Results are obtained with h_0^P estimated

CALIBRATED PARAMETERS ON WEDNESDAYS USING OPTIONS LIKELIHOOD, $h_0^Q = h_t^P$									
$\boldsymbol{\theta}$	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
ω	$2.9373e-07$	$8.3428e-06$	$2.0557e-09$	$1.4603e-06$	$1.9938e-06$	$4.7113e-07$	$6.9592e-07$	$3.5608e-07$	$2.8373e-07$
std	$(1.5899e-06)$	$(2.7177e-05)$	$(4.0487e-09)$	$(4.9823e-06)$	$(6.7867e-06)$	$(2.5578e-06)$	$(3.0411e-06)$	$(2.0030e-06)$	$(1.8910e-06)$
ci	$(\pm 4.3822e-07)$	$(\pm 7.4910e-06)$	$(\pm 1.1272e-09)$	$(\pm 1.4013e-06)$	$(\pm 1.8706e-06)$	$(\pm 7.0501e-07)$	$(\pm 8.3824e-07)$	$(\pm 5.5763e-07)$	$(\pm 5.2647e-07)$
median	$4.4080e-10$	$2.1679e-09$	$1.1257e-09$	$1.5347e-09$	$1.3127e-09$	$1.3856e-09$	$7.3148e-10$	$2.7972e-10$	$4.9914e-10$
α	$2.6506e-05$	$2.2808e-05$	$2.0436e-05$	$1.5988e-05$	$1.4776e-05$	$1.3678e-05$	$1.3866e-05$	$9.2340e-06$	$1.6279e-05$
std	$(2.1430e-05)$	$(2.2449e-05)$	$(1.7810e-05)$	$(1.2247e-05)$	$(9.2665e-06)$	$(6.8892e-06)$	$(8.7406e-06)$	$(4.9557e-06)$	$(1.1036e-05)$
ci	$(\pm 5.9068e-06)$	$(\pm 6.1876e-06)$	$(\pm 4.9583e-06)$	$(\pm 3.4444e-06)$	$(\pm 2.5542e-06)$	$(\pm 1.8989e-06)$	$(\pm 2.4092e-06)$	$(\pm 1.3797e-06)$	$(\pm 3.0725e-06)$
median	$2.1958e-05$	$2.0325e-05$	$1.4954e-05$	$1.5884e-05$	$1.4270e-05$	$1.2722e-05$	$1.2912e-05$	$9.1517e-06$	$1.5918e-05$
β	0.4708	0.3164	0.4553	0.3331	0.1703	0.1908	0.2374	0.1474	0.2896
std	(0.3272)	(0.3221)	(0.3657)	(0.3768)	(0.2815)	(0.2349)	(0.3108)	(0.2931)	(0.3377)
ci	(± 0.0902)	(± 0.0888)	(± 0.1018)	(± 0.1060)	(± 0.0776)	(± 0.0647)	(± 0.0857)	(± 0.0816)	(± 0.0940)
median	0.5549	0.3131	0.6192	0.0023	0.0002	0.0090	0.0007	0.0001	0.0010
γ^*	155.5027	256.7574	176.9894	247.3834	225.9295	224.0573	257.7868	275.5854	191.7579
std	(149.9840)	(289.5641)	(121.4388)	(267.6261)	(201.9510)	(48.8853)	(247.1550)	(187.7364)	(108.0334)
ci	(± 41.3407)	(± 79.8138)	(± 33.8088)	(± 75.2711)	(± 55.6646)	(± 13.4744)	(± 68.1243)	(± 52.2661)	(± 30.0767)
median	115.7838	148.3374	137.7486	166.2098	189.4759	226.1581	205.5256	237.1314	159.7501
$h_0^Q = h_t^P$	$1.2843e-04$	$1.5885e-04$	$8.8858e-05$	$6.0313e-05$	$6.5265e-05$	$1.1085e-04$	$9.9075e-05$	$4.0828e-05$	$1.1258e-04$
