

Tables of the paper “Chaos” in energy futures markets: a controversial matter

Loretta Mastroeni, Pierluigi Vellucci

Fixed $m = 2$ or $m = 3$, in the following Tables we show the numerical values of the determinism coefficient κ on varying of τ .

τ	κ	τ	κ	τ	κ
2	0.501905	16	0.361204	30	0.408889
3	0.419842	17	0.375060	31	0.411305
4	0.441020	18	0.384556	32	0.412225
5	0.431399	19	0.398143	33	0.379679
6	0.392880	20	0.412437	34	0.394530
7	0.395867	21	0.406275	35	0.394847
8	0.406614	22	0.381689	36	0.417282
9	0.415095	23	0.395406	37	0.430625
10	0.391700	24	0.396505	38	0.399006
11	0.415090	25	0.409085	39	0.444272
12	0.395824	26	0.423537	40	0.417778
13	0.375370	27	0.419672	41	0.384796
14	0.407810	28	0.433819	42	0.426004
15	0.408089	29	0.428505	43	0.395696

TABLE 1. Heating oil, temporal range 06.03.1979 - 15.05.2014, number of samples 8.825, $m = 2$.

τ	κ	τ	κ	τ	κ
2	0.537274	16	0.394520	30	0.367590
3	0.478729	17	0.403045	31	0.404781
4	0.485819	18	0.401586	32	0.415901
5	0.469815	19	0.399474	33	0.404190
6	0.438405	20	0.414770	34	0.412973
7	0.454737	21	0.420266	35	0.414922
8	0.420400	22	0.404316	36	0.438795
9	0.443673	23	0.406564	37	0.401609
10	0.406686	24	0.384466	38	0.414218
11	0.410421	25	0.368297	39	0.395303
12	0.384327	26	0.393778	40	0.422266
13	0.406481	27	0.353556	41	0.399929
14	0.431002	28	0.398153	42	0.381433
15	0.409526	29	0.390039	43	0.406102

¹Dept. of Economics, Roma TRE University, via Silvio D’Amico 77, 00145 Rome, Italy.

TABLE 2. Heating oil, temporal range 06.03.1979 - 15.05.2014, number of samples 8.825, $m = 3$.

τ	κ	τ	κ	τ	κ
2	0.476278	16	0.493609	30	0.431342
3	0.423472	17	0.432316	31	0.419427
4	0.427403	18	0.407716	32	0.432981
5	0.393378	19	0.417947	33	0.427012
6	0.420013	20	0.417331	34	0.410806
7	0.451157	21	0.437138	35	0.429270
8	0.452906	22	0.411759	36	0.421174
9	0.436177	23	0.402592	37	0.446244
10	0.451256	24	0.411774	38	0.369850
11	0.431307	25	0.418427	39	0.402403
12	0.419933	26	0.378412	40	0.387175
13	0.419721	27	0.412978	41	0.440380
14	0.477181	28	0.401562	42	0.445409
15	0.459651	29	0.433165	43	0.426742

TABLE 3. Natural gas, temporal range 03.04.1990 - 15.05.2014, number of samples 6.042, $m = 2$.

τ	κ	τ	κ	τ	κ
2	0.565059	16	0.476005	30	0.448111
3	0.483286	17	0.457383	31	0.416498
4	0.472915	18	0.418325	32	0.426808
5	0.448891	19	0.430515	33	0.417782
6	0.420842	20	0.433987	34	0.411756
7	0.459661	21	0.459805	35	0.399251
8	0.473239	22	0.422080	36	0.396002
9	0.431479	23	0.423422	37	0.441582
10	0.439751	24	0.411347	38	0.387324
11	0.421026	25	0.450880	39	0.421272
12	0.403814	26	0.418336	40	0.393928
13	0.427620	27	0.420452	41	0.440154
14	0.446716	28	0.421035	42	0.460074
15	0.455369	29	0.422340	43	0.425142

TABLE 4. Natural gas, temporal range 03.04.1990 - 15.05.2014, number of samples 6.042, $m = 3$.

τ	κ	τ	κ	τ	κ
2	0.456577	16	0.385399	30	0.412300
3	0.489044	17	0.402733	31	0.432360
4	0.437471	18	0.401405	32	0.398426
5	0.465226	19	0.433295	33	0.394840
6	0.433670	20	0.412377	34	0.395173
7	0.442106	21	0.417491	35	0.408090
8	0.448837	22	0.374224	36	0.388350
9	0.417140	23	0.389844	37	0.380357
10	0.407927	24	0.408348	38	0.399800
11	0.406520	25	0.418850	39	0.408125
12	0.404014	26	0.387176	40	0.378203
13	0.398718	27	0.417511	41	0.406236
14	0.400325	28	0.419352	42	0.390825
15	0.395134	29	0.402811	43	0.406994

TABLE 5. Comex Gold GC1, temporal range 31.12.1974 - 14.05.2014, number of samples 9.884, $m = 2$.

