Monash Time-Series Forecasting Archive Replication

Fernando Urbano* Shrey Jain[†] Aben Carrington[‡] Mukund Maheshwari[§]

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Abstract

The "Monash Time Series Forecasting Archive" significantly enhances research in time series forecasting, unveiling a meticulously selected assortment of 25 datasets across diverse sectors like energy, banking, and tourism.

This initiative tackles the pressing need for diverse, comprehensive datasets to benchmark a broad spectrum of forecasting models, spanning from conventional univariate to modern global and multivariate methodologies.

^{*}fernandourbano@uchicago.edu

[†]shreyjain@uchicago.edu

[‡]acarrington@uchicago.edu

[§]mukundmaheshwari@uchicago.edu

Table 1: Datasets in the current time series forecasting archive ${\cal L}$

	Dataset	Domain	No: of Series	Min. Length	Max. Length	No: of Freq	Missing	Competition	Multivariate
0	M1	Multiple	1023	18	150	3	No	Yes	No
1	M3	Multiple	3003	20	144	4	No	Yes	No
2	M4	Multiple	100000	19	9933	6	No	Yes	No
3	Tourism	Tourism	1311	11	333	3	No	Yes	No
4	CIF 2016	Banking	72	28	120	1	No	Yes	No
5	London Smart Meters	Energy	5560	288	39648	1	Yes	No	No
6	Aus. Electricity Demand	Energy	5	230736	232272	1	No	No	No
7	Wind Farms	Energy	339	6345	527040	1	Yes	No	No
8	Dominick	Sales	115704	28	393	1	No	No	No
9	Bitcoin	Economic	18	4581	4581	1	Yes	No	No
10	Pedestrian Counts	Transport	66	576	96424	1	No	No	No
11	Vehicle Trips	Transport	329	70	243	1	Yes	No	No
12	KDD Cup 2018	Transport	270	9504	10920	1	Yes	Yes	No
13	Weather	Weather	3010	1332	65981	1	No	No	No
14	NN5	Banking	111	791	791	2	Yes	Yes	Yes
15	Web Traffic	Web	145063	803	803	1	Yes	Yes	Yes
16	Solar	Energy	137	52560	52560	2	No	No	Yes
17	Electricity	Energy	321	26304	26304	2	No	No	Yes
18	Car Parts	Sales	2674	51	51	1	Yes	No	Yes
19	FRED-MD	Economics	107	728	728	1	No	No	Yes
20	San Francisco Traffic	Transport	862	17544	17544	2	No	No	Yes
21	Rideshare	Transport	2304	541	541	1	Yes	No	Yes
22	Hospital	Health	767	84	84	1	No	No	Yes
23	COVID Deaths	Nature	266	212	212	1	No	No	Yes
24	Temperature Rain	Nature	32072	725	725	1	Yes	No	Yes
25	Sunspot	Nature	1	73924	73924	1	Yes	No	No
26	Saugeen River Flow	Nature	1	23741	23741	1	No	No	No
27	US Births	Nature	1	7305	7305	1	No	No	No
28	Solar Power	Energy	1	7397222	7397222	1	No	No	No
29	Wind Power	Energy	1	7397147	7397147	1	No	No	No

Table 2: Mean MASE results. The best model across each dataset is highlighted in boldface.