std	$(8.7675e-05)$	$(1.0228e-04)$	$(4.2482e-05)$	$(3.1009e-05)$	$(3.7863e-05)$	$(6.5832e-05)$	$(7.2668e-05)$	$(2.3485e-05)$	$(8.8642e-05)$
ci	$(\pm 2.4166e-05)$	$(\pm 2.8191e-05)$	$(\pm 1.1827e-05)$	$(\pm 8.7213e-06)$	$(\pm 1.0436e-05)$	$(\pm 1.8145e-05)$	$(\pm 2.0030e-05)$	$(\pm 6.5382e-06)$	$(\pm 2.4678e-05)$
median	$1.1288e-04$	$1.3446e-04$	$8.4289e-05$	$4.8973e-05$	$5.5260e-05$	$9.2823e-05$	$7.8758e-05$	$3.3053e-05$	$9.1614e-05$
MSE	1.3115	4.7861	2.6162	4.2244	8.4450	6.3652	10.9788	23.0601	13.4936
IVRMSE	0.0639	0.0955	0.0867	0.0890	0.0933	0.0939	0.1111	0.1248	0.0897
MAPE	0.0741	0.0936	0.1184	0.1292	0.1568	0.1523	0.1709	0.2464	0.1414
OptLL	215.4291	208.3681	251.0076	333.0039	351.3072	436.8099	513.2066	555.4006	684.7143

Results are obtained with h_0^P estimated

CALIBRATED PARAMETERS ON WEDNESDAYS, $h_0^Q = \frac{\omega_0 + \alpha_0}{1 - \beta_0 - \alpha_0 \gamma_0^{*2}}$**, WITH** $\omega_0, \alpha_0, \beta_0, \gamma_0^{*2}$ **FROM MLE UNDER P AND UPDATED UNDER Q**									
$\boldsymbol{\theta}$	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
ω	$8.5029e-08$	$9.2714e-06$	$1.9246e-07$	$2.2129e-06$	$1.9389e-06$	$4.1610e-07$	$5.9987e-07$	$3.5299e-07$	$5.5812e-07$
std	$(4.4877e-07)$	$(2.7968e-05)$	$(1.0856e-06)$	$(6.4184e-06)$	$(6.6239e-06)$	$(2.4952e-06)$	$(2.9189e-06)$	$(2.0142e-06)$	$(2.7146e-06)$
ci	$(\pm 1.2370e-07)$	$(\pm 7.7090e-06)$	$(\pm 3.0224e-07)$	$(\pm 1.8052e-06)$	$(\pm 1.8258e-06)$	$(\pm 6.8777e-07)$	$(\pm 8.0455e-07)$	$(\pm 5.6074e-07)$	$(\pm 7.5576e-07)$
median	$4.8556e-10$	$1.1932e-09$	$9.6775e-10$	$1.6296e-09$	$1.4218e-09$	$1.6699e-09$	$8.8906e-10$	$3.4979e-10$	$6.2288e-10$
α	$2.5394e-05$	$2.1003e-05$	$1.8778e-05$	$1.3908e-05$	$1.3646e-05$	$1.3883e-05$	$1.3858e-05$	$8.2692e-06$	$1.5954e-05$
std	$(2.2029e-05)$	$(2.0947e-05)$	$(1.6410e-05)$	$(1.1489e-05)$	$(8.5375e-06)$	$(5.9109e-06)$	$(8.0356e-06)$	$(4.8704e-06)$	$(9.4418e-06)$
ci	$(\pm 6.0720e-06)$	$(\pm 5.7736e-06)$	$(\pm 4.5685e-06)$	$(\pm 3.2313e-06)$	$(\pm 2.3532e-06)$	$(\pm 1.6292e-06)$	$(\pm 2.2149e-06)$	$(\pm 1.3559e-06)$	$(\pm 2.6286e-06)$
median	$1.7658e-05$	$1.9181e-05$	$1.2068e-05$	$1.2723e-05$	$1.3239e-05$	$1.3217e-05$	$1.3228e-05$	$8.3302e-06$	$1.4242e-05$
β	0.5032	0.3363	0.4882	0.3724	0.1836	0.1643	0.2466	0.1768	0.2450