τ	κ	τ	κ	τ	κ
2	0.506349	16	0.399333	30	0.405419
3	0.531438	17	0.387416	31	0.432056
4	0.502471	18	0.385848	32	0.384694
5	0.493774	19	0.433405	33	0.382507
6	0.463394	20	0.407365	34	0.383020
7	0.459302	21	0.431452	35	0.375921
8	0.446830	22	0.390309	36	0.363701
9	0.454075	23	0.384895	37	0.377726
10	0.425578	24	0.424898	38	0.372769
11	0.404984	25	0.407977	39	0.381669
12	0.418081	26	0.408672	40	0.362182
13	0.430476	27	0.427333	41	0.373781
14	0.424050	28	0.415859	42	0.375041
15	0.399218	29	0.390507	43	0.396761

TABLE 6. Comex Gold GC1, temporal range 31.12.1974 - 14.05.2014, number of samples 9.884, $m = 3$.

τ	κ	τ	κ	τ	κ
2	0.539251	16	0.455814	30	0.503594
3	0.584441	17	0.486815	31	0.462340
4	0.513922	18	0.487549	32	0.483290
5	0.492936	19	0.461086	33	0.464395
6	0.479199	20	0.490300	34	0.491889
7	0.477370	21	0.463890	35	0.479057
8	0.505498	22	0.498534	36	0.481710
9	0.488799	23	0.498669	37	0.522654
10	0.506318	24	0.479640	38	0.487039
11	0.509231	25	0.466970	39	0.478970
12	0.499866	26	0.492515	40	0.481595
13	0.479876	27	0.495221	41	0.507981
14	0.497210	28	0.478038	42	0.496459
15	0.463725	29	0.502236	43	0.491399

TABLE 7. Comex Silver SI1, temporal range 13.06.1963 - 15.05.2014, number of samples 12.758, $m = 2$.

τ	κ	τ	κ	τ	κ
2	0.558494	16	0.517037	30	0.534954
3	0.554552	17	0.521199	31	0.534674
4	0.551526	18	0.528505	32	0.517497
5	0.545445	19	0.525747	33	0.544510
6	0.522411	20	0.517618	34	0.535626
7	0.533848	21	0.526600	35	0.532681
8	0.541245	22	0.541457	36	0.518848
9	0.532624	23	0.536391	37	0.558470
10	0.530444	24	0.540085	38	0.520055
11	0.542110	25	0.524401	39	0.517262
12	0.555139	26	0.554486	40	0.526307
13	0.535586	27	0.529046	41	0.552292
14	0.520153	28	0.547930	42	0.535751
15	0.507704	29	0.539324	43	0.548601

TABLE 8. Comex Silver SI1, temporal range 13.06.1963 - 15.05.2014, number of samples 12.758, $m = 3$.

\mathcal{T}	κ	\mathcal{T}	κ	\mathcal{T}	κ
2	0.556027	16	0.414390	30	0.415392
3	0.548497	17	0.446478	31	0.425228
4	0.523482	18	0.434876	32	0.416906
5	0.519849	19	0.439162	33	0.416043
6	0.499945	20	0.423033	34	0.408130
7	0.479781	21	0.421653	35	0.393551
8	0.476021	22	0.448265	36	0.417855
9	0.463238	23	0.419848	37	0.422904
10	0.459457	24	0.423455	38	0.431490
11	0.478770	25	0.431844	39	0.406366
12	0.434305	26	0.411641	40	0.411940
13	0.476912	27	0.402350	41	0.427562
14	0.496633	28	0.397432	42	0.412138
15	0.474897	29	0.394947	43	0.399497

TABLE 9. ICE Coffee KC1, temporal range 17.08.1973 - 15.05.2014, number of samples 10.194, $m = 2$.

\mathcal{T}	κ	\mathcal{T}	κ	\mathcal{T}	κ
2	0.564286	16	0.467716	30	0.443061
3	0.527508	17	0.437972	31	0.442290
4	0.516443	18	0.477262	32	0.431649
5	0.505925	19	0.453044	33	0.418905
6	0.500501	20	0.420585	34	0.410515
7	0.482175	21	0.453173	35	0.403363
8	0.470494	22	0.433907	36	0.426214
9	0.461233	23	0.438626	37	0.445748
10	0.449420	24	0.464744	38	0.435190
11	0.481778	25	0.443670	39	0.455195
12	0.469494	26	0.432074	40	0.443380
13	0.456001	27	0.452799	41	0.439685
14	0.481280	28	0.424468	42	0.417532
15	0.472547	29	0.407762	43	0.415044

TABLE 10. ICE Coffee KC1, temporal range 17.08.1973 - 15.05.2014, number of samples 10.194, $m = 3$.