	Dataset	SES	Theta	ETS	(DHR-) ARIMA	PR	Cat Boost	ARIMA	TBATS
0	M1 Yearly	4.938	4.191	3.771	-	4.588	4.333	4.479	3.499
1	M1 Quarterly	1.929	1.702	1.658	-	1.892	2.040	1.787	1.694
2	M1 Monthly	1.379	1.091	1.074	-	1.123	1.220	1.165	1.118
3	M3 Quarterly	1.417	1.117	1.170	-	1.248	1.449	1.240	1.256
4	M3 Monthly	1.091	0.864	0.865	-	1.010	1.076	0.873	0.861
5	M4 Yearly	-	-	-	-	-	-	-	3.437
6	M4 Quarterly	-	-	-	-	-	_	-	1.186
7	M4 Weekly	-	-	-	-	-	_	-	0.505
8	Tourism Yearly	3.253	3.015	3.395	-	3.516	3.619	3.775	3.685
9	Tourism Quarterly	3.210	1.661	1.592	-	1.643	1.821	1.776	1.835
10	Tourism Monthly	3.306	1.649	1.526	-	1.678	1.712	1.587	1.751
11	Vehicle Trips	2.273	1.914	1.964	-	2.196	2.004	2.051	1.856
12	NN5 Daily	-	-	-	-	-	0.970	-	0.858
13	NN5 Weekly	0.903	0.885	0.911	0.887	0.854	0.854	-	0.872
14	Solar Weekly	1.215	1.224	1.134	0.848	1.053	1.477	-	0.916
15	Electricity Weekly	1.536	1.476	1.526	0.878	0.916	0.813	-	0.792
16	Traffic Weekly	1.116	1.121	1.125	1.191	1.122	1.122	-	1.148
17	Rideshare	4.040	4.872	-	-	-	-	-	4.384
18	Hospital	0.813	0.761	0.765	-	0.782	0.796	0.788	0.768
19	Sunspot	0.128	0.128	0.128	-	0.099	0.073	0.067	0.064
20	Bitcoin	5.289	5.223	4.538	-	4.616	5.653	5.498	4.602
21	CIF 2016	1.291	0.997	0.841	-	1.019	1.200	0.927	0.861
22	COVID Deaths	7.776	7.793	5.326	-	8.731	8.092	6.104	5.719
23	Car Parts	0.897	0.914	0.925	-	0.755	0.853	0.927	1.002
24	Fred Md	0.617	0.698	0.468	-	8.827	0.988	0.532	0.502
25	M3 Yearly	3.167	2.774	2.860	-	3.223	3.711	3.417	3.127
26	Saugeen River Flow	1.426	1.425	2.036	-	1.674	1.430	1.548	1.477
27	US Births	4.343	2.138	1.529	-	2.094	1.690	1.917	1.453

Table 3: Mean MAE results. The best model across each dataset is highlighted in boldface.

	Dataset	SES	Theta	ETS	(DHR-) ARIMA	PR	Cat Boost	ARIMA	TBATS
0	M1 Yearly	171353.408	152799.258	146110.106	-	134246.383	249449.321	145608.869	103006.950
1	M1 Quarterly	2206.272	1981.960	2088.154	-	1630.379	1852.633	2191.104	2326.464
2	M1 Monthly	2259.039	2166.182	1905.277	-	2088.248	2085.212	2080.255	2237.507
3	M3 Quarterly	571.959	486.307	513.058	-	519.297	593.643	559.038	561.766
4	M3 Monthly	743.412	623.706	626.464	-	692.969	735.822	654.973	630.577
5	M4 Yearly	-	-	-	-	-	-	-	960.446
6	M4 Quarterly	-	-	-	-	-	-	-	570.217
7	M4 Weekly	-	-	-	-	-	-	-	296.808
8	Tourism Yearly	95579.234	90653.602	94818.891	-	82682.969	81335.926	95033.239	94121.085
9	Tourism Quarterly	15014.193	7656.490	8925.520	-	9092.579	10114.705	10448.861	9972.417
10	Tourism Monthly	5302.099	2069.960	2004.512	-	2187.277	2513.129	2532.246	2940.081
11	Vehicle Trips	29.980	23.299	21.258	-	27.243	22.732	23.456	21.045
12	NN5 Daily	-	-	-	-	-	4.200	-	3.701
13	NN5 Weekly	15.665	15.305	15.698	15.383	14.937	15.359	-	14.985
14	Solar Weekly	1202.387	1210.825	1131.012	839.884	1044.984	1475.211	-	908.651
15	Electricity Weekly	74149.179	74111.141	67737.816	28455.901	44882.524	34745.463	-	24351.984
16	Traffic Weekly	1.125	1.131	1.144	1.222	1.125	1.181	-	1.166
17	Rideshare	6.293	7.620	-	-	-	-	-	6.877
18	Hospital	21.761	18.539	17.966	-	19.237	19.114	19.742	17.429
19	Sunspot	4.933	4.933	4.933	-	3.833	2.800	2.567	2.467
20	Bitcoin	1773388665514154496.000	1773388666554302208.000	1103648627339163008.000	-	666361828014954624.000	1921071913681764352.000	1047198796681067648.000	990417434784583808.000
21	CIF 2016	581875.967	714818.577	642421.423	-	563205.570	688019.385	469132.082	855578.358
22	COVID Deaths	353.709	321.323	85.591	-	347.979	485.943	85.768	96.288
23	Car Parts	0.548	0.530	0.564	-	0.407	0.531	0.561	0.583
24	Fred Md	2798.221	3492.842	2041.415	-	8921.936	2577.592	2956.959	1989.973
25	M3 Yearly	1022.268	957.404	1031.402	-	1018.483	1144.897	1416.307	1192.847
26		21.497	21.486	30.693	-	25.241	21.562	23.338	22.262
27	US Births	1192.200	586.933	419.733	-	574.933	463.967	526.333	399.000

Table 4: Mean RMSE results. The best model across each dataset is highlighted in boldface.

