**Alguns modelos para incidência de dengue em Campinas e sua relação com temperatura e chuva – 1998 a 2014**

**ARMAX (2,1) – 2 lags de temperatura e chuva, dummies para anos de epidemia (2007, 2013, 2014)**

Dependent Variable: LOGCASOS_DESSAZ_DIFF
Method: ARMA Maximum Likelihood (OPG - BHHH)
Date: 01/03/24 Time: 12:08
Sample: 1998M04 2014M12
Included observations: 201
Convergence achieved after 13 iterations
Coefficient covariance computed using outer product of gradients

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -0.017482 | 0.030574 | -0.571780 | 0.5682 |
| LOGCHUVA_DESSAZ_DIFF(-1) | 0.002979 | 0.056492 | 0.052737 | 0.9580 |
| LOGCHUVA_DESSAZ_DIFF(-2) | 0.074490 | 0.049470 | 1.505759 | 0.1338 |
| LOGTEMPMEDIA_DESSAZ_DIFF(-1) | 1.782197 | 0.981772 | 1.815286 | 0.0711 |
| LOGTEMPMEDIA_DESSAZ_DIFF(-2) | 0.951041 | 1.051952 | 0.904073 | 0.3671 |
| DUMDATE1 | 0.337107 | 0.535164 | 0.629914 | 0.5295 |
| DUMDATE2 | 0.377602 | 0.678410 | 0.556598 | 0.5785 |
| DUMDATE3 | 0.462503 | 0.347983 | 1.329095 | 0.1854 |
| AR(1) | 0.879712 | 0.156979 | 5.604000 | 0.0000 |
| AR(2) | -0.228313 | 0.070152 | -3.254538 | 0.0013 |
| MA(1) | -0.771251 | 0.142135 | -5.426168 | 0.0000 |
| SIGMASQ | 0.348536 | 0.037969 | 9.179498 | 0.0000 |

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|---|---|---|---|
| R-squared | 0.116290 | Mean dependent var | -0.000500 |
| Adjusted R-squared | 0.064858 | S.D. dependent var | 0.629581 |
| S.E. of regression | 0.608823 | Akaike info criterion | 1.904087 |
| Sum squared resid | 70.05566 | Schwarz criterion | 2.101299 |
| Log likelihood | -179.3607 | Hannan-Quinn criter. | 1.983887 |
| F-statistic | 2.261015 | Durbin-Watson stat | 1.982958 |
| Prob(F-statistic) | 0.013105 | | |

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|---|---|---|
| Inverted AR Roots | .44-.19i | .44+.19i |
| Inverted MA Roots | .77 | |

**ARDL (2, 2, 2) – 2 lags de temperatura e chuva, dummies para anos de epidemia (2007, 2013, 2014)**

Dependent Variable: LOGCASOS_DESSAZ_DIFF
Method: ARDL
Date: 01/03/24 Time: 16:10
Sample (adjusted): 1998M04 2014M12
Included observations: 201 after adjustments
Dependent lags: 2 (Fixed)
Dynamic regressors (2 lags, fixed): LOGCHUVA_DESSAZ_DIFF
LOGTEMPMEDIA_DESSAZ_DIFF
Fixed regressors: DUMDATE1 DUMDATE2 DUMDATE3 C

| Variable | Coefficient | Std. Error | t-Statistic | Prob.* |
|---|---|---|---|---|
| LOGCASOS_DESSAZ_DIFF(-1) | 0.119139 | 0.074003 | 1.609920 | 0.1091 |
| LOGCASOS_DESSAZ_DIFF(-2) | -0.080351 | 0.074532 | -1.078079 | 0.2824 |
| LOGCHUVA_DESSAZ_DIFF | -0.000399 | 0.051285 | -0.007776 | 0.9938 |
| LOGCHUVA_DESSAZ_DIFF(-1) | 0.004533 | 0.055201 | 0.082126 | 0.9346 |
| LOGCHUVA_DESSAZ_DIFF(-2) | 0.071724 | 0.050540 | 1.419152 | 0.1575 |
| LOGTEMPMEDIA_DESSAZ_DIFF | 0.456910 | 0.972681 | 0.469742 | 0.6391 |
| LOGTEMPMEDIA_DESSAZ_DIFF(-1) | 2.306570 | 1.145594 | 2.013427 | 0.0455 |
| LOGTEMPMEDIA_DESSAZ_DIFF(-2) | 1.291045 | 0.982194 | 1.314450 | 0.1903 |
| DUMDATE1 | 0.364303 | 0.320943 | 1.135101 | 0.2578 |
| DUMDATE2 | 0.399810 | 0.319060 | 1.253089 | 0.2117 |
| DUMDATE3 | 0.684275 | 0.321387 | 2.129132 | 0.0345 |
| C | -0.029884 | 0.045152 | -0.661847 | 0.5089 |

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|---|---|---|---|
| R-squared | 0.087476 | Mean dependent var | -0.000500 |
| Adjusted R-squared | 0.034366 | S.D. dependent var | 0.629581 |
| S.E. of regression | 0.618669 | Akaike info criterion | 1.935351 |
| Sum squared resid | 72.33993 | Schwarz criterion | 2.132564 |
| Log likelihood | -182.5028 | Hannan-Quinn criter. | 2.015152 |
| F-statistic | 1.647071 | Durbin-Watson stat | 1.966875 |
| Prob(F-statistic) | 0.088617 | | |

*Note: p-values and any subsequent tests do not account for model selection.

**FDL – 2 lags de temperatura e chuva, dummies para anos de epidemia (2007, 2013, 2014)**

Dependent Variable: LOGCASOS_DESSAZ_DIFF
Method: Least Squares
Date: 01/03/24 Time: 15:27
Sample (adjusted): 1998M04 2014M12
Included observations: 201 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -0.031546 | 0.044998 | -0.701049 | 0.4841 |
| LOGTEMPMEDIA_DESSAZ_DIFF(-1) | 2.090984 | 0.940258 | 2.223840 | 0.0273 |
| LOGTEMPMEDIA_DESSAZ_DIFF(-2) | 1.437443 | 0.940746 | 1.527982 | 0.1282 |
| LOGCHUVA_DESSAZ_DIFF(-1) | -0.000588 | 0.048143 | -0.012212 | 0.9903 |
| LOGCHUVA_DESSAZ_DIFF(-2) | 0.068962 | 0.048759 | 1.414321 | 0.1589 |
| DUMDATE1 | 0.410679 | 0.312809 | 1.312877 | 0.1908 |
| DUMDATE2 | 0.423602 | 0.315161 | 1.344079 | 0.1805 |
| DUMDATE3 | 0.721672 | 0.312938 | 2.306114 | 0.0222 |

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|---|---|---|---|
| R-squared | 0.068887 | Mean dependent var | -0.000500 |
| Adjusted R-squared | 0.035117 | S.D. dependent var | 0.629581 |
| S.E. of regression | 0.618428 | Akaike info criterion | 1.915716 |
| Sum squared resid | 73.81350 | Schwarz criterion | 2.047191 |
| Log likelihood | -184.5294 | Hannan-Quinn criter. | 1.968916 |
| F-statistic | 2.039844 | Durbin-Watson stat | 1.734926 |
| Prob(F-statistic) | 0.052040 | | |