

Results are obtained with  $h_0^P$  estimated

| CALIBRATED PARAMETERS ON WEDNESDAYS, $h_0^Q$ IS LAST MLEP, THEN 1 WEEK UPDATED |                |                |                |                |                |                |                |                |                |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| $\theta$   | 2010           | 2011           | 2012           | 2013           | 2014           | 2015           | 2016           | 2017           | 2018           |
| $\omega$   | $4.2678e-09$   | $3.2988e-07$   | $3.3650e-08$   | $3.8487e-07$   | $1.2739e-07$   | $4.4942e-08$   | $2.5305e-08$   | $3.9319e-08$   | $3.5718e-08$   |
| <b>std</b>   | $(1.6793e-08)$ | $(1.5604e-06)$ | $(1.6574e-07)$ | $(1.3052e-06)$ | $(4.5656e-07)$ | $(2.0855e-07)$ | $(1.4769e-07)$ | $(1.7009e-07)$ | $(2.2435e-07)$ |
| <b>median</b>  | $5.6987e-10$   | $1.0301e-09$   | $8.8539e-10$   | $1.3676e-09$   | $7.4251e-10$   | $1.4987e-09$   | $1.0172e-09$   | $4.0373e-10$   | $5.6810e-10$   |
| $\alpha$   | $1.8159e-05$   | $1.5399e-05$   | $9.8980e-06$   | $6.3241e-06$   | $7.2627e-06$   | $7.5611e-06$   | $5.1463e-06$   | $2.3495e-06$   | $1.0951e-05$   |
| <b>std</b>   | $(1.9473e-05)$ | $(2.0907e-05)$ | $(1.4306e-05)$ | $(8.1191e-06)$ | $(9.5274e-06)$ | $(7.5089e-06)$ | $(5.8282e-06)$ | $(3.0574e-06)$ | $(1.4936e-05)$ |
| <b>median</b>  | $1.0250e-05$   | $7.6580e-06$   | $4.5292e-06$   | $3.1281e-06$   | $2.9569e-06$   | $4.5726e-06$   | $2.9817e-06$   | $1.4483e-06$   | $2.3151e-06$   |
| $\beta$  | 0.6274         | 0.5663         | 0.7006         | 0.7210         | 0.6181         | 0.5382         | 0.6249         | 0.7420         | 0.4653         |
| <b>std</b>   | $(0.2834)$     | $(0.2866)$     | $(0.2549)$     | $(0.2507)$     | $(0.3079)$     | $(0.2570)$     | $(0.2245)$     | $(0.2376)$     | $(0.3986)$     |
| <b>median</b>  | 0.7368         | 0.6567         | 0.8002         | 0.8149         | 0.7524         | 0.6542         | 0.6945         | 0.8117         | 0.5674         |
| $\gamma^*$   | 132.4933       | 192.2414       | 181.4591       | 253.9687       | 268.8038       | 279.7662       | 299.2539       | 328.2238       | 217.0968       |
| <b>std</b>   | $(51.3976)$    | $(92.7353)$    | $(81.0421)$    | $(194.9650)$   | $(238.0990)$   | $(176.0622)$   | $(156.8154)$   | $(113.5621)$   | $(140.3093)$   |
| <b>median</b>  | 127.9434       | 175.8916       | 174.2587       | 184.1932       | 222.8042       | 257.4585       | 297.1472       | 325.0299       | 197.6437       |
| $h_0^Q$  | $1.6463e-03$   | $3.2860e-04$   | $7.3152e-05$   | $4.4701e-04$   | $3.5377e-04$   | 0.0001         | $1.5669e-04$   | $2.2842e-05$   | $1.7238e-04$   |
| <b>std</b>   | $(1.0077e-02)$ | $(6.6105e-04)$ | $(4.5392e-05)$ | $(2.4077e-03)$ | $(1.6367e-03)$ | $(7.3115e-05)$ | $(5.7410e-04)$ | $(1.9908e-05)$ | $(7.2729e-04)$ |
| <b>median</b>  | $1.0380e-04$   | $1.2292e-04$   | $5.9497e-05$   | $3.9819e-05$   | $3.3190e-05$   | $5.5742e-05$   | $5.0704e-05$   | $1.9351e-05$   | $2.2882e-05$   |
| <b>persistence</b>   | 0.8700         | 0.9176         | 0.8950         | 0.9092         | 0.8577         | 0.9149         | 0.9375         | 0.9539         | 0.7282         |
| <b>std</b>   | $(0.1807)$     | $(0.0833)$     | $(0.1822)$     | $(0.1130)$     | $(0.2142)$     | $(0.0784)$     | $(0.0690)$     | $(0.0698)$     | $(0.3308)$     |
| <b>median</b>  | 0.9423         | 0.9529         | 0.9625         | 0.9574         | 0.9408         | 0.9449         | 0.9650         | 0.9764         | 0.8877         |
| <b>MSE</b>   | 1076.7358      | 33.5041        | 5.4834         | 595.7901       | 787.4027       | 27.2153        | 216.6940       | 13.6434        | 79.4765        |
| <b>median MSE</b>  | 4.1539         | 4.7055         | 3.2478         | 2.4507         | 4.9986         | 10.3611        | 11.8782        | 5.9866         | 17.1828        |
| <b>IVRMSE</b>  | 0.5347         | 0.2470         | 0.1258         | 0.3335         | 0.4003         | 0.2410         | 0.3107         | 0.1616         | 0.2269         |
| <b>MAPE</b>  | 2.6052         | 0.5106         | 0.1884         | 3.1199         | 2.3339         | 0.5814         | 1.0457         | 0.4339         | 0.5701         |
| <b>OptLL</b>   | 146.7854       | 164.1014       | 218.3001       | 277.7894       | 260.3435       | 319.6232       | 386.7901       | 517.5671       | 455.1269       |