	Dataset	SES	Theta	ETS	(DHR-) ARIMA	PR	Cat Boost	ARIMA	TBATS
0	M1 Yearly	193829.492	171458.069	167739.018	-	152038.685	269020.609	175343.756	116850.923
1	M1 Quarterly	2545.734	2282.647	2408.453	-	1909.312	2228.855	2538.446	2673.911
2	M1 Monthly	2725.825	2564.877	2263.963	-	2478.878	2522.902	2450.498	2594.483
3	M3 Quarterly	670.556	567.701	598.735	-	605.502	698.176	650.650	653.614
4	M3 Monthly	893.876	753.992	755.261	-	830.044	878.936	790.855	765.240
5	M4 Yearly	-	-	-	-	-	-	-	1099.947
6	M4 Quarterly	-	-	-	-	-	-	-	672.697
7	M4 Weekly	-	-	-	-	-	-	-	357.536
8	Tourism Yearly	106665.199	99914.211	104700.515	-	89645.614	89567.155	106082.605	105799.355
9	Tourism Quarterly	17270.571	9254.630	10812.342	-	11746.847	12648.379	12533.464	12001.480
10	Tourism Monthly	7039.349	2701.956	2542.962	-	2739.425	3118.009	3128.189	3661.512
11	Vehicle Trips	36.525	27.814	26.153	-	31.692	27.348	28.535	25.503
12	NN5 Daily	-	-	-	-	-	5.715	-	5.204
13	NN5 Weekly	18.825	18.647	18.816	18.550	18.615	18.711	-	18.528
14	Solar Weekly	1331.262	1341.547	1264.429	967.869	1168.177	1697.567	-	1049.014
15	Electricity Weekly	77067.872	76935.581	70368.973	32593.363	47802.075	37589.783	-	28040.934
16	Traffic Weekly	1.514	1.529	1.534	1.545	1.503	1.511	-	1.528
17	Rideshare	7.174	8.604	-	-	-	-	-	8.096
18	Hospital	26.551	22.592	22.023	-	23.479	23.287	23.837	21.281
19	Sunspot	4.946	4.946	4.946	-	3.954	3.141	2.938	2.595
20	Bitcoin	1963737266617722880.000	1963737267507696384.000	1223495717751411968.000	-	829205149080918912.000	2001995713326960128.000	1198058311991789312.000	1164279179397747712.000
21	CIF 2016	657112.422	804654.191	722397.372	-	648890.305	760026.842	526445.797	940099.906
22	COVID Deaths	403.415	370.141	102.081	-	394.066	616.978	100.463	112.998
23	Car Parts	0.784	0.782	0.802	-	0.729	0.794	0.811	0.837
24	Fred Md	3103.000	3898.722	2341.721	-	9736.928	2820.925	3312.245	2295.745
25	M3 Yearly	1172.847	1106.054	1189.215	-	1181.808	1319.162	1662.168	1386.329
26		39.794	39.787	50.392	-	47.703	39.306	45.536	42.576
27	US Births	1369.497	735.511	607.197	-	732.085	634.706	705.506	606.541

Table 5: Mean sMAPE results. The best model across each dataset is highlighted in boldface.

