SUMMARY OF FORUM PROJECT

This project is designed to scrape the information of CSI300 constituents from Eastmoney forum and investigate whether there are some relationships between the number of posts and stock prices.

STRATEGY

SETTINGS

1. Periods - from 2015-01-01 to 2019-07-31
2. Universe - CSI300 (490 tickers from 2015-01-01 to 2019-07-31)
3. Benchmark – Equal weighted and CSI Index
4. Transaction cost – 0.001 (0.1%)

MEASUREMENTS

1. Holding period – 1, 3, 5, 10, 15, 20, 30 Days
2. Decile of signals – Decile 1 to Decile 10
3. Lookback Period (sum of previous posts) – Day 1 to Day 10

METHODOLOGY

1. Scraping all the posts of CSI300 constituents including those delisted tickers referred to scraping_table.py
2. Pre-processing the posts into signal matrix referred to backtest.py
    a. Filtering out the IPO period (60 days)
    b. Filtering out the days when those stocks cannot trade (halted or price is locked at the limit for the whole day)
    c. Masking the signal matrix dynamically by only including the valid tickers in different period
3. Backtesting the strategy referred to backtest.py
4. Plotting the heatmap referred to plot_heatmap.py
5. Some auxiliary functions referred to aux_func.py
    a. Downloading the prices from JoinQuant
    b. NLP sentiment analysis
    c. Creating benchmark
    d. Reformatting the data type
    e. Retrieving the constituents of CSI300

RESULTS

3:00:00PM(DAY T) – 8:59:59AM(DAY T+1)

1. Sharpe ratio of **long** the ranking signal (Original or Excess Return)
2. Sharpe ratio of **shorting** the ranking signal (Original or Excess Return)
3. Sharpe ratio of **long** the ranking signal with positive sentiment score(Original or Excess Return)
4. Sharpe ratio of **shorting** the ranking signal with positive sentiment score(Original or Excess Return)
5. Sharpe ratio of **long** the ranking signal with negative sentiment score(Original or Excess Return)
6. Sharpe ratio of **shorting** the ranking signal with negative sentiment score(Original or Excess Return)
7. Daily return of outperforming groups data (CMC5) (Original or Excess Return)
8. Cumulative return plot (CMC5) (Original or Excess Return)
9. Statistics(CMC5) (Original or Excess Return)
   a. 2015 (Original or Excess Return)
   b. 2016 (Original or Excess Return)
   c. 2017(Original or Excess Return)
   d. 2018(Original or Excess Return)
   e. 2019(Original or Excess Return)

3:00:00PM(DAY T) – 2:29:59PM(DAY T+1)

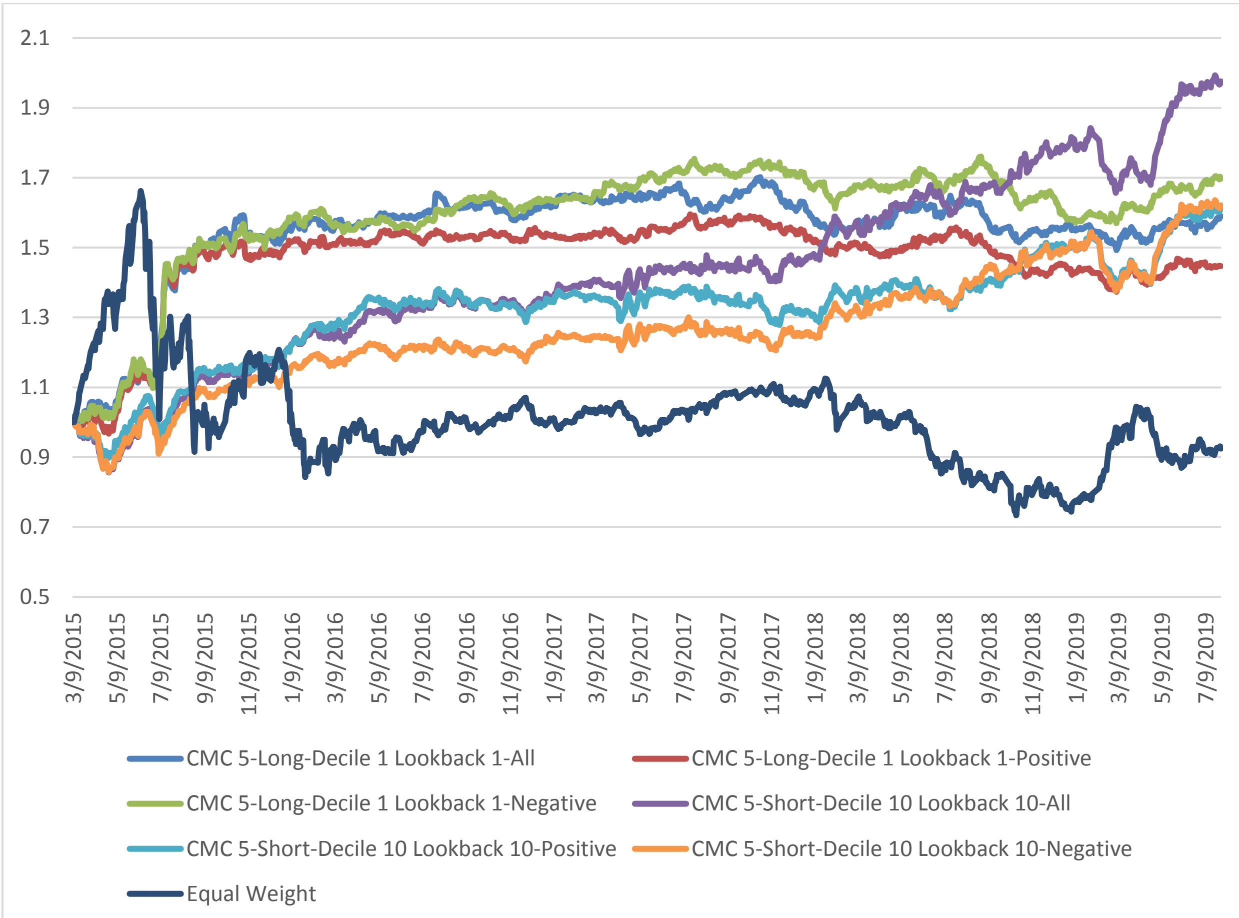
1. Sharpe ratio of **long** the ranking signal (Original or Excess Return)
2. Sharpe ratio of **shorting** the ranking signal (Original or Excess Return)
3. Sharpe ratio of **long** the ranking signal with positive sentiment score(Original or Excess Return)
4. Sharpe ratio of **shorting** the ranking signal with positive sentiment score(Original or Excess Return)
5. Sharpe ratio of **long** the ranking signal with negative sentiment score(Original or Excess Return)
6. Sharpe ratio of **shorting** the ranking signal with negative sentiment score(Original or Excess Return)
7. Daily return of outperforming groups data (CMC5) (Original or Excess Return)
8. Cumulative return plot (CMC5) (Original or Excess Return)
9. Statistics(CMC5) (Original or Excess Return)
   a. 2015 (Original or Excess Return)
   b. 2016 (Original or Excess Return)
   c. 2017(Original or Excess Return)
   d. 2018(Original or Excess Return)
   e. 2019(Original or Excess Return)