\mathcal{T}	κ	\mathcal{T}	κ	\mathcal{T}	κ
2	0.451341	16	0.391536	30	0.346209
3	0.425454	17	0.391666	31	0.388369
4	0.412920	18	0.371250	32	0.362042
5	0.381190	19	0.370615	33	0.344746
6	0.430972	20	0.373997	34	0.382086
7	0.417999	21	0.380140	35	0.352116
8	0.388139	22	0.366861	36	0.353302
9	0.395802	23	0.368170	37	0.372482
10	0.399394	24	0.394577	38	0.359872
11	0.369912	25	0.397551	39	0.382612
12	0.358893	26	0.382075	40	0.356340
13	0.351170	27	0.364796	41	0.323678
14	0.375912	28	0.361070	42	0.351109
15	0.346194	29	0.368136	43	0.324417

TABLE 11. CORN C1, temporal range 01.07.1959 - 15.05.2014, number of samples 13.817, $m = 2$.

τ	κ	τ	κ	τ	κ
2	0.505033	16	0.439027	30	0.405951
3	0.487838	17	0.447398	31	0.380835
4	0.441907	18	0.432988	32	0.404867
5	0.435065	19	0.407414	33	0.387662
6	0.462445	20	0.423378	34	0.399277
7	0.442093	21	0.429472	35	0.400032
8	0.435608	22	0.410383	36	0.409625
9	0.434476	23	0.393242	37	0.404391
10	0.440650	24	0.407969	38	0.388747
11	0.421803	25	0.418761	39	0.411805
12	0.404494	26	0.396383	40	0.430380
13	0.406108	27	0.401345	41	0.373831
14	0.402417	28	0.391209	42	0.402394
15	0.395700	29	0.393793	43	0.380911

TABLE 12. CORN C1, temporal range 01.07.1959 - 15.05.2014, number of samples 13.817, $m = 3$.

τ	κ	τ	κ	τ	κ
2	0.599795	16	0.478151	30	0.486520
3	0.601737	17	0.468929	31	0.492514
4	0.601512	18	0.464530	32	0.477469
5	0.592142	19	0.476411	33	0.468348
6	0.581202	20	0.497281	34	0.465446
7	0.588680	21	0.476901	35	0.487202
8	0.552939	22	0.485767	36	0.461713
9	0.567029	23	0.467441	37	0.506962
10	0.530868	24	0.478743	38	0.487459
11	0.524841	25	0.447478	39	0.513839
12	0.530614	26	0.431694	40	0.484366
13	0.491591	27	0.466702	41	0.498851
14	0.489111	28	0.448172	42	0.467551
15	0.491155	29	0.501088	43	0.457745

TABLE 13. Feeder Cattle FC1, temporal range 06.09.1973 - 15.05.2014, number of samples 10.258, $m = 2$.

τ	κ	τ	κ	τ	κ
2	0.640043	16	0.489302	30	0.478474
3	0.613383	17	0.490919	31	0.483642
4	0.597255	18	0.482210	32	0.493419
5	0.552234	19	0.516601	33	0.466394
6	0.530954	20	0.512680	34	0.489378
7	0.503293	21	0.504499	35	0.476043
8	0.515153	22	0.483551	36	0.488837
9	0.499919	23	0.481809	37	0.488027
10	0.487207	24	0.468962	38	0.457768
11	0.484792	25	0.470793	39	0.486008
12	0.490516	26	0.484314	40	0.477763
13	0.479718	27	0.486010	41	0.457731
14	0.443305	28	0.453785	42	0.489793
15	0.472483	29	0.457701	43	0.468220

TABLE 14. Feeder Cattle FC1, temporal range 06.09.1973 - 15.05.2014, number of samples 10.258, $m = 3$.

\mathcal{T}	κ	\mathcal{T}	κ	\mathcal{T}	κ
2	0.525573	16	0.427298	30	0.409819
3	0.475253	17	0.433804	31	0.429268
4	0.464536	18	0.431268	32	0.423480
5	0.453238	19	0.419124	33	0.428448
6	0.434587	20	0.407675	34	0.436650
7	0.431408	21	0.383042	35	0.422796
8	0.449332	22	0.422866	36	0.421749
9	0.429807	23	0.437535	37	0.452192
10	0.461047	24	0.418558	38	0.411072
11	0.461731	25	0.398320	39	0.417220
12	0.433362	26	0.395913	40	0.423266
13	0.408855	27	0.419960	41	0.394992
14	0.399664	28	0.449961	42	0.388671
15	0.412917	29	0.443854	43	0.414849

TABLE 15. ICE Cocoa CC1, temporal range 05.01.1970 - 15.05.2014, number of samples 11.097, $m = 2$.