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	Dataset	SES	Theta	ETS	(DHR-) ARIMA	PR	Cat Boost	ARIMA	TBATS
0	M1 Yearly	0.231	0.202	0.186	-	0.188	0.200	0.195	0.174
1	M1 Quarterly	0.181	0.163	0.174	-	0.166	0.177	0.166	0.166
2	M1 Monthly	0.171	0.155	0.146	-	0.148	0.162	0.153	0.148
3	M3 Quarterly	0.109	0.092	0.097	-	0.098	0.112	0.102	0.102
4	M3 Monthly	0.162	0.139	0.141	-	0.152	0.165	0.143	0.138
5	M4 Yearly	-	-	-	-	-	-	-	0.149
6	M4 Quarterly	-	-	-	-	-	-	-	0.102
7	M4 Weekly	-	-	-	-	-	-	-	0.073
8	Tourism Yearly	0.341	0.319	0.365	-	0.469	0.328	0.334	0.339
9	Tourism Quarterly	0.274	0.154	0.151	-	0.159	0.167	0.165	0.172
10	Tourism Monthly	0.364	0.199	0.190	-	0.211	0.213	0.196	0.212
11	Vehicle Trips	0.362	0.301	0.313	-	0.350	0.308	0.308	0.291
12	NN5 Daily	-	-	-	-	-	0.239	-	0.211
13	NN5 Weekly	0.122	0.120	0.123	0.118	0.114	0.117	-	0.116
14	Solar Weekly	0.246	0.248	0.229	0.179	0.217	0.285	-	0.191
15	Electricity Weekly	0.142	0.146	0.141	0.108	0.100	0.097	-	0.085
16	Traffic Weekly	0.124	0.125	0.126	0.134	0.125	0.130	-	0.128
17	Rideshare	1.413	1.540	-	-	-	-	-	1.377
18	Hospital	0.179	0.173	0.175	-	0.176	0.179	0.178	0.176
19	Sunspot	1.924	1.924	1.924	-	1.901	1.858	1.730	1.860
20	Bitcoin	0.208	0.302	0.191	-	0.215	0.306	0.269	0.200
21	CIF 2016	0.149	0.130	0.122	-	0.123	0.151	0.114	0.122
22	COVID Deaths	0.153	0.156	0.086	-	0.183	0.158	0.092	0.087
23	Car Parts	0.649	0.593	0.658	-	0.432	0.655	0.657	0.659
24	Fred Md	0.087	0.097	0.084	-	0.308	0.093	0.080	0.080
25	M3 Yearly	0.178	0.168	0.170	-	0.171	0.197	0.188	0.174
26	Saugeen River Flow	0.360	0.360	0.675	-	0.453	0.362	0.398	0.373
27	US Births	0.118	0.058	0.041	-	0.058	0.045	0.052	0.038

Table 6: Median MAE results. The best model across each dataset is highlighted in boldface.

	Dataset	SES	Theta	ETS	(DHR-) ARIMA	PR	Cat Boost	ARIMA	TBATS
0	M1 Yearly	379.284	255.754	191.237	-	245.666	260.838	179.979	173.359
1	M1 Quarterly	22.296	19.554	19.588	-	19.195	19.804	16.228	18.871
2	M1 Monthly	45.333	38.230	38.508	-	37.365	39.924	40.538	35.776
3	M3 Quarterly	371.949	294.163	304.535	-	325.437	397.050	333.743	335.693
4	M3 Monthly	517.092	420.802	408.924	-	479.184	533.089	412.467	406.592
5	M4 Yearly	_	-	-	-	-	-	_	429.689
6	M4 Quarterly	-	-	-	-	-	-	-	255.646
7	M4 Weekly	_	-	-	-	-	-	_	163.678
8	Tourism Yearly	4312.773	4085.983	4271.056	-	4340.899	4952.357	4623.591	4789.949
9	Tourism Quarterly	1921.000	1114.299	1003.244	-	992.119	1029.992	1021.678	1176.187
10	Tourism Monthly	967.571	478.452	457.035	-	474.722	472.551	462.532	492.461
11	Vehicle Trips	6.033	4.667	4.667	-	6.967	5.367	4.967	4.433
12	NN5 Daily	_	-	-	-	-	3.684	_	3.458
13	NN5 Weekly	14.183	13.904	14.273	14.824	12.837	13.129	_	13.727
14	Solar Weekly	1091.235	1103.196	1073.108	760.627	942.228	1276.208	_	780.039
15	Electricity Weekly	10983.750	10447.125	10992.500	6789.750	7090.875	6145.375	_	6149.875
16	Traffic Weekly	0.918	0.924	0.918	0.976	0.930	0.948	_	0.942
17	Rideshare	1.652	1.975	-	-	-	-	-	1.795
18	Hospital	6.667	6.667	6.667	-	6.667	6.917	6.833	6.833
19	Sunspot	4.933	4.933	4.933	-	3.833	2.800	2.567	2.467
20	Bitcoin	23205.448	20282.365	19387.453	-	25108.360	20920.288	29911.050	27294.269
21	CIF 2016	107.092	103.393	70.431	-	95.132	111.282	80.656	67.118
22	COVID Deaths	2.233	4.417	1.650	-	6.767	3.217	1.783	1.800
23	Car Parts	0.333	0.250	0.333	-	0.250	0.417	0.333	0.417
24	Fred Md	1.894	1.940	2.350	-	41.359	4.114	2.732	1.992
25	M3 Yearly	703.335	660.491	641.073	-	711.860	859.710	701.323	637.810
26	Saugeen River Flow	21.497	21.486	30.693	-	25.241	21.562	23.338	22.262
27	US Births	1192.200	586.933	419.733	-	574.933	463.967	526.333	399.000

Table 7: Median MASE results. The best model across each dataset is highlighted in boldface.