KEY FINDINGS

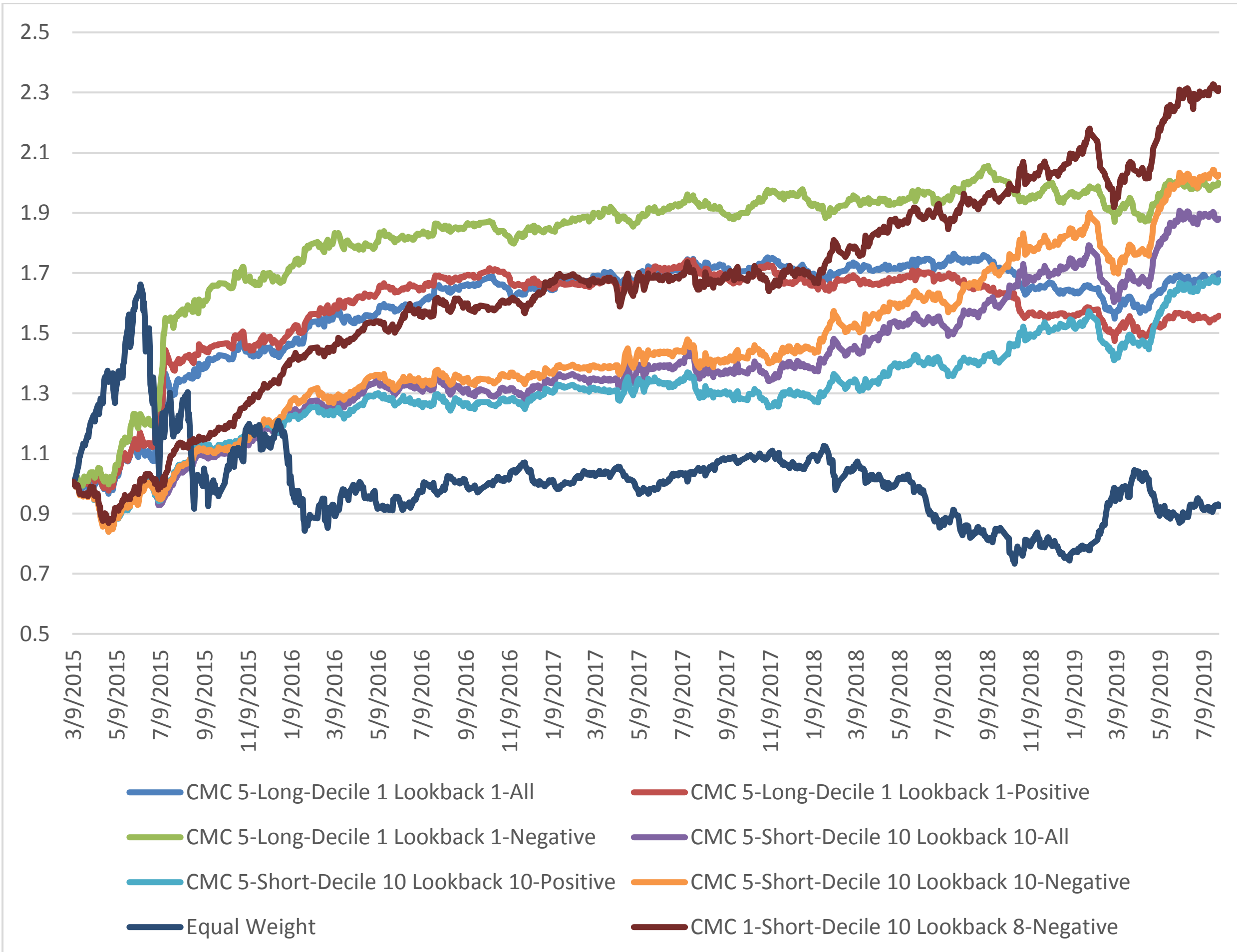
1. The ranking signal is more informative than the ranking change signal.
2. 5 days holding period is the best choice for both directions (long and short)
3. The group with the highest decile values of ranking signal and 10-days lookback period might exist some shorting opportunities
4. The group with the lowest decile values of ranking signal and 1-day lookback period might exist some long opportunities
5. Sentiment information may not be able to drive the performance in the majority of situations only except the scenario where the overwhelming negative posts for the lowest decile group is observed. (See Group CMC.5.Long.Decile.1.Lookback.1.Negative click here)
6. CMC1 is a good signal for 2:30PM to 2:30PM strategy which may have a Sharpe over 2