std	(0.3188)	(0.3212)	(0.3411)	(0.3801)	(0.2898)	(0.2274)	(0.3159)	(0.3270)	(0.3193)
ci	(± 0.0879)	(± 0.0885)	(± 0.0950)	(± 0.1069)	(± 0.0799)	(± 0.0627)	(± 0.0871)	(± 0.0910)	(± 0.0889)
median	0.5759	0.3823	0.5857	0.3025	0.0003	0.0007	0.0018	0.0001	0.0023
γ^*	152.7405	213.9027	178.3425	268.5595	254.9716	221.9130	209.9787	301.8938	202.9867
std	(136.5742)	(168.6915)	(140.6359)	(295.7190)	(239.7515)	(41.5011)	(73.9368)	(189.9283)	(132.2615)
ci	(± 37.6445)	(± 46.4971)	(± 39.1533)	(± 83.1723)	(± 66.0837)	(± 11.4391)	(± 20.3795)	(± 52.8764)	(± 36.8218)
median	112.0207	155.9251	147.8898	169.4020	202.0041	228.8470	208.6253	261.8796	167.7543
$h_0^Q = h_t^P$	$1.2504e-04$	$1.6094e-04$	$8.8020e-05$	$6.3516e-05$	$6.4968e-05$	$1.0677e-04$	$9.4593e-05$	$4.2065e-05$	$1.2042e-04$
std	$(8.4350e-05)$	$(1.0127e-04)$	$(3.9993e-05)$	$(3.0169e-05)$	$(3.7802e-05)$	$(5.3934e-05)$	$(6.6163e-05)$	$(2.5624e-05)$	$(9.2499e-05)$
ci	$(\pm 2.3250e-05)$	$(\pm 2.7914e-05)$	$(\pm 1.1134e-05)$	$(\pm 8.4851e-06)$	$(\pm 1.0419e-05)$	$(\pm 1.4866e-05)$	$(\pm 1.8237e-05)$	$(\pm 7.1338e-06)$	$(\pm 2.5752e-05)$
median	$1.0398e-04$	$1.3887e-04$	$7.9893e-05$	$5.2671e-05$	$5.4472e-05$	$8.9209e-05$	$6.9330e-05$	$3.6036e-05$	$1.0226e-04$
MSE	1.1660	4.6442	2.4437	4.3159	7.5939	6.1701	10.7231	20.7106	13.3130
IVRMSE	0.0633	0.0921	0.0863	0.0894	0.0927	0.0927	0.1089	0.1237	0.0887
MAPE	0.0734	0.0906	0.1179	0.1315	0.1531	0.1484	0.1669	0.2416	0.1395
OptLL	216.3430	211.5388	252.2146	334.4711	356.0208	438.7128	515.4908	559.3221	688.0683

Results are obtained with h_0^P estimated

CALIBRATED PARAMETERS ON WEDNESDAYS, h_0^Q IS CALIBRATED WITH RESPECT TO OPTIONS LIKELIHOOD									
$\boldsymbol{\theta}$	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
ω	$1.2384e-08$	$4.0086e-07$	$3.1333e-08$	$1.3755e-07$	$6.9525e-08$	$2.3119e-08$	$4.5524e-08$	$1.5096e-08$	$1.8178e-08$
std	$(7.1945e-08)$	$(1.5924e-06)$	$(1.6514e-07)$	$(4.7604e-07)$	$(3.7729e-07)$	$(1.2129e-07)$	$(2.3641e-07)$	$(7.4217e-08)$	$(8.3026e-08)$
ci	$(\pm 1.9830e-08)$	$(\pm 4.3891e-07)$	$(\pm 4.5975e-08)$	$(\pm 1.3389e-07)$	$(\pm 1.0399e-07)$	$(\pm 3.3431e-08)$	$(\pm 6.5163e-08)$	$(\pm 2.0662e-08)$	$(\pm 2.3115e-08)$