	Dataset	SES	Theta	ETS	(DHR-) ARIMA	PR	Cat Boost	ARIMA	TBATS
0	M1 Yearly	3.772	3.155	2.324	-	2.847	2.912	2.127	2.215
1	M1 Quarterly	1.417	1.264	1.196	-	1.376	1.411	1.171	1.200
2	M1 Monthly	1.167	0.885	0.851	-	0.947	1.016	0.896	0.902
3	M3 Quarterly	1.073	0.831	0.855	-	0.902	1.126	0.917	0.914
4	M3 Monthly	0.861	0.721	0.712	-	0.825	0.900	0.704	0.699
5	M4 Yearly	-	-	-	-	-	-	-	2.402
6	M4 Quarterly	-	-	-	-	-	-	-	0.915
7	M4 Weekly	-	-	-	-	-	_	-	0.365
8	Tourism Yearly	2.442	2.360	2.373	-	2.356	3.000	2.719	2.518
9	Tourism Quarterly	2.309	1.348	1.275	-	1.361	1.368	1.388	1.478
10	Tourism Monthly	2.336	1.382	1.276	-	1.484	1.461	1.333	1.491
11	Vehicle Trips	1.402	0.999	0.964	-	1.429	1.129	1.020	0.963
12	NN5 Daily	-	-	-	-	-	0.902	-	0.834
13	NN5 Weekly	0.781	0.805	0.775	0.769	0.781	0.808	-	0.827
14	Solar Weekly	1.231	1.241	1.209	0.861	1.063	1.475	-	0.894
15	Electricity Weekly	1.341	1.303	1.337	0.798	0.842	0.732	-	0.705
16	Traffic Weekly	0.973	0.983	0.977	1.035	0.980	0.946	-	0.996
17	Rideshare	4.054	4.912	-	-	-	-	-	4.065
18	Hospital	0.745	0.723	0.731	-	0.740	0.754	0.736	0.734
19	Sunspot	0.128	0.128	0.128	-	0.099	0.073	0.067	0.064
20	Bitcoin	3.089	2.955	2.686	-	3.166	3.018	3.542	3.207
21	CIF 2016	0.862	0.662	0.532	-	0.746	0.861	0.559	0.537
22	COVID Deaths	1.554	2.192	0.614	-	5.313	2.052	0.982	0.605
23	Car Parts	0.562	0.482	0.562	-	0.375	0.562	0.600	0.596
24	Fred Md	0.430	0.407	0.385	-	8.458	0.618	0.355	0.370
25	M3 Yearly	2.261	1.985	1.907	-	2.267	2.726	2.003	1.900
26	Saugeen River Flow	1.426	1.425	2.036	-	1.674	1.430	1.548	1.477
27	US Births	4.343	2.138	1.529	-	2.094	1.690	1.917	1.453

Table 8: Median RMSE results. The best model across each dataset is highlighted in boldface.