CUMULATIVE EXCCESS RETURN

3:00:00PM(DAY T) – 8:59:59AM(DAY T+1)

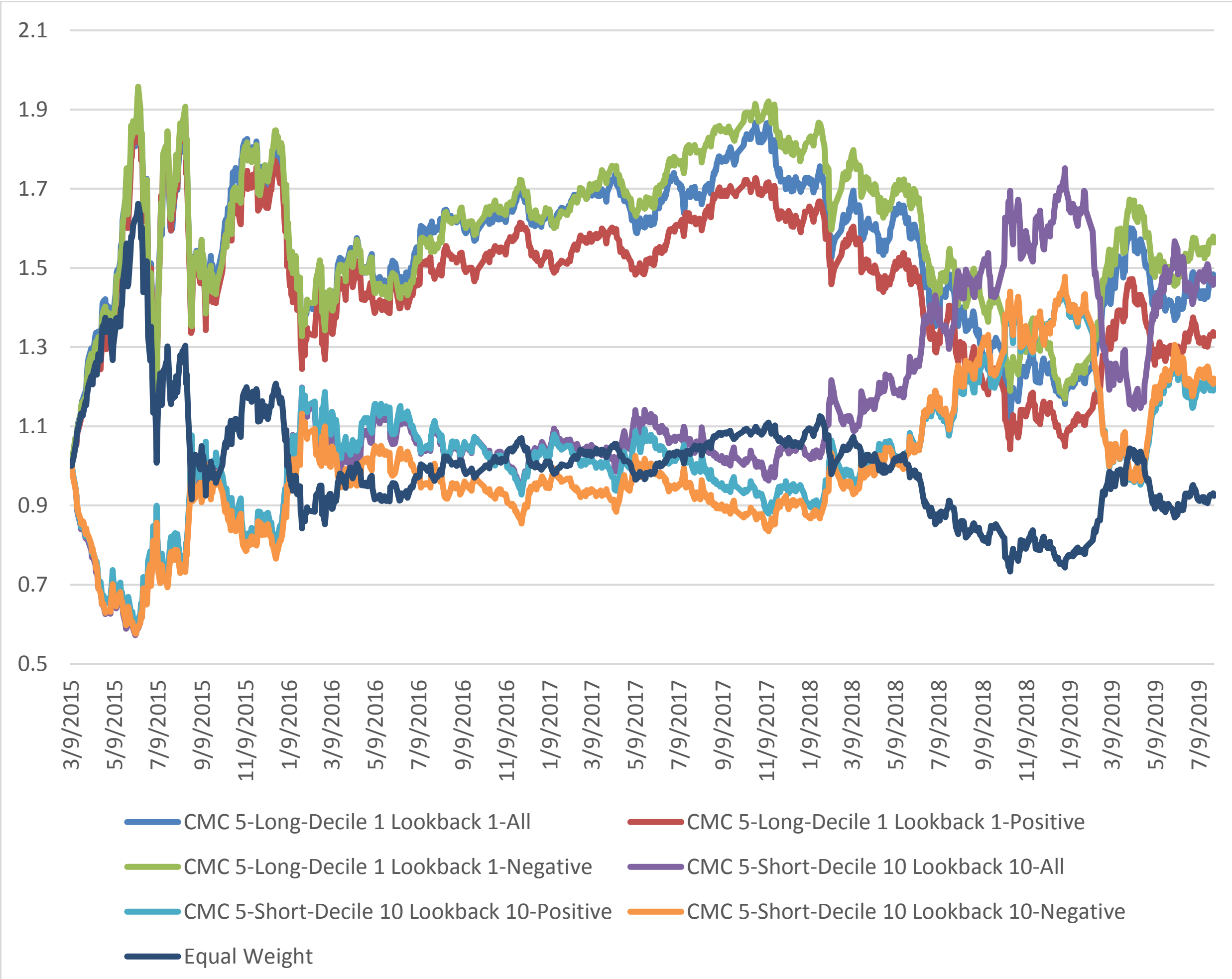


3:00:00PM(DAY T) – 2:29:59PM(DAY T+1)

