma2 5.2548 0.128 41.161 0.000 5.005 5.505  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 142425.95  
Prob(Q): 0.99 Prob(JB): 0.00  
Heteroskedasticity (H): 3.11 Skew: 2.32  
Prob(H) (two-sided): 0.00 Kurtosis: 71.60  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_203 2010-01-01 - 2012-05-31

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 628  
Model: ARIMA(0, 1, 0) Log Likelihood -2236.317  
Date: Mon, 20 May 2024 AIC 4474.634  
Time: 18:59:15 BIC 4479.075  
Sample: 0 HQIC 4476.359  
 - 628   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 73.3723 1.748 41.970 0.000 69.946 76.799  
===================================================================================  
Ljung-Box (L1) (Q): 0.63 Jarque-Bera (JB): 2359.98  
Prob(Q): 0.43 Prob(JB): 0.00  
Heteroskedasticity (H): 1.79 Skew: -0.90  
Prob(H) (two-sided): 0.00 Kurtosis: 12.33  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 628  
Model: ARIMA(2, 1, 0) Log Likelihood -2185.483  
Date: Mon, 20 May 2024 AIC 4390.966  
Time: 18:59:15 BIC 4435.376  
Sample: 0 HQIC 4408.220  
 - 628   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -1.2992 0.214 -6.081 0.000 -1.718 -0.880  
x2 0.0022 0.003 0.685 0.493 -0.004 0.008  
x3 -0.0092 0.016 -0.562 0.574 -0.041 0.023  
x4 -2.8396 4.058 -0.700 0.484 -10.794 5.114  
x5 -0.0256 0.009 -2.900 0.004 -0.043 -0.008  
x6 -17.2434 5.632 -3.062 0.002 -28.282 -6.204  
x7 109.5739 53.690 2.041 0.041 4.344 214.804  
ar.L1 -0.0218 0.027 -0.794 0.427 -0.076 0.032  
ar.L2 -0.0744 0.027 -2.772 0.006 -0.127 -0.022  
sigma2 62.3829 1.676 37.231 0.000 59.099 65.667  
===================================================================================  
Ljung-Box (L1) (Q): 0.03 Jarque-Bera (JB): 3068.10  
Prob(Q): 0.86 Prob(JB): 0.00  
Heteroskedasticity (H): 1.80 Skew: -1.09  
Prob(H) (two-sided): 0.00 Kurtosis: 13.61  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_203 2012-05-31 - 2014-09-23

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 602  
Model: ARIMA(0, 1, 0) Log Likelihood -1839.459  
Date: Mon, 20 May 2024 AIC 3680.918  
Time: 18:59:15 BIC 3685.317  
Sample: 0 HQIC 3682.630  
 - 602   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 26.6676 0.698 38.211 0.000 25.300 28.035  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 1507.76  
Prob(Q): 0.96 Prob(JB): 0.00  
Heteroskedasticity (H): 0.09 Skew: -0.17  
Prob(H) (two-sided): 0.00 Kurtosis: 10.75  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 602  
Model: ARIMA(2, 1, 0) Log Likelihood -1806.920  
Date: Mon, 20 May 2024 AIC 3633.840  
Time: 18:59:15 BIC 3677.826  
Sample: 0 HQIC 3650.962  
 - 602   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.6685 0.154 -4.346 0.000 -0.970 -0.367  
x2 0.0031 0.002 1.378 0.168 -0.001 0.007  
x3 0.0156 0.011 1.415 0.157 -0.006 0.037  
x4 -5.2781 3.017 -1.749 0.080 -11.192 0.635  
x5 -0.0374 0.007 -5.180 0.000 -0.052 -0.023  
x6 -14.3367 5.836 -2.457 0.014 -25.775 -2.898  
x7 114.0994 35.977 3.171 0.002 43.586 184.613  
ar.L1 -0.0092 0.035 -0.267 0.790 -0.077 0.058  
ar.L2 0.0374 0.039 0.952 0.341 -0.040 0.114  
sigma2 23.9393 0.768 31.166 0.000 22.434 25.445  
===================================================================================  
Ljung-Box (L1) (Q): 0.02 Jarque-Bera (JB): 1661.81  
Prob(Q): 0.90 Prob(JB): 0.00  
Heteroskedasticity (H): 0.12 Skew: -0.41  
Prob(H) (two-sided): 0.00 Kurtosis: 11.11  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_203 2014-09-23 - 2020-04-10