	Dataset	SES	Theta	ETS	(DHR-) ARIMA	PR	Cat Boost	ARIMA	TBATS
0	M1 Yearly	416.373	323.314	230.388	-	304.766	298.106	207.818	204.193
1	M1 Quarterly	24.459	22.811	21.858	-	22.529	22.572	20.232	22.320
2	M1 Monthly	54.669	46.396	44.392	-	45.346	47.584	47.105	44.038
3	M3 Quarterly	436.253	355.795	368.908	-	378.310	480.414	405.868	400.010
4	M3 Monthly	633.562	516.786	495.969	-	582.040	634.306	499.898	493.189
5	M4 Yearly	-	_	-	-	-	-	-	495.022
6	M4 Quarterly	-	_	-	-	-	-	-	302.405
7	M4 Weekly	-	_	-	-	-	-	-	200.317
8	Tourism Yearly	4718.365	4615.953	4626.737	-	4717.099	5517.765	5174.760	5156.832
9	Tourism Quarterly	2295.668	1392.888	1207.242	-	1184.480	1200.284	1187.153	1470.608
10	Tourism Monthly	1250.260	675.095	598.878	-	596.256	619.824	606.487	670.852
11	Vehicle Trips	8.103	5.802	5.925	-	8.725	6.962	6.506	5.580
12	NN5 Daily	-	-	-	-	-	5.320	-	4.749
13	NN5 Weekly	17.524	16.816	17.523	17.487	16.263	16.060	-	16.990
14	Solar Weekly	1193.898	1214.270	1163.097	878.010	1016.249	1381.075	-	885.590
15	Electricity Weekly	12460.162	11805.765	12460.162	8268.546	8237.572	7338.988	-	7278.042
16	Traffic Weekly	1.201	1.215	1.210	1.211	1.195	1.159	-	1.214
17	Rideshare	1.841	2.190	-	-	-	-	-	2.021
18	Hospital	8.256	8.196	8.251	-	8.251	8.485	8.391	8.357
19	Sunspot	4.946	4.946	4.946	-	3.954	3.141	2.938	2.595
20	Bitcoin	30307.404	26276.808	24301.687	-	31356.350	28280.443	38188.457	33027.853
21	CIF 2016	129.055	118.287	85.771	-	109.089	130.531	103.142	79.025
22	COVID Deaths	3.087	5.290	2.205	-	8.283	3.941	2.164	2.129
23	Car Parts	0.707	0.645	0.707	-	0.577	0.707	0.707	0.707
24	Fred Md	2.306	2.362	2.702	-	45.182	4.512	3.490	2.515
25	M3 Yearly	803.708	740.102	758.616	-	824.549	968.866	814.676	752.691
26	Saugeen River Flow	39.794	39.787	50.392	-	47.703	39.306	45.536	42.576
27	US Births	1369.497	735.511	607.197	-	732.085	634.706	705.506	606.541

Table 9: Median RMSE results. The best model across each dataset is highlighted in boldface.

	Dataset	SES	Theta	ETS	(DHR-) ARIMA	PR	Cat Boost	ARIMA	TBATS
0	M1 Yearly	0.173	0.147	0.130	-	0.135	0.134	0.120	0.127
1	M1 Quarterly	0.112	0.086	0.084	-	0.101	0.116	0.097	0.086
2	M1 Monthly	0.143	0.112	0.108	-	0.119	0.125	0.115	0.113
3	M3 Quarterly	0.067	0.052	0.055	-	0.057	0.076	0.064	0.062
4	M3 Monthly	0.107	0.093	0.091	-	0.104	0.110	0.090	0.090
5	M4 Yearly	-	-	-	-	-	-	-	0.088
6	M4 Quarterly	-	-	-	-	-	-	-	0.058
7	M4 Weekly	-	-	-	-	-	-	-	0.048
8	Tourism Yearly	0.188	0.168	0.192	-	0.169	0.236	0.227	0.206
9	Tourism Quarterly	0.225	0.132	0.129	-	0.133	0.135	0.131	0.148
10	Tourism Monthly	0.302	0.174	0.172	-	0.185	0.189	0.180	0.190
11	Vehicle Trips	0.342	0.235	0.232	-	0.327	0.271	0.236	0.228
12	NN5 Daily	-	-	-	-	-	0.229	-	0.196
13	NN5 Weekly	0.109	0.110	0.108	0.111	0.105	0.104	-	0.110
14	Solar Weekly	0.248	0.249	0.244	0.176	0.218	0.282	-	0.184
15	Electricity Weekly	-	0.117	-	0.070	-	0.061	-	-
16	Traffic Weekly	0.097	0.098	0.098	0.105	0.098	0.102	-	0.101
17	Rideshare	2.000	2.000	-	-	-	-	-	1.976
18	Hospital	0.166	0.159	0.161	-	0.161	0.168	0.168	0.163
19	Sunspot	1.962	1.962	1.962	-	1.956	1.933	1.943	1.947
20	Bitcoin	0.182	0.187	0.188	-	0.172	0.187	0.192	0.175
21	CIF 2016	0.114	0.080	0.066	-	0.084	0.108	0.077	0.070
22	COVID Deaths	-	-	-	-	-	-	-	-
23	Car Parts	-	-	-	-	-	-	-	-
24	Fred Md	0.016	0.015	0.015	-	0.291	0.033	0.016	0.013
25	M3 Yearly	0.124	0.115	0.115	-	0.129	0.146	0.124	0.115
26	Saugeen River Flow	0.360	0.360	0.676	-	0.454	0.363	0.398	0.374
27	US Births	0.118	0.058	0.041	-	0.058	0.045	0.052	0.038