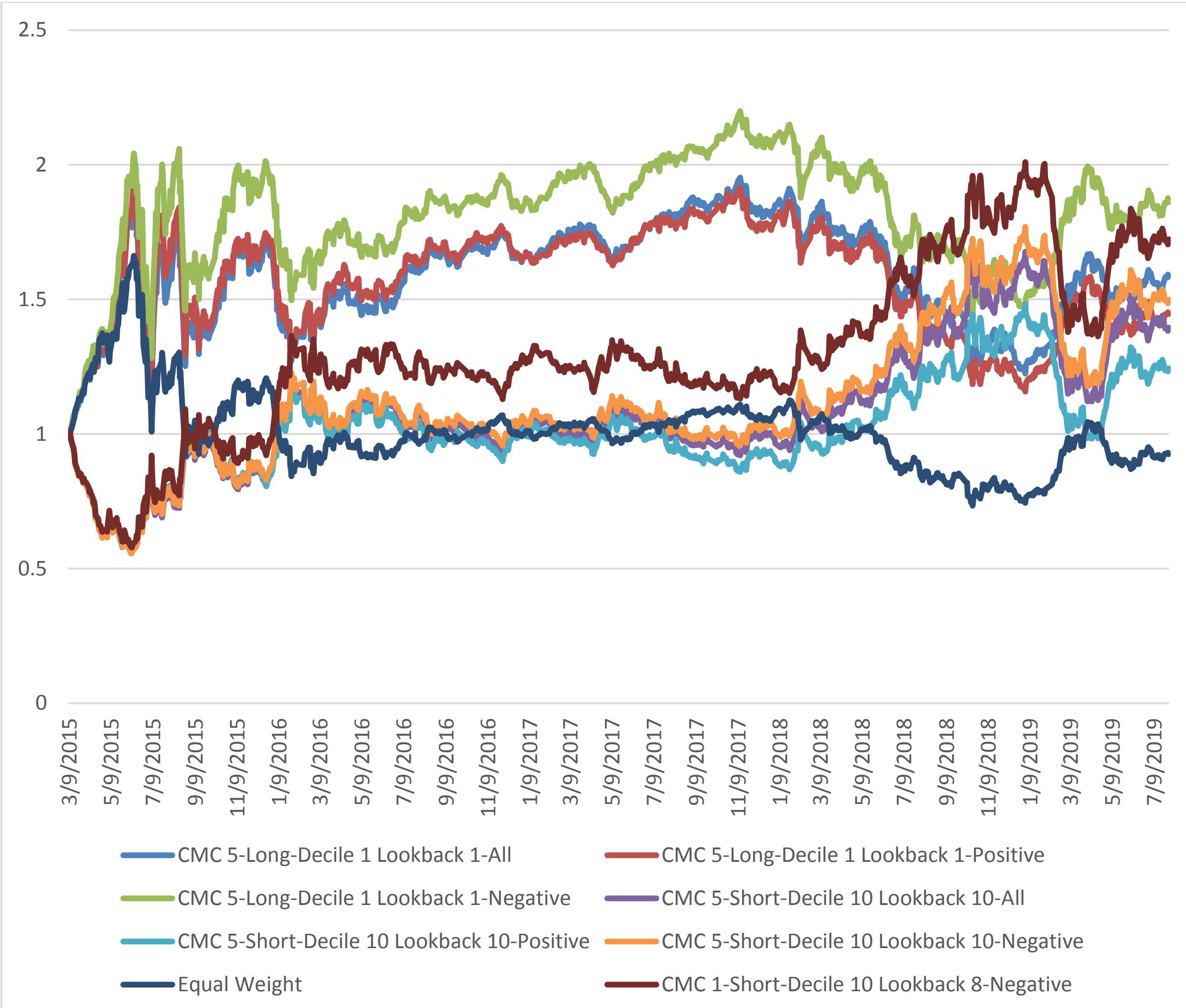


CUMULATIVE RETURN

3:00:00PM(DAY T) – 8:59:59AM(DAY T+1)



3:00:00PM(DAY T) – 2:29:59PM (DAY T+1)



STATISTICS FOR 3:00:00PM-8:59:59AM

2015 – 2019 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	1075	1075	1075	1075	1075	1075
Return	0.590	0.447	0.697	0.977	0.614	0.621
Daily_Max	0.067	0.088	0.077	0.031	0.034	0.031
Daily_Min	-0.029	-0.021	-0.026	-0.026	-0.032	-0.035
Annual_Return	0.116	0.091	0.134	0.175	0.120	0.121
Volatility	0.094	0.094	0.094	0.104	0.103	0.103
SemiDeviation	0.058	0.053	0.056	0.073	0.072	0.075
MaxDrawdown	0.123	0.139	0.108	0.150	0.107	0.148
Sharpe	1.236	0.971	1.424	1.690	1.169	1.175
Sortino	2.016	1.714	2.384	2.390	1.662	1.623
Calmar	0.948	0.659	1.231	1.172	1.127	0.818
Skewness	2.108	4.039	2.871	-0.006	-0.015	-0.323

2015 – 2019 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	1075.000	1075.000	1075.000	1075.000	1075.000	1075.000
Return	0.473	0.328	0.564	0.473	0.203	0.220
Daily_Max	0.100	0.100	0.100	0.097	0.099	0.096
Daily_Min	-0.099	-0.098	-0.099	-0.085	-0.084	-0.082
Annual_Return	0.096	0.070	0.112	0.096	0.045	0.048
Volatility	0.300	0.307	0.304	0.325	0.325	0.317
SemiDeviation	0.219	0.225	0.223	0.213	0.212	0.209
MaxDrawdown	0.425	0.461	0.402	0.429	0.403	0.426
Sharpe	0.320	0.227	0.368	0.296	0.138	0.152
Sortino	0.438	0.310	0.502	0.452	0.211	0.232
Calmar	0.226	0.151	0.278	0.224	0.111	0.113
Skewness	-0.336	-0.334	-0.355	0.726	0.742	0.721

2015 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	203.000	203.000	203.000	203.000	203.000	203.000
Return	0.547	0.505	0.567	0.202	0.202	0.144
Daily_Max	0.067	0.088	0.077	0.031	0.034	0.025
Daily_Min	-0.029	-0.021	-0.026	-0.026	-0.032	-0.035
Annual_Return	0.725	0.666	0.753	0.258	0.258	0.183
Volatility	0.170	0.180	0.174	0.137	0.139	0.148
SemiDeviation	0.103	0.100	0.104	0.100	0.102	.0.114
MaxDrawdown	0.056	0.059	0.070	0.150	0.107	0.148
Sharpe	4.266	3.703	4.318	1.892	1.865	1.236
Sortino	7.033	6.640	7.222	2.581	2.523	1.599
Calmar	13.052	11.293	10.766	1.728	2.424	1.231
Skewness	1.452	2.629	1.906	-0.271	-0.415	-0.905

