

Database exists, assume schema does, too.

Seasonal Indexes

	03-31	06-30	09-30	12-31
0	Energy ETF	Information Technology ETF	Information Technology ETF	Information Technology ETF
1	Information Technology ETF	Consumer Discretionary ETF	Consumer Discretionary ETF	Financials ETF
2	Utilities ETF	Energy ETF	SP500	Materials ETF
3	SP1500	Materials ETF	Industrials ETF	SP600
4	Industrials ETF	SP1500	SP1500	Consumer Discretionary ETF
5	SP500	SP500	Health Care ETF	SP400
6	SP600	SP600	Utilities ETF	SP500
7	Health Care ETF	SP400	Consumer Staples ETF	SP1500
8	Consumer Staples ETF	Health Care ETF	Financials ETF	Health Care ETF
9	SP400	Communication Services ETF	Materials ETF	Consumer Staples ETF
10	Financials ETF	Real Estate ETF	Communication Services ETF	Energy ETF
11	Consumer Discretionary ETF	Financials ETF	SP400	Utilities ETF
12	Real Estate ETF	Industrials ETF	Real Estate ETF	Industrials ETF
13	Materials ETF	Consumer Staples ETF	SP600	Real Estate ETF
14	Communication Services ETF	Utilities ETF	Energy ETF	Communication Services ETF

	03-31	06-30	09-30	12-31
SP1500	-0.010622	0.081757	0.041626	0.049958
SP500	-0.011990	0.080771	0.045646	0.050086
SP600	-0.017768	0.080509	0.019158	0.057970
SP400	-0.019859	0.080174	0.020554	0.051549
Communication Services ETF	-0.032872	0.075995	0.022591	0.017899
Consumer Discretionary ETF	-0.021214	0.120254	0.052510	0.052777
Consumer Staples ETF	-0.018663	0.035480	0.034807	0.045915
Energy ETF	0.055913	0.096281	-0.039735	0.042416
Financials ETF	-0.020711	0.061049	0.030176	0.065446
Health Care ETF	-0.017923	0.078706	0.041045	0.047467
Industrials ETF	-0.011020	0.058300	0.045427	0.039920
Information Technology ETF	0.006217	0.121831	0.068693	0.067531
Materials ETF	-0.026671	0.082827	0.027940	0.058669
Real Estate ETF	-0.026416	0.075756	0.019424	0.038472
Utilities ETF	-0.001263	0.026125	0.039218	0.042001

Note if the final data in the prices ends on a quarter, this will aggregate into the seasonal_index above and there will be no comparison
Current

06-16

Energy ETF	0.012706
Consumer Staples ETF	-0.093155
Utilities ETF	-0.118472
Health Care ETF	-0.137078
Materials ETF	-0.161299
SP600	-0.172097
Industrials ETF	-0.178382
SP1500	-0.186938
SP500	-0.188181
Financials ETF	-0.192419
Real Estate ETF	-0.196826
SP400	-0.200647
Communication Services ETF	-0.238734
Information Technology ETF	-0.241332
Consumer Discretionary ETF	-0.270279

standard deviations

	03-31	06-30	09-30	12-31
SP1500	0.134644	0.072380	0.037999	0.110320
SP500	0.127411	0.070450	0.039033	0.106496
SP600	0.199479	0.088447	0.037096	0.179394
SP400	0.157662	0.100224	0.037075	0.138781
Communication Services ETF	0.138244	0.095192	0.045269	0.123434
Consumer Discretionary ETF	0.151791	0.146922	0.083611	0.127243
Consumer Staples ETF	0.096633	0.035421	0.049261	0.063730
Energy ETF	0.369457	0.166709	0.099129	0.202483
Financials ETF	0.192299	0.053666	0.014462	0.140299
Health Care ETF	0.079810	0.054107	0.065798	0.098650
Industrials ETF	0.178470	0.072339	0.066050	0.134044
Information Technology ETF	0.135329	0.113409	0.054569	0.136753
Materials ETF	0.163483	0.099766	0.065317	0.127072
Real Estate ETF	0.161483	0.056090	0.032025	0.078165
Utilities ETF	0.092016	0.021473	0.033841	0.054883

t scores

	03-31	06-30	09-30	12-31
SP1500	-0.035281	0.505153	0.489908	0.202519
SP500	-0.042087	0.512730	0.522980	0.210329
SP600	-0.039834	0.407076	0.230960	0.144515
SP400	-0.056330	0.357747	0.247928	0.166115
Communication Services ETF	-0.106341	0.357027	0.223180	0.064848
Consumer Discretionary ETF	-0.062503	0.366041	0.280865	0.185493
Consumer Staples ETF	-0.086371	0.447954	0.315992	0.322196
Energy ETF	0.067680	0.258283	-0.179260	0.093682
Financials ETF	-0.048166	0.508740	0.933164	0.208614
Health Care ETF	-0.100433	0.650529	0.278976	0.215182
Industrials ETF	-0.027615	0.360421	0.307577	0.133187
Information Technology ETF	0.020546	0.480423	0.562966	0.220841
Materials ETF	-0.072960	0.371283	0.191302	0.206478
Real Estate ETF	-0.073157	0.604012	0.271246	0.220111
Utilities ETF	-0.006140	0.544116	0.518265	0.342246

p values

	03-31	06-30	09-30	12-31
SP1500	0.487036	0.675887	0.671106	0.573766
SP500	0.484537	0.678247	0.681422	0.576557
SP600	0.485364	0.644372	0.583899	0.552872
SP400	0.479310	0.627889	0.589904	0.560685
Communication Services ETF	0.461012	0.627646	0.581136	0.523813
Consumer Discretionary ETF	0.477047	0.630688	0.601465	0.567662
Consumer Staples ETF	0.468307	0.657720	0.613641	0.615774
Energy ETF	0.524851	0.593553	0.434579	0.534366
Financials ETF	0.482306	0.677006	0.790214	0.575945
Health Care ETF	0.463168	0.719135	0.600805	0.578288
Industrials ETF	0.489852	0.628793	0.610739	0.548761
Information Technology ETF	0.507551	0.668108	0.693606	0.580304
Materials ETF	0.473215	0.632451	0.569748	0.575182
Real Estate ETF	0.473143	0.705773	0.598102	0.580044
Utilities ETF	0.497743	0.687902	0.679964	0.622630

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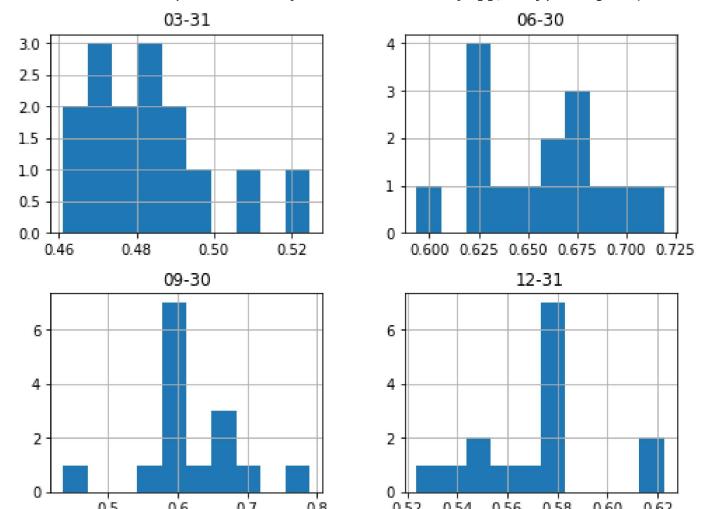