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1447  
Model: ARIMA(0, 1, 0) Log Likelihood -4059.889  
Date: Mon, 20 May 2024 AIC 8121.779  
Time: 18:59:15 BIC 8127.055  
Sample: 0 HQIC 8123.748  
 - 1447   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 16.0781 0.095 169.284 0.000 15.892 16.264  
===================================================================================  
Ljung-Box (L1) (Q): 43.19 Jarque-Bera (JB): 359815.50  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 3.34 Skew: 0.63  
Prob(H) (two-sided): 0.00 Kurtosis: 80.27  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1447  
Model: ARIMA(2, 1, 0) Log Likelihood -3984.196  
Date: Mon, 20 May 2024 AIC 7988.393  
Time: 18:59:15 BIC 8041.158  
Sample: 0 HQIC 8008.086  
 - 1447   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.3160 0.066 -4.796 0.000 -0.445 -0.187  
x2 -0.0010 0.001 -0.729 0.466 -0.004 0.002  
x3 0.0111 0.006 2.000 0.045 0.000 0.022  
x4 9.1422 3.289 2.779 0.005 2.695 15.589  
x5 -0.0079 0.002 -3.438 0.001 -0.012 -0.003  
x6 -0.2567 2.396 -0.107 0.915 -4.952 4.439  
x7 41.7187 6.244 6.682 0.000 29.481 53.956  
ar.L1 0.1927 0.009 21.461 0.000 0.175 0.210  
ar.L2 -0.1036 0.018 -5.613 0.000 -0.140 -0.067  
sigma2 14.4791 0.175 82.585 0.000 14.135 14.823  
===================================================================================  
Ljung-Box (L1) (Q): 0.02 Jarque-Bera (JB): 247439.54  
Prob(Q): 0.88 Prob(JB): 0.00  
Heteroskedasticity (H): 3.26 Skew: 0.26  
Prob(H) (two-sided): 0.00 Kurtosis: 67.08  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_203 2020-04-10 - 2024-01-18

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 983  
Model: ARIMA(0, 1, 0) Log Likelihood -2776.024  
Date: Mon, 20 May 2024 AIC 5554.049  
Time: 18:59:15 BIC 5558.939  
Sample: 0 HQIC 5555.909  
 - 983   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 16.7088 0.122 136.499 0.000 16.469 16.949  
===================================================================================  
Ljung-Box (L1) (Q): 42.33 Jarque-Bera (JB): 225776.29  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.31 Skew: 2.56  
Prob(H) (two-sided): 0.00 Kurtosis: 77.11  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 983  
Model: ARIMA(2, 1, 0) Log Likelihood -2737.230  
Date: Mon, 20 May 2024 AIC 5494.461  
Time: 18:59:15 BIC 5543.357  
Sample: 0 HQIC 5513.061  
 - 983   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0029 0.090 -0.032 0.974 -0.180 0.174  
x2 -0.0011 0.001 -1.522 0.128 -0.003 0.000  
x3 0.0094 0.008 1.118 0.264 -0.007 0.026  
x4 -7.7759 4.545 -1.711 0.087 -16.684 1.132  
x5 -0.0034 0.003 -1.314 0.189 -0.008 0.002  
x6 -11.2043 4.923 -2.276 0.023 -20.854 -1.555  
x7 23.3728 9.054 2.581 0.010 5.627 41.118  
ar.L1 -0.2429 0.011 -22.119 0.000 -0.264 -0.221  
ar.L2 -0.0673 0.028 -2.390 0.017 -0.122 -0.012  
sigma2 15.7629 0.173 91.334 0.000 15.425 16.101  
===================================================================================  
Ljung-Box (L1) (Q): 0.01 Jarque-Bera (JB): 199583.69  
Prob(Q): 0.94 Prob(JB): 0.00  
Heteroskedasticity (H): 0.39 Skew: 3.49  
Prob(H) (two-sided): 0.00 Kurtosis: 72.49  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_209 2010-01-01 - 2012-04-04

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 587  
Model: ARIMA(0, 1, 0) Log Likelihood -1673.599  
Date: Mon, 20 May 2024 AIC 3349.199  
Time: 18:59:15 BIC 3353.572  
Sample: 0 HQIC 3350.903  
 - 587   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 17.7088 0.384 46.074 0.000 16.956 18.462  
===================================================================================  
Ljung-Box (L1) (Q): 0.44 Jarque-Bera (JB): 3831.49  
Prob(Q): 0.51 Prob(JB): 0.00  
Heteroskedasticity (H): 3.11 Skew: 0.66  
Prob(H) (two-sided): 0.00 Kurtosis: 15.46  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 587  
Model: ARIMA(4, 1, 0) Log Likelihood -1660.989  
Date: Mon, 20 May 2024 AIC 3341.977  
Time: 18:59:15 BIC 3385.711  
Sample: 0 HQIC 3359.020  
 - 587   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.1782 0.121 -1.473 0.141 -0.415 0.059  
x2 -2.22e-05 0.002 -0.011 0.991 -0.004 0.004  
x3 -0.0246 0.007 -3.730 0.000 -0.038 -0.012  
x4 -2.4366 3.180 -0.766 0.444 -8.669 3.796  
x5 8.0874 26.840 0.301 0.763 -44.518 60.693  
ar.L1 -0.0290 0.029 -0.986 0.324 -0.087 0.029  
ar.L2 0.0927 0.029 3.216 0.001 0.036 0.149  
ar.L3 -0.0718 0.021 -3.392 0.001 -0.113 -0.030  
ar.L4 -0.1153 0.026 -4.458 0.000 -0.166 -0.065  
sigma2 16.9571 0.546 31.038 0.000 15.886 18.028  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 2491.92  
Prob(Q): 0.94 Prob(JB): 0.00  
Heteroskedasticity (H): 3.04 Skew: 0.48  
Prob(H) (two-sided): 0.00 Kurtosis: 13.06  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_209 2012-04-04 - 2021-10-08