median	$4.2614e-10$	$1.2486e-09$	$7.9886e-10$	$1.2631e-09$	$7.7874e-10$	$1.1199e-09$	$8.6919e-10$	$5.7281e-10$	$7.1012e-10$
α	$1.8162e-05$	$1.4839e-05$	$8.9367e-06$	$6.2985e-06$	$8.1050e-06$	$7.2957e-06$	$4.6588e-06$	$2.9109e-06$	$1.3426e-05$
std	$(1.9355e-05)$	$(2.0035e-05)$	$(1.2221e-05)$	$(7.9525e-06)$	$(9.8222e-06)$	$(7.3411e-06)$	$(4.0920e-06)$	$(4.0307e-06)$	$(1.6537e-05)$
ci	$(\pm 5.3349e-06)$	$(\pm 5.5222e-06)$	$(\pm 3.4023e-06)$	$(\pm 2.2367e-06)$	$(\pm 2.7073e-06)$	$(\pm 2.0235e-06)$	$(\pm 1.1279e-06)$	$(\pm 1.1222e-06)$	$(\pm 4.6039e-06)$
median	$1.0695e-05$	$7.6836e-06$	$4.7572e-06$	$3.3952e-06$	$2.8549e-06$	$4.3648e-06$	$2.9570e-06$	$1.4933e-06$	$4.5110e-06$
β	0.6465	0.5668	0.7271	0.7325	0.6222	0.5594	0.6426	0.7106	0.5391
std	(0.2643)	(0.2919)	(0.2165)	(0.2499)	(0.3072)	(0.2501)	(0.2077)	(0.2807)	(0.3762)
ci	(± 0.0728)	(± 0.0805)	(± 0.0603)	(± 0.0703)	(± 0.0847)	(± 0.0689)	(± 0.0573)	(± 0.0781)	(± 0.1047)
median	0.7430	0.6600	0.8060	0.8158	0.7748	0.6585	0.6903	0.8071	0.6888
γ^*	134.3603	195.1009	191.4698	217.4109	237.1588	270.9957	276.1619	324.0345	227.4457
std	(48.5942)	(98.6148)	(95.9266)	(146.4449)	(111.0569)	(123.2736)	(75.2875)	(114.3511)	(110.3211)
ci	(± 13.3942)	(± 27.1816)	(± 26.7061)	(± 41.1883)	(± 30.6111)	(± 33.9784)	(± 20.7518)	(± 31.8355)	(± 30.7136)
median	127.2052	175.8919	171.5645	181.2201	221.1372	254.0407	294.1570	327.0867	198.2446
h_0^Q	$1.2662e-04$	$2.2087e-04$	$8.4211e-05$	$4.9742e-05$	$4.9380e-05$	0.0001	$6.8390e-05$	$1.8939e-05$	$1.3543e-04$
std	$(1.3048e-04)$	$(2.2980e-04)$	$(5.8095e-05)$	$(4.5784e-05)$	$(5.8697e-05)$	$(1.1334e-04)$	$(7.6510e-05)$	$(1.9366e-05)$	$(1.7217e-04)$
ci	$(\pm 3.5965e-05)$	$(\pm 6.3341e-05)$	$(\pm 1.6174e-05)$	$(\pm 1.2877e-05)$	$(\pm 1.6179e-05)$	$(\pm 3.1241e-05)$	$(\pm 2.1089e-05)$	$(\pm 5.3916e-06)$	$(\pm 4.7933e-05)$
median	$9.2058e-05$	$1.1459e-04$	$6.0478e-05$	$3.5047e-05$	$2.7422e-05$	$5.5033e-05$	$3.8411e-05$	$1.3835e-05$	$4.6850e-05$
MSE	0.6622	1.0575	1.0914	0.6991	1.0554	1.3990	1.6195	2.2744	4.8658
IVRMSE	0.0559	0.0659	0.0806	0.0776	0.0798	0.0917	0.0983	0.1006	0.0792
MAPE	0.0662	0.0726	0.1098	0.1032	0.1205	0.1355	0.1307	0.1651	0.1233
OptLL	226.0306	234.8200	265.2162	363.1728	389.5383	469.0620	572.8691	650.3873	729.6044