2015 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	203.000	203.000	203.000	203.000	203.000	203.000
Return	0.783	0.730	0.803	-0.136	-0.137	-0.173
Daily_Max	0.100	0.100	0.100	0.097	0.099	0.096
Daily_Min	-0.099	-0.098	-0.099	-0.085	-0.084	-0.082
Annual_Return	1.060	0.984	1.089	-0.167	-0.168	-0.211
Volatility	0.522	0.532	0.528	0.497	0.500	0.484
SemiDeviation	0.386	0.392	0.392	0.321	0.324	0.314
MaxDrawdown	0.385	0.395	0.402	0.429	0.403	0.426
Sharpe	2.030	1.850	2.063	-0.336	-0.336	-0.436
Sortino	2.747	2.509	2.781	-0.519	-0.517	-0.672
Calmar	2.753	2.487	2.705	-0.388	-0.416	-0.495
Skewness	-0.265	-0.236	-0.289	0.582	0.554	0.597

2016 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	243.000	243.000	243.000	243.000	243.000	243.000
Return	0.053	0.024	0.046	0.138	0.127	0.089
Daily_Max	0.016	0.015	0.013	0.018	0.022	0.015
Daily_Min	-0.014	-0.010	-0.012	-0.014	-0.011	-0.010
Annual_Return	0.056	0.025	0.048	0.145	0.133	0.093
Volatility	0.056	0.051	0.055	0.082	0.080	0.073
SemiDeviation	0.039	0.035	0.038	0.056	0.056	0.050
MaxDrawdown	0.047	0.025	0.042	0.056	0.069	0.051
Sharpe	0.985	0.491	0.884	1.781	1.651	1.277
Sortino	1.421	0.716	1.265	2.573	2.392	1.854
Calmar	1.188	1.008	1.145	2.590	1.929	1.835
Skewness	0.220	0.331	0.133	0.172	0.258	0.191

2016 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	243.000	243.000	243.000	243.000	243.000	243.000
Return	-0.092	-0.123	-0.099	0.227	0.215	0.177
Daily_Max	0.046	0.052	0.044	0.090	0.092	0.091
Daily_Min	-0.080	-0.082	-0.078	-0.050	-0.048	-0.053
Annual_Return	-0.096	-0.128	-0.104	0.239	0.226	0.185
Volatility	0.258	0.278	0.262	0.313	0.311	0.302
SemiDeviation	0.205	0.221	0.210	0.190	0.188	0.184
MaxDrawdown	0.263	0.280	0.263	0.219	0.225	0.245
Sharpe	-0.374	-0.459	-0.396	0.762	0.725	0.613
Sortino	-0.470	-0.579	-0.493	1.257	1.204	1.009
Calmar	-0.366	-0.456	-0.393	1.088	1.005	0.756
Skewness	-1.567	-1.504	-1.670	1.300	1.373	1.342

2017 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	243.000	243.000	243.000	243.000	243.000	243.000
Return	-0.014	-0.009	0.032	0.076	-0.026	0.010
Daily_Max	0.011	0.011	0.008	0.029	0.027	0.031
Daily_Min	-0.012	-0.009	-0.009	-0.026	-0.025	-0.018
Annual_Return	-0.015	-0.009	0.033	0.079	-0.027	0.011
Volatility	0.060	0.049	0.051	0.106	0.101	0.100
SemiDeviation	0.042	0.035	0.036	0.075	0.069	0.068
MaxDrawdown	0.057	0.046	0.038	0.051	0.080	0.073
Sharpe	-0.252	-0.182	0.653	0.745	-0.267	0.109
Sortino	-0.357	-0.253	0.924	1.061	-0.393	0.159
Calmar	-0.263	-0.196	0.880	1.569	-0.337	0.149
Skewness	0.003	-0.079	-0.014	0.076	0.274	0.471

2017 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	243.000	243.000	243.000	243.000	243.000	243.000
Return	0.050	0.057	0.100	-0.007	-0.100	-0.067
Daily_Max	0.023	0.026	0.025	0.039	0.037	0.041
Daily_Min	-0.038	-0.029	-0.029	-0.034	-0.033	-0.031
Annual_Return	0.052	0.059	0.104	-0.007	-0.104	-0.070
Volatility	0.123	0.116	0.115	0.184	0.179	0.180
SemiDeviation	0.090	0.083	0.082	0.124	0.120	0.120
MaxDrawdown	0.094	0.079	0.079	0.157	0.195	0.185
Sharpe	0.425	0.510	0.906	-0.038	-0.584	-0.388
Sortino	0.583	0.714	1.280	-0.056	-0.873	-0.583
Calmar	0.560	0.749	1.326	-0.045	-0.535	-0.378
Skewness	-0.511	-0.146	-0.089	0.350	0.381	0.531