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 2481  
Model: ARIMA(0, 1, 0) Log Likelihood -5473.170  
Date: Mon, 20 May 2024 AIC 10948.341  
Time: 18:59:15 BIC 10954.157  
Sample: 0 HQIC 10950.453  
 - 2481   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 4.8354 0.048 100.524 0.000 4.741 4.930  
===================================================================================  
Ljung-Box (L1) (Q): 5.30 Jarque-Bera (JB): 21822.26  
Prob(Q): 0.02 Prob(JB): 0.00  
Heteroskedasticity (H): 0.33 Skew: 1.14  
Prob(H) (two-sided): 0.00 Kurtosis: 17.35  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 2481  
Model: ARIMA(4, 1, 0) Log Likelihood -5444.804  
Date: Mon, 20 May 2024 AIC 10909.607  
Time: 18:59:15 BIC 10967.767  
Sample: 0 HQIC 10930.731  
 - 2481   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.1346 0.028 -4.785 0.000 -0.190 -0.079  
x2 -0.0003 0.000 -0.618 0.537 -0.001 0.001  
x3 -0.0020 0.002 -0.893 0.372 -0.006 0.002  
x4 3.0364 1.061 2.862 0.004 0.957 5.116  
x5 10.3749 2.926 3.546 0.000 4.641 16.109  
ar.L1 0.0328 0.011 3.122 0.002 0.012 0.053  
ar.L2 0.0625 0.009 7.117 0.000 0.045 0.080  
ar.L3 -0.0130 0.012 -1.043 0.297 -0.038 0.011  
ar.L4 -0.0340 0.010 -3.407 0.001 -0.053 -0.014  
sigma2 4.7277 0.062 76.706 0.000 4.607 4.848  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 17255.15  
Prob(Q): 0.95 Prob(JB): 0.00  
Heteroskedasticity (H): 0.33 Skew: 0.95  
Prob(H) (two-sided): 0.00 Kurtosis: 15.78  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_209 2021-10-08 - 2024-01-18

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 593  
Model: ARIMA(0, 1, 0) Log Likelihood -1420.342  
Date: Mon, 20 May 2024 AIC 2842.685  
Time: 18:59:15 BIC 2847.068  
Sample: 0 HQIC 2844.392  
 - 593   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 7.1034 0.068 103.827 0.000 6.969 7.237  
===================================================================================  
Ljung-Box (L1) (Q): 0.02 Jarque-Bera (JB): 125037.13  
Prob(Q): 0.88 Prob(JB): 0.00  
Heteroskedasticity (H): 1.16 Skew: -2.70  
Prob(H) (two-sided): 0.31 Kurtosis: 73.99  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 593  
Model: ARIMA(4, 1, 0) Log Likelihood -1413.024  
Date: Mon, 20 May 2024 AIC 2846.048  
Time: 18:59:15 BIC 2889.883  
Sample: 0 HQIC 2863.122  
 - 593   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 0.1078 0.082 1.307 0.191 -0.054 0.269  
x2 0.0001 0.000 0.295 0.768 -0.001 0.001  
x3 -0.0047 0.009 -0.507 0.612 -0.023 0.013  
x4 7.0791 4.794 1.477 0.140 -2.318 16.476  
x5 9.0949 7.458 1.219 0.223 -5.523 23.713  
ar.L1 -0.0144 0.107 -0.134 0.893 -0.224 0.195  
ar.L2 0.0162 0.135 0.120 0.904 -0.247 0.280  
ar.L3 0.0158 0.154 0.103 0.918 -0.287 0.318  
ar.L4 -0.0121 0.045 -0.272 0.786 -0.100 0.075  
sigma2 6.9308 0.140 49.557 0.000 6.657 7.205  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 112029.47  
Prob(Q): 0.97 Prob(JB): 0.00  
Heteroskedasticity (H): 1.24 Skew: -2.81  
Prob(H) (two-sided): 0.14 Kurtosis: 70.16  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_213 2010-01-01 - 2014-01-16