\mathcal{T}	κ	\mathcal{T}	κ	\mathcal{T}	κ
2	0.572778	16	0.447859	30	0.443576
3	0.528161	17	0.462831	31	0.427137
4	0.498591	18	0.476792	32	0.440240
5	0.470945	19	0.455360	33	0.431593
6	0.472763	20	0.460207	34	0.464423
7	0.456662	21	0.438782	35	0.452166
8	0.485252	22	0.457980	36	0.453837
9	0.463721	23	0.477853	37	0.467539
10	0.475706	24	0.465215	38	0.428884
11	0.474324	25	0.455384	39	0.436341
12	0.463727	26	0.438660	40	0.442542
13	0.450775	27	0.437571	41	0.444408
14	0.455116	28	0.428954	42	0.448074
15	0.447750	29	0.448181	43	0.438062

TABLE 16. ICE Cocoa CC1, temporal range 05.01.1970 - 15.05.2014, number of samples 11.097, $m = 3$.

\mathcal{T}	κ	\mathcal{T}	κ	\mathcal{T}	κ
2	0.492298	16	0.472698	30	0.428681
3	0.472162	17	0.436757	31	0.422763
4	0.493715	18	0.441847	32	0.388044
5	0.475814	19	0.413385	33	0.395389
6	0.467972	20	0.435847	34	0.367747
7	0.465549	21	0.435235	35	0.334577
8	0.446127	22	0.412405	36	0.336839
9	0.424827	23	0.443736	37	0.347959
10	0.457588	24	0.398265	38	0.347420
11	0.420062	25	0.405449	39	0.372069
12	0.427677	26	0.422572	40	0.360875
13	0.450270	27	0.416425	41	0.377303
14	0.436820	28	0.411327	42	0.396816
15	0.460018	29	0.423270	43	0.399740

TABLE 17. Lean Hogs LN1, temporal range 25.06.1969 - 15.05.2014, number of samples 11.297, $m = 2$.

τ	κ	τ	κ	τ	κ
2	0.529423	16	0.400809	30	0.367751
3	0.507155	17	0.430022	31	0.385839
4	0.497957	18	0.416032	32	0.399092
5	0.470333	19	0.404543	33	0.354415
6	0.474202	20	0.424638	34	0.384970
7	0.450917	21	0.413555	35	0.378303
8	0.464912	22	0.406672	36	0.395438
9	0.430688	23	0.416818	37	0.366449
10	0.456829	24	0.388911	38	0.375194
11	0.443429	25	0.400635	39	0.376243
12	0.424978	26	0.410820	40	0.376696
13	0.424504	27	0.426056	41	0.408918
14	0.438864	28	0.386404	42	0.388851
15	0.432191	29	0.375949	43	0.402729

TABLE 18. Lean Hogs LN1, temporal range 25.06.1969 - 15.05.2014, number of samples 11.297, $m = 3$.

τ	κ	τ	κ	τ	κ
2	0.522350	16	0.419893	30	0.382290
3	0.470007	17	0.409531	31	0.394348
4	0.452566	18	0.404565	32	0.413796
5	0.419692	19	0.407863	33	0.371620
6	0.419816	20	0.411077	34	0.358697
7	0.431944	21	0.433626	35	0.368027
8	0.425552	22	0.438758	36	0.365205
9	0.451354	23	0.445240	37	0.372879
10	0.466300	24	0.403401	38	0.378095
11	0.436119	25	0.415691	39	0.389435
12	0.404420	26	0.401776	40	0.384164
13	0.416120	27	0.368109	41	0.368319
14	0.429348	28	0.376051	42	0.345199
15	0.446709	29	0.374654	43	0.372213

TABLE 19. Oats, temporal range 01.07.1959 - 15.05.2014, number of samples 13.817, $m = 2$.

τ	κ	τ	κ	τ	κ
2	0.541386	16	0.412184	30	0.387805
3	0.474839	17	0.346161	31	0.387027
4	0.478380	18	0.361087	32	0.401331
5	0.464176	19	0.376151	33	0.374968
6	0.443418	20	0.366446	34	0.386612
7	0.469301	21	0.401577	35	0.377185
8	0.410125	22	0.382939	36	0.389498
9	0.443665	23	0.391790	37	0.394422
10	0.450340	24	0.390028	38	0.393854
11	0.448416	25	0.363492	39	0.376516
12	0.392403	26	0.388001	40	0.379188
13	0.397943	27	0.375470	41	0.377978
14	0.411301	28	0.375208	42	0.372259
15	0.422547	29	0.395449	43	0.363693

TABLE 20. Oats, temporal range 01.07.1959 - 15.05.2014,
number of samples 13.817, $m = 3$.