2018 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	242.000	242.000	242.000	242.000	242.000	242.000
Return	-0.024	-0.057	-0.066	0.214	0.134	0.187
Daily_Max	0.011	0.016	0.016	0.016	0.016	0.019
Daily_Min	-0.014	-0.014	-0.015	-0.018	-0.015	-0.017
Annual_Return	-0.025	-0.060	-0.069	0.226	0.141	0.197
Volatility	0.070	0.062	0.070	0.090	0.092	0.087
SemiDeviation	0.049	0.043	0.048	0.064	0.064	0.063
MaxDrawdown	0.081	0.090	0.103	0.051	0.061	0.038
Sharpe	-0.361	-0.978	-0.993	2.513	1.533	2.277
Sortino	-0.510	-1.412	-1.427	3.529	2.190	3.147
Calmar	-0.309	-0.665	-0.673	4.436	2.315	5.190
Skewness	-0.083	0.156	0.109	-0.043	0.067	-0.111

2018 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	242.000	242.000	242.000	242.000	242.000	242.000
Return	-0.303	-0.328	-0.334	0.609	0.503	0.575
Daily_Max	0.046	0.048	0.046	0.067	0.068	0.064
Daily_Min	-0.066	-0.064	-0.065	-0.052	-0.053	-0.050
Annual_Return	-0.315	-0.341	-0.348	0.647	0.533	0.610
Volatility	0.231	0.238	0.241	0.272	0.273	0.267
SemiDeviation	0.169	0.175	0.174	0.184	0.183	0.183
MaxDrawdown	0.366	0.375	0.364	0.106	0.104	0.106
Sharpe	-1.362	-1.433	-1.442	2.380	1.957	2.289
Sortino	-1.866	-1.955	-1.996	3.519	2.918	3.342
Calmar	-0.861	-0.910	-0.954	6.118	5.138	5.739
Skewness	-0.374	-0.382	-0.301	0.389	0.419	0.292

2019 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	140.000	140.000	140.000	140.000	140.000	140.000
Return	0.015	0.005	0.074	0.107	0.079	0.085
Daily_Max	0.012	0.012	0.014	0.021	0.021	0.023
Daily_Min	-0.010	-0.011	-0.007	-0.013	-0.012	-0.016
Annual_Return	0.026	0.009	0.139	0.201	0.147	0.160
Volatility	0.066	0.067	0.062	0.102	0.098	0.103
SemiDeviation	0.046	0.045	0.039	0.067	0.065	0.068
MaxDrawdown	0.047	0.048	0.021	0.101	0.104	0.109
Sharpe	0.403	0.132	2.239	1.974	1.508	1.556
Sortino	0.581	0.194	3.547	3.006	2.254	2.338
Calmar	0.558	0.185	6.653	1.999	1.421	1.464
Skewness	0.113	0.252	0.684	0.514	0.425	0.449

2019 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative
Periods	140.000	140.000	140.000	140.000	140.000	140.000
Return	0.243	0.233	0.316	-0.131	-0.152	-0.147
Daily_Max	0.055	0.054	0.060	0.086	0.086	0.083
Daily_Min	-0.066	-0.062	-0.064	-0.062	-0.061	-0.064
Annual_Return	0.482	0.460	0.643	-0.224	-0.258	-0.250
Volatility	0.239	0.231	0.241	0.310	0.308	0.306
SemiDeviation	0.167	0.159	0.165	0.214	0.214	0.213
MaxDrawdown	0.146	0.147	0.130	0.347	0.348	0.350
Sharpe	2.017	1.994	2.664	-0.722	-0.839	-0.817
Sortino	2.882	2.899	3.897	-1.045	-1.208	-1.173
Calmar	3.312	3.126	4.928	-0.646	-0.743	-0.714
Skewness	-0.190	-0.033	0.057	0.361	0.353	0.292

STATISTICS FOR 3:00:00PM-2:29:59PM

2015 – 2019 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	1075.000	1075.000	1075.000	1075.000	1075.000	1075.000	1075.000
Return	0.699	0.557	0.998	0.881	0.676	1.026	1.315
Daily_Max	0.077	0.080	0.077	0.030	0.028	0.028	0.028
Daily_Min	-0.033	-0.025	-0.026	-0.027	-0.028	-0.033	-0.028
Annual_Return	0.134	0.111	0.178	0.162	0.130	0.182	0.220
Volatility	0.096	0.095	0.098	0.105	0.104	0.106	0.109
SemiDeviation	0.058	0.057	0.058	0.074	0.073	0.075	0.077
MaxDrawdown	0.122	0.154	0.091	0.151	0.163	0.166	0.137
Sharpe	1.387	1.171	1.816	1.538	1.256	1.717	2.011
Sortino	2.307	1.949	3.063	2.187	1.787	2.421	2.868
Calmar	1.094	0.718	1.962	1.068	0.799	1.096	1.609
Skewness	2.717	3.034	2.716	-0.002	0.002	-0.087	0.002

2015 – 2019 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	1075.000	1075.000	1075.000	1075.000	1075.000	1075.000	1075.000
Return	0.585	0.446	0.862	0.395	0.244	0.499	0.723
Daily_Max	0.100	0.100	0.100	0.097	0.097	0.097	0.096
Daily_Min	-0.098	-0.099	-0.099	-0.085	-0.085	-0.088	-0.083
Annual_Return	0.115	0.091	0.159	0.082	0.053	0.101	0.138
Volatility	0.295	0.299	0.297	0.329	0.328	0.331	0.328
SemiDeviation	0.216	0.218	0.215	0.215	0.215	0.218	0.215
MaxDrawdown	0.398	0.402	0.373	0.439	0.439	0.446	0.424
Sharpe	0.390	0.306	0.534	0.250	0.162	0.304	0.419
Sortino	0.534	0.419	0.737	0.381	0.247	0.463	0.640
Calmar	0.290	0.227	0.426	0.187	0.121	0.226	0.325
Skewness	-0.331	-0.315	-0.256	0.712	0.727	0.689	0.714