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1053  
Model: ARIMA(0, 1, 0) Log Likelihood -2626.845  
Date: Mon, 20 May 2024 AIC 5255.689  
Time: 18:59:15 BIC 5260.648  
Sample: 0 HQIC 5257.569  
 - 1053   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 8.6376 0.119 72.507 0.000 8.404 8.871  
===================================================================================  
Ljung-Box (L1) (Q): 0.03 Jarque-Bera (JB): 14187.58  
Prob(Q): 0.86 Prob(JB): 0.00  
Heteroskedasticity (H): 0.73 Skew: 0.20  
Prob(H) (two-sided): 0.00 Kurtosis: 20.99  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1053  
Model: ARIMA(2, 1, 0) Log Likelihood -2603.894  
Date: Mon, 20 May 2024 AIC 5223.787  
Time: 18:59:15 BIC 5263.455  
Sample: 0 HQIC 5238.826  
 - 1053   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.3026 0.053 -5.669 0.000 -0.407 -0.198  
x2 0.0005 0.001 0.431 0.667 -0.002 0.003  
x3 -0.8669 1.206 -0.719 0.472 -3.231 1.497  
x4 -3.2059 1.882 -1.703 0.088 -6.895 0.483  
x5 40.5366 15.309 2.648 0.008 10.531 70.542  
ar.L1 -0.0388 0.023 -1.710 0.087 -0.083 0.006  
ar.L2 0.0309 0.024 1.292 0.196 -0.016 0.078  
sigma2 8.2699 0.123 67.197 0.000 8.029 8.511  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 15279.50  
Prob(Q): 0.96 Prob(JB): 0.00  
Heteroskedasticity (H): 0.79 Skew: 0.12  
Prob(H) (two-sided): 0.02 Kurtosis: 21.67  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_213 2014-01-16 - 2020-03-05

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1599  
Model: ARIMA(0, 1, 0) Log Likelihood -4088.678  
Date: Mon, 20 May 2024 AIC 8179.356  
Time: 18:59:15 BIC 8184.733  
Sample: 0 HQIC 8181.353  
 - 1599   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 9.7705 0.041 240.934 0.000 9.691 9.850  
===================================================================================  
Ljung-Box (L1) (Q): 8.32 Jarque-Bera (JB): 1376736.18  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 1.73 Skew: -6.84  
Prob(H) (two-sided): 0.00 Kurtosis: 146.14  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1599  
Model: ARIMA(2, 1, 0) Log Likelihood -4068.079  
Date: Mon, 20 May 2024 AIC 8152.158  
Time: 18:59:15 BIC 8195.170  
Sample: 0 HQIC 8168.131  
 - 1599   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.2258 0.076 -2.958 0.003 -0.375 -0.076  
x2 0.0001 0.001 0.103 0.918 -0.002 0.002  
x3 -3.9439 2.991 -1.318 0.187 -9.807 1.919  
x4 -1.4730 1.910 -0.771 0.441 -5.217 2.271  
x5 21.3439 5.706 3.741 0.000 10.161 32.527  
ar.L1 0.0640 0.021 3.030 0.002 0.023 0.105  
ar.L2 0.0084 0.027 0.307 0.759 -0.045 0.062  
sigma2 9.5188 0.062 153.795 0.000 9.397 9.640  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 1450801.47  
Prob(Q): 0.99 Prob(JB): 0.00  
Heteroskedasticity (H): 1.74 Skew: -7.03  
Prob(H) (two-sided): 0.00 Kurtosis: 149.94  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_213 2020-03-05 - 2023-04-17

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 811  
Model: ARIMA(0, 1, 0) Log Likelihood -2116.686  
Date: Mon, 20 May 2024 AIC 4235.372  
Time: 18:59:15 BIC 4240.069  
Sample: 0 HQIC 4237.175  
 - 811   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 10.8972 0.103 106.067 0.000 10.696 11.099  
===================================================================================  
Ljung-Box (L1) (Q): 15.18 Jarque-Bera (JB): 97682.15  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.36 Skew: 2.90  
Prob(H) (two-sided): 0.00 Kurtosis: 56.48  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 811  
Model: ARIMA(2, 1, 0) Log Likelihood -2091.428  
Date: Mon, 20 May 2024 AIC 4198.856  
Time: 18:59:15 BIC 4236.432  
Sample: 0 HQIC 4213.282  
 - 811   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.1394 0.052 -2.679 0.007 -0.241 -0.037  
x2 -0.0002 0.001 -0.215 0.830 -0.002 0.002  
x3 -0.5626 3.730 -0.151 0.880 -7.873 6.748  
x4 -1.8928 3.497 -0.541 0.588 -8.747 4.961  
x5 11.9940 4.697 2.554 0.011 2.788 21.200  
ar.L1 -0.1674 0.016 -10.327 0.000 -0.199 -0.136  
ar.L2 -0.1701 0.014 -12.560 0.000 -0.197 -0.144  
sigma2 10.2386 0.143 71.681 0.000 9.959 10.519  
===================================================================================  
Ljung-Box (L1) (Q): 0.15 Jarque-Bera (JB): 76125.00  
Prob(Q): 0.70 Prob(JB): 0.00  
Heteroskedasticity (H): 0.35 Skew: 3.11  
Prob(H) (two-sided): 0.00 Kurtosis: 50.08  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_228 2010-01-01 - 2018-03-01

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 2128  
Model: ARIMA(0, 1, 0) Log Likelihood -6969.653  
Date: Mon, 20 May 2024 AIC 13941.306  
Time: 18:59:15 BIC 13946.968  
Sample: 0 HQIC 13943.379  
 - 2128   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 41.0851 0.524 78.402 0.000 40.058 42.112  
===================================================================================  
Ljung-Box (L1) (Q): 11.24 Jarque-Bera (JB): 8100.25  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.13 Skew: -0.06  
Prob(H) (two-sided): 0.00 Kurtosis: 12.56  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 2128  
Model: ARIMA(3, 1, 0) Log Likelihood -6845.620  
Date: Mon, 20 May 2024 AIC 13713.240  
Time: 18:59:15 BIC 13775.527  
Sample: 0 HQIC 13736.039  
 - 2128   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.9887 0.100 -9.913 0.000 -1.184 -0.793  
x2 0.0028 0.001 1.922 0.055 -5.49e-05 0.006  
x3 1.661e-05 0.007 0.003 0.998 -0.013 0.013  
x4 -4.9138 1.835 -2.678 0.007 -8.510 -1.318  
x5 -0.0183 0.003 -6.299 0.000 -0.024 -0.013  
x6 -15.9532 2.391 -6.673 0.000 -20.639 -11.267  
x7 67.1107 15.590 4.305 0.000 36.555 97.666  
ar.L1 0.0329 0.012 2.780 0.005 0.010 0.056  
ar.L2 -0.0281 0.012 -2.343 0.019 -0.052 -0.005  
ar.L3 -0.0544 0.013 -4.175 0.000 -0.080 -0.029  
sigma2 36.5620 0.562 65.080 0.000 35.461 37.663  
===================================================================================  
Ljung-Box (L1) (Q): 0.02 Jarque-Bera (JB): 7514.51  
Prob(Q): 0.89 Prob(JB): 0.00  
Heteroskedasticity (H): 0.15 Skew: -0.22  
Prob(H) (two-sided): 0.00 Kurtosis: 12.20  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_228 2018-03-01 - 2020-03-05

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 524  
Model: ARIMA(0, 1, 0) Log Likelihood -1322.027  
Date: Mon, 20 May 2024 AIC 2646.054  
Time: 18:59:15 BIC 2650.313  
Sample: 0 HQIC 2647.722  
 - 524   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 9.1859 0.255 35.980 0.000 8.686 9.686  
===================================================================================  
Ljung-Box (L1) (Q): 13.93 Jarque-Bera (JB): 1606.69  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.92 Skew: 1.70  
Prob(H) (two-sided): 0.56 Kurtosis: 10.89  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 524  
Model: ARIMA(3, 1, 0) Log Likelihood -1285.388  
Date: Mon, 20 May 2024 AIC 2592.777  
Time: 18:59:15 BIC 2639.632  
Sample: 0 HQIC 2611.127  
 - 524   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.1782 0.107 -1.659 0.097 -0.389 0.032  
x2 -0.0027 0.001 -1.920 0.055 -0.005 5.49e-05  
x3 0.0093 0.007 1.259 0.208 -0.005 0.024  
x4 1.9960 6.843 0.292 0.771 -11.415 15.407  
x5 -0.0102 0.003 -3.096 0.002 -0.017 -0.004  
x6 0.8079 3.770 0.214 0.830 -6.582 8.198  
x7 27.0205 8.648 3.125 0.002 10.072 43.969  
ar.L1 0.1508 0.043 3.473 0.001 0.066 0.236  
ar.L2 0.0461 0.044 1.042 0.297 -0.041 0.133  
ar.L3 0.0468 0.050 0.932 0.351 -0.052 0.145  
sigma2 7.9863 0.219 36.397 0.000 7.556 8.416  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 2822.97  
Prob(Q): 0.99 Prob(JB): 0.00  
Heteroskedasticity (H): 0.88 Skew: 1.83  
Prob(H) (two-sided): 0.39 Kurtosis: 13.78  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_228 2020-03-05 - 2023-06-05