2015 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	203.000	203.000	203.000	203.000	203.000	203.000	203.000
Return	0.450	0.484	0.690	0.207	0.207	0.241	0.387
Daily_Max	0.077	0.080	0.077	0.030	0.028	0.028	0.025
Daily_Min	-0.033	-0.025	-0.026	-0.027	-0.028	-0.033	-0.028
Annual_Return	0.592	0.638	0.926	0.266	0.266	0.309	0.505
Volatility	0.180	0.175	0.181	0.136	0.137	0.138	0.145
SemiDeviation	0.107	0.102	0.107	0.100	0.100	0.102	0.106
MaxDrawdown	0.055	0.049	0.053	0.151	0.163	0.166	0.137
Sharpe	3.289	3.642	5.126	1.957	1.939	2.246	3.491
Sortino	5.519	6.229	8.635	2.661	2.665	3.030	4.744
Calmar	10.686	12.984	17.510	1.756	1.630	1.861	3.691
Skewness	1.848	2.151	1.811	-0.357	-0.282	-0.481	-0.394

2015 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	203.000	203.000	203.000	203.000	203.000	203.000	203.000
Return	0.673	0.707	0.946	-0.133	-0.134	-0.112	-0.003
Daily_Max	0.100	0.100	0.100	0.097	0.097	0.097	0.096
Daily_Min	-0.098	-0.099	-0.099	-0.085	-0.085	-0.088	-0.083
Annual_Return	0.903	0.952	1.299	-0.163	-0.164	-0.137	-0.004
Volatility	0.523	0.528	0.527	0.499	0.502	0.508	0.501
SemiDeviation	0.386	0.390	0.388	0.323	0.324	0.328	0.325
MaxDrawdown	0.398	0.394	0.373	0.439	0.439	0.446	0.424
Sharpe	1.724	1.802	2.463	-0.327	-0.327	-0.271	-0.008
Sortino	2.336	2.442	3.350	-0.505	-0.506	-0.419	-0.012
Calmar	2.271	2.418	3.485	-0.372	-0.374	-0.308	-0.009
Skewness	-0.257	-0.256	-0.245	0.564	0.574	0.557	0.552

2016 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	243.000	243.000	243.000	243.000	243.000	243.000	243.000
Return	0.140	0.120	0.092	0.116	0.090	0.115	0.203
Daily_Max	0.019	0.015	0.014	0.015	0.016	0.013	0.018
Daily_Min	-0.012	-0.011	-0.013	-0.014	-0.014	-0.013	-0.014
Annual_Return	0.147	0.126	0.097	0.121	0.094	0.121	0.213
Volatility	0.068	0.062	0.067	0.082	0.081	0.084	0.085
SemiDeviation	0.045	0.042	0.045	0.058	0.057	0.060	0.060
MaxDrawdown	0.042	0.039	0.040	0.054	0.045	0.039	0.032
Sharpe	2.160	2.030	1.450	1.479	1.160	1.435	2.504
Sortino	3.240	3.018	2.170	2.104	1.649	2.016	3.572
Calmar	3.503	3.208	2.441	2.243	2.084	3.075	6.631
Skewness	0.483	0.288	0.317	0.043	0.038	-0.057	0.067

2016 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	243.000	243.000	243.000	243.000	243.000	243.000	243.000
Return	-0.014	-0.033	-0.055	0.202	0.174	0.201	0.297
Daily_Max	0.041	0.046	0.042	0.091	0.092	0.092	0.094
Daily_Min	-0.078	-0.077	-0.076	-0.051	-0.050	-0.054	-0.052
Annual_Return	-0.015	-0.034	-0.057	0.212	0.183	0.211	0.312
Volatility	0.248	0.253	0.245	0.315	0.313	0.316	0.315
SemiDeviation	0.197	0.200	0.195	0.192	0.192	0.195	0.192
MaxDrawdown	0.240	0.248	0.231	0.231	0.239	0.221	0.173
Sharpe	-0.061	-0.136	-0.234	0.672	0.584	0.668	0.990
Sortino	-0.076	-0.171	-0.294	1.105	0.953	1.080	1.622
Calmar	-0.063	-0.138	-0.248	0.918	0.765	0.956	1.803
Skewness	-1.660	-1.524	-1.629	1.294	1.267	1.199	1.292

2017 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	243.000	243.000	243.000	243.000	243.000	243.000	243.000
Return	0.035	0.005	0.056	0.033	-0.015	0.052	0.021
Daily_Max	0.011	0.010	0.010	0.023	0.023	0.024	0.028
Daily_Min	-0.009	-0.009	-0.011	-0.018	-0.024	-0.018	-0.021
Annual_Return	0.036	0.005	0.059	0.035	-0.015	0.055	0.022
Volatility	0.050	0.051	0.054	0.105	0.103	0.105	0.111
SemiDeviation	0.035	0.036	0.039	0.073	0.072	0.074	0.076
MaxDrawdown	0.028	0.046	0.042	0.069	0.085	0.064	0.064
Sharpe	0.728	0.102	1.086	0.331	-0.149	0.519	0.197
Sortino	1.025	0.142	1.522	0.475	-0.215	0.736	0.287
Calmar	1.281	0.113	1.400	0.506	-0.181	0.857	0.343
Skewness	-0.063	-0.064	-0.092	0.124	0.118	0.061	0.249