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 846  
Model: ARIMA(0, 1, 0) Log Likelihood -2615.813  
Date: Mon, 20 May 2024 AIC 5233.626  
Time: 18:59:15 BIC 5238.365  
Sample: 0 HQIC 5235.442  
 - 846   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 28.5997 0.284 100.764 0.000 28.043 29.156  
===================================================================================  
Ljung-Box (L1) (Q): 0.27 Jarque-Bera (JB): 76579.72  
Prob(Q): 0.60 Prob(JB): 0.00  
Heteroskedasticity (H): 0.20 Skew: 3.26  
Prob(H) (two-sided): 0.00 Kurtosis: 49.18  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 846  
Model: ARIMA(3, 1, 0) Log Likelihood -2571.143  
Date: Mon, 20 May 2024 AIC 5164.286  
Time: 18:59:15 BIC 5216.419  
Sample: 0 HQIC 5184.262  
 - 846   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.2728 0.067 -4.082 0.000 -0.404 -0.142  
x2 -0.0014 0.001 -1.907 0.056 -0.003 3.86e-05  
x3 -0.0078 0.007 -1.096 0.273 -0.022 0.006  
x4 -0.6152 5.172 -0.119 0.905 -10.752 9.521  
x5 -0.0135 0.004 -3.336 0.001 -0.021 -0.006  
x6 1.5760 4.301 0.366 0.714 -6.853 10.005  
x7 23.1134 8.437 2.740 0.006 6.577 39.649  
ar.L1 -0.0353 0.011 -3.161 0.002 -0.057 -0.013  
ar.L2 0.0355 0.017 2.126 0.033 0.003 0.068  
ar.L3 0.2011 0.013 15.785 0.000 0.176 0.226  
sigma2 25.7220 0.547 47.023 0.000 24.650 26.794  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 39645.80  
Prob(Q): 0.99 Prob(JB): 0.00  
Heteroskedasticity (H): 0.23 Skew: 2.22  
Prob(H) (two-sided): 0.00 Kurtosis: 36.26  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_250 2010-01-01 - 2012-09-24

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 710  
Model: ARIMA(0, 1, 0) Log Likelihood -2132.280  
Date: Mon, 20 May 2024 AIC 4266.561  
Time: 18:59:15 BIC 4271.125  
Sample: 0 HQIC 4268.324  
 - 710   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 23.9751 0.581 41.269 0.000 22.836 25.114  
===================================================================================  
Ljung-Box (L1) (Q): 0.03 Jarque-Bera (JB): 1710.31  
Prob(Q): 0.87 Prob(JB): 0.00  
Heteroskedasticity (H): 1.69 Skew: -0.01  
Prob(H) (two-sided): 0.00 Kurtosis: 10.61  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 710  
Model: ARIMA(2, 1, 0) Log Likelihood -2122.651  
Date: Mon, 20 May 2024 AIC 4261.303  
Time: 18:59:15 BIC 4297.814  
Sample: 0 HQIC 4275.408  
 - 710   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.1624 0.120 -1.351 0.177 -0.398 0.073  
x2 -0.0288 0.010 -2.996 0.003 -0.048 -0.010  
x3 -2.0519 2.439 -0.841 0.400 -6.832 2.728  
x4 0.8988 3.496 0.257 0.797 -5.953 7.750  
x5 9.1723 23.520 0.390 0.697 -36.927 55.272  
ar.L1 -0.0152 0.041 -0.373 0.709 -0.095 0.065  
ar.L2 0.0913 0.032 2.874 0.004 0.029 0.154  
sigma2 23.3302 0.626 37.274 0.000 22.103 24.557  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 1537.62  
Prob(Q): 0.96 Prob(JB): 0.00  
Heteroskedasticity (H): 1.74 Skew: -0.13  
Prob(H) (two-sided): 0.00 Kurtosis: 10.21  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_250 2012-09-24 - 2020-03-23

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1954  
Model: ARIMA(0, 1, 0) Log Likelihood -4270.388  
Date: Mon, 20 May 2024 AIC 8542.775  
Time: 18:59:15 BIC 8548.352  
Sample: 0 HQIC 8544.825  
 - 1954   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 4.6426 0.052 88.545 0.000 4.540 4.745  
===================================================================================  
Ljung-Box (L1) (Q): 19.30 Jarque-Bera (JB): 16752.28  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.39 Skew: 1.33  
Prob(H) (two-sided): 0.00 Kurtosis: 17.10  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1954  
Model: ARIMA(2, 1, 0) Log Likelihood -4244.761  
Date: Mon, 20 May 2024 AIC 8505.522  
Time: 18:59:15 BIC 8550.139  
Sample: 0 HQIC 8521.924  
 - 1954   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0952 0.039 -2.441 0.015 -0.172 -0.019  
x2 -0.0052 0.003 -1.831 0.067 -0.011 0.000  
x3 -0.9310 0.840 -1.108 0.268 -2.578 0.716  
x4 2.3751 1.268 1.873 0.061 -0.110 4.860  
x5 14.1638 3.497 4.050 0.000 7.309 21.018  
ar.L1 0.0855 0.013 6.556 0.000 0.060 0.111  
ar.L2 0.0120 0.012 1.016 0.310 -0.011 0.035  
sigma2 4.5224 0.058 78.417 0.000 4.409 4.635  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 15258.97  
Prob(Q): 1.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.38 Skew: 1.24  
Prob(H) (two-sided): 0.00 Kurtosis: 16.47  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_250 2020-03-23 - 2024-01-18

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 997  
Model: ARIMA(0, 1, 0) Log Likelihood -2187.335  
Date: Mon, 20 May 2024 AIC 4376.671  
Time: 18:59:15 BIC 4381.574  
Sample: 0 HQIC 4378.535  
 - 997   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 4.7320 0.065 72.584 0.000 4.604 4.860  
===================================================================================  
Ljung-Box (L1) (Q): 7.66 Jarque-Bera (JB): 15294.44  
Prob(Q): 0.01 Prob(JB): 0.00  
Heteroskedasticity (H): 2.84 Skew: 0.54  
Prob(H) (two-sided): 0.00 Kurtosis: 22.17  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 997  
Model: ARIMA(2, 1, 0) Log Likelihood -2161.824  
Date: Mon, 20 May 2024 AIC 4339.647  
Time: 18:59:15 BIC 4378.877  
Sample: 0 HQIC 4354.560  
 - 997   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.0473 0.032 -1.461 0.144 -0.111 0.016  
x2 -0.0012 0.005 -0.263 0.793 -0.011 0.008  
x3 -1.7453 2.683 -0.651 0.515 -7.003 3.513  
x4 -4.8839 1.576 -3.099 0.002 -7.973 -1.795  
x5 15.7838 3.045 5.183 0.000 9.816 21.752  
ar.L1 -0.1114 0.012 -9.293 0.000 -0.135 -0.088  
ar.L2 0.1094 0.020 5.554 0.000 0.071 0.148  
sigma2 4.4956 0.077 58.748 0.000 4.346 4.646  
===================================================================================  
Ljung-Box (L1) (Q): 0.02 Jarque-Bera (JB): 12789.19  
Prob(Q): 0.90 Prob(JB): 0.00  
Heteroskedasticity (H): 2.78 Skew: 0.61  
Prob(H) (two-sided): 0.00 Kurtosis: 20.51  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_265 2013-04-02 - 2015-05-15

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 552  
Model: ARIMA(0, 1, 0) Log Likelihood -2147.649  
Date: Mon, 20 May 2024 AIC 4297.298  
Time: 18:59:15 BIC 4301.610  
Sample: 0 HQIC 4298.983  
 - 552   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 142.2527 3.123 45.557 0.000 136.133 148.373  
===================================================================================  
Ljung-Box (L1) (Q): 0.20 Jarque-Bera (JB): 4260.77  
Prob(Q): 0.66 Prob(JB): 0.00  
Heteroskedasticity (H): 0.68 Skew: 1.40  
Prob(H) (two-sided): 0.01 Kurtosis: 16.33  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 552  
Model: ARIMA(6, 1, 0) Log Likelihood -2126.234  
Date: Mon, 20 May 2024 AIC 4278.467  
Time: 18:59:15 BIC 4334.520  
Sample: 0 HQIC 4300.370  
 - 552   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.8276 0.385 -2.151 0.031 -1.582 -0.074  
x2 0.0053 0.005 1.028 0.304 -0.005 0.016  
x3 -0.0160 0.029 -0.551 0.581 -0.073 0.041  
x4 -11.5848 8.372 -1.384 0.166 -27.994 4.824  
x5 -0.0409 0.012 -3.371 0.001 -0.065 -0.017  
x6 47.9906 15.789 3.039 0.002 17.044 78.937  
ar.L1 0.0058 0.040 0.146 0.884 -0.072 0.084  
ar.L2 0.0475 0.036 1.332 0.183 -0.022 0.117  
ar.L3 0.0241 0.026 0.925 0.355 -0.027 0.075  
ar.L4 -0.1300 0.036 -3.617 0.000 -0.201 -0.060  
ar.L5 -0.0482 0.034 -1.431 0.153 -0.114 0.018  
ar.L6 0.0262 0.036 0.726 0.468 -0.044 0.097  
sigma2 131.5938 4.256 30.917 0.000 123.252 139.936  
===================================================================================  
Ljung-Box (L1) (Q): 0.01 Jarque-Bera (JB): 3398.55  
Prob(Q): 0.94 Prob(JB): 0.00  
Heteroskedasticity (H): 0.74 Skew: 1.25  
Prob(H) (two-sided): 0.04 Kurtosis: 14.91  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_265 2015-05-15 - 2016-12-05