2017 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	243.000	243.000	243.000	243.000	243.000	243.000	243.000
Return	0.104	0.072	0.127	-0.046	-0.090	-0.029	-0.057
Daily_Max	0.022	0.024	0.019	0.041	0.039	0.041	0.042
Daily_Min	-0.026	-0.033	-0.027	-0.034	-0.032	-0.034	-0.033
Annual_Return	0.109	0.075	0.133	-0.048	-0.094	-0.030	-0.060
Volatility	0.108	0.110	0.107	0.184	0.182	0.184	0.188
SemiDeviation	0.077	0.079	0.076	0.124	0.122	0.125	0.125
MaxDrawdown	0.076	0.085	0.091	0.168	0.196	0.161	0.161
Sharpe	1.008	0.684	1.248	-0.261	-0.516	-0.162	-0.320
Sortino	1.418	0.954	1.757	-0.388	-0.769	-0.239	-0.481
Calmar	1.433	0.889	1.465	-0.286	-0.480	-0.185	-0.372
Skewness	-0.126	-0.302	-0.182	0.395	0.395	0.356	0.476

2018 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	242.000	242.000	242.000	242.000	242.000	242.000	242.000
Return	-0.039	-0.069	0.001	0.232	0.172	0.251	0.210
Daily_Max	0.012	0.014	0.012	0.022	0.017	0.018	0.017
Daily_Min	-0.014	-0.014	-0.014	-0.022	-0.019	-0.024	-0.022
Annual_Return	-0.041	-0.072	0.001	0.245	0.182	0.265	0.221
Volatility	0.061	0.063	0.064	0.095	0.092	0.094	0.092
SemiDeviation	0.041	0.045	0.045	0.065	0.064	0.065	0.063
MaxDrawdown	0.077	0.093	0.060	0.047	0.050	0.045	0.043
Sharpe	-0.684	-1.147	0.013	2.585	1.985	2.822	2.408
Sortino	-0.999	-1.609	0.018	3.751	2.850	4.066	3.484
Calmar	-0.534	-0.775	0.013	5.170	3.616	5.870	5.111
Skewness	0.141	-0.120	-0.070	0.144	0.060	0.050	0.101

2018 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	242.000	242.000	242.000	242.000	242.000	242.000	242.000
Return	-0.314	-0.335	-0.286	0.630	0.551	0.656	0.602
Daily_Max	0.049	0.046	0.048	0.072	0.073	0.072	0.066
Daily_Min	-0.062	-0.062	-0.064	-0.055	-0.052	-0.057	-0.055
Annual_Return	-0.327	-0.348	-0.297	0.670	0.585	0.698	0.640
Volatility	0.231	0.231	0.233	0.281	0.278	0.278	0.275
SemiDeviation	0.169	0.169	0.170	0.189	0.188	0.188	0.186
MaxDrawdown	0.351	0.369	0.329	0.115	0.112	0.115	0.109
Sharpe	-1.414	-1.506	-1.276	2.388	2.104	2.506	2.330
Sortino	-1.932	-2.056	-1.754	3.543	3.110	3.707	3.440
Calmar	-0.931	-0.945	-0.905	5.832	5.217	6.047	5.850
Skewness	-0.350	-0.368	-0.345	0.418	0.402	0.395	0.371

2019 EXCESS RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	140.000	140.000	140.000	140.000	140.000	140.000	140.000
Return	0.034	0.001	0.024	0.097	0.103	0.112	0.124
Daily_Max	0.012	0.012	0.017	0.022	0.023	0.022	0.023
Daily_Min	-0.012	-0.012	-0.010	-0.015	-0.014	-0.015	-0.019
Annual_Return	0.062	0.001	0.044	0.182	0.194	0.212	0.235
Volatility	0.070	0.070	0.070	0.107	0.104	0.109	0.113
SemiDeviation	0.048	0.050	0.047	0.071	0.070	0.072	0.076
MaxDrawdown	0.067	0.071	0.060	0.106	0.104	0.106	0.120
Sharpe	0.891	0.021	0.626	1.693	1.872	1.946	2.078
Sortino	1.294	0.030	0.946	2.569	2.796	2.938	3.094
Calmar	0.930	0.021	0.736	1.719	1.874	1.998	1.960
Skewness	0.180	-0.138	0.570	0.470	0.409	0.494	0.300

2019 RETURN

.	CMC.5 Long Decile.1 Lookback.1 All	CMC.5 Long Decile.1 Lookback.1 Positive	CMC.5 Long Decile.1 Lookback.1 Negative	CMC.5 Short Decile.10 Lookback.10 All	CMC.5 Short Decile.10 Lookback.10 Positive	CMC.5 Short Decile.10 Lookback.10 Negative	CMC.1 Short Decile.10 Lookback.8 Negative
Periods	140.000	140.000	140.000	140.000	140.000	140.000	140.000
Return	0.270	0.229	0.257	-0.139	-0.134	-0.127	-0.117
Daily_Max	0.057	0.054	0.058	0.085	0.087	0.086	0.079
Daily_Min	-0.057	-0.062	-0.057	-0.063	-0.063	-0.064	-0.065
Annual_Return	0.541	0.451	0.513	-0.237	-0.229	-0.218	-0.202
Volatility	0.222	0.226	0.226	0.315	0.314	0.315	0.313
SemiDeviation	0.150	0.156	0.153	0.220	0.218	0.220	0.220
MaxDrawdown	0.115	0.137	0.118	0.332	0.338	0.335	0.322
Sharpe	2.435	1.993	2.266	-0.753	-0.728	-0.691	-0.645
Sortino	3.599	2.897	3.357	-1.080	-1.052	-0.988	-0.920
Calmar	4.700	3.298	4.343	-0.715	-0.678	-0.649	-0.627
Skewness	0.140	-0.043	0.174	0.299	0.371	0.292	0.177