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 405  
Model: ARIMA(0, 1, 0) Log Likelihood -1534.907  
Date: Mon, 20 May 2024 AIC 3071.813  
Time: 18:59:15 BIC 3075.815  
Sample: 0 HQIC 3073.397  
 - 405   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 116.8285 4.234 27.596 0.000 108.531 125.126  
===================================================================================  
Ljung-Box (L1) (Q): 13.85 Jarque-Bera (JB): 549.21  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 0.83 Skew: 0.67  
Prob(H) (two-sided): 0.28 Kurtosis: 8.55  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 405  
Model: ARIMA(6, 1, 0) Log Likelihood -1494.349  
Date: Mon, 20 May 2024 AIC 3014.698  
Time: 18:59:15 BIC 3066.716  
Sample: 0 HQIC 3035.290  
 - 405   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -1.8080 0.399 -4.535 0.000 -2.589 -1.027  
x2 0.0122 0.009 1.368 0.171 -0.005 0.030  
x3 0.1120 0.028 3.948 0.000 0.056 0.168  
x4 1.1647 27.921 0.042 0.967 -53.559 55.889  
x5 -0.0135 0.007 -1.836 0.066 -0.028 0.001  
x6 25.7016 9.933 2.587 0.010 6.233 45.170  
ar.L1 0.2206 0.040 5.529 0.000 0.142 0.299  
ar.L2 -0.1926 0.041 -4.711 0.000 -0.273 -0.112  
ar.L3 0.1786 0.037 4.857 0.000 0.107 0.251  
ar.L4 -0.0977 0.042 -2.329 0.020 -0.180 -0.015  
ar.L5 -0.0126 0.046 -0.275 0.784 -0.103 0.077  
ar.L6 -0.0258 0.052 -0.500 0.617 -0.127 0.075  
sigma2 96.4246 4.296 22.445 0.000 88.005 104.845  
===================================================================================  
Ljung-Box (L1) (Q): 0.00 Jarque-Bera (JB): 536.86  
Prob(Q): 0.98 Prob(JB): 0.00  
Heteroskedasticity (H): 0.68 Skew: 0.78  
Prob(H) (two-sided): 0.03 Kurtosis: 8.43  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

Column: China\_265 2016-12-05 - 2023-06-07

# ARIMA(0,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1696  
Model: ARIMA(0, 1, 0) Log Likelihood -6142.678  
Date: Mon, 20 May 2024 AIC 12287.355  
Time: 18:59:15 BIC 12292.791  
Sample: 0 HQIC 12289.368  
 - 1696   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
sigma2 82.2803 0.474 173.433 0.000 81.350 83.210  
===================================================================================  
Ljung-Box (L1) (Q): 46.50 Jarque-Bera (JB): 340301.19  
Prob(Q): 0.00 Prob(JB): 0.00  
Heteroskedasticity (H): 1.11 Skew: 3.39  
Prob(H) (two-sided): 0.22 Kurtosis: 72.08  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).

# ARIMA(1,1,0) Summary:

SARIMAX Results   
==============================================================================  
Dep. Variable: y No. Observations: 1696  
Model: ARIMA(6, 1, 0) Log Likelihood -6014.984  
Date: Mon, 20 May 2024 AIC 12055.968  
Time: 18:59:15 BIC 12126.629  
Sample: 0 HQIC 12082.131  
 - 1696   
Covariance Type: opg   
==============================================================================  
 coef std err z P>|z| [0.025 0.975]  
------------------------------------------------------------------------------  
x1 -0.4642 0.102 -4.555 0.000 -0.664 -0.264  
x2 -0.0013 0.001 -0.974 0.330 -0.004 0.001  
x3 -0.0040 0.008 -0.480 0.631 -0.021 0.012  
x4 -3.6812 5.513 -0.668 0.504 -14.486 7.123  
x5 -0.0299 0.005 -6.129 0.000 -0.039 -0.020  
x6 -3.4345 6.842 -0.502 0.616 -16.844 9.975  
ar.L1 0.1069 0.009 12.300 0.000 0.090 0.124  
ar.L2 0.2034 0.008 25.664 0.000 0.188 0.219  
ar.L3 0.0899 0.007 12.079 0.000 0.075 0.105  
ar.L4 -0.0049 0.007 -0.708 0.479 -0.018 0.009  
ar.L5 0.0490 0.012 4.187 0.000 0.026 0.072  
ar.L6 -0.1068 0.012 -8.796 0.000 -0.131 -0.083  
sigma2 70.8849 0.866 81.898 0.000 69.188 72.581  
===================================================================================  
Ljung-Box (L1) (Q): 0.49 Jarque-Bera (JB): 198286.54  
Prob(Q): 0.49 Prob(JB): 0.00  
Heteroskedasticity (H): 1.20 Skew: 1.61  
Prob(H) (two-sided): 0.03 Kurtosis: 55.89  
===================================================================================  
  
Warnings:  
[1] Covariance matrix calculated using the outer product of gradients (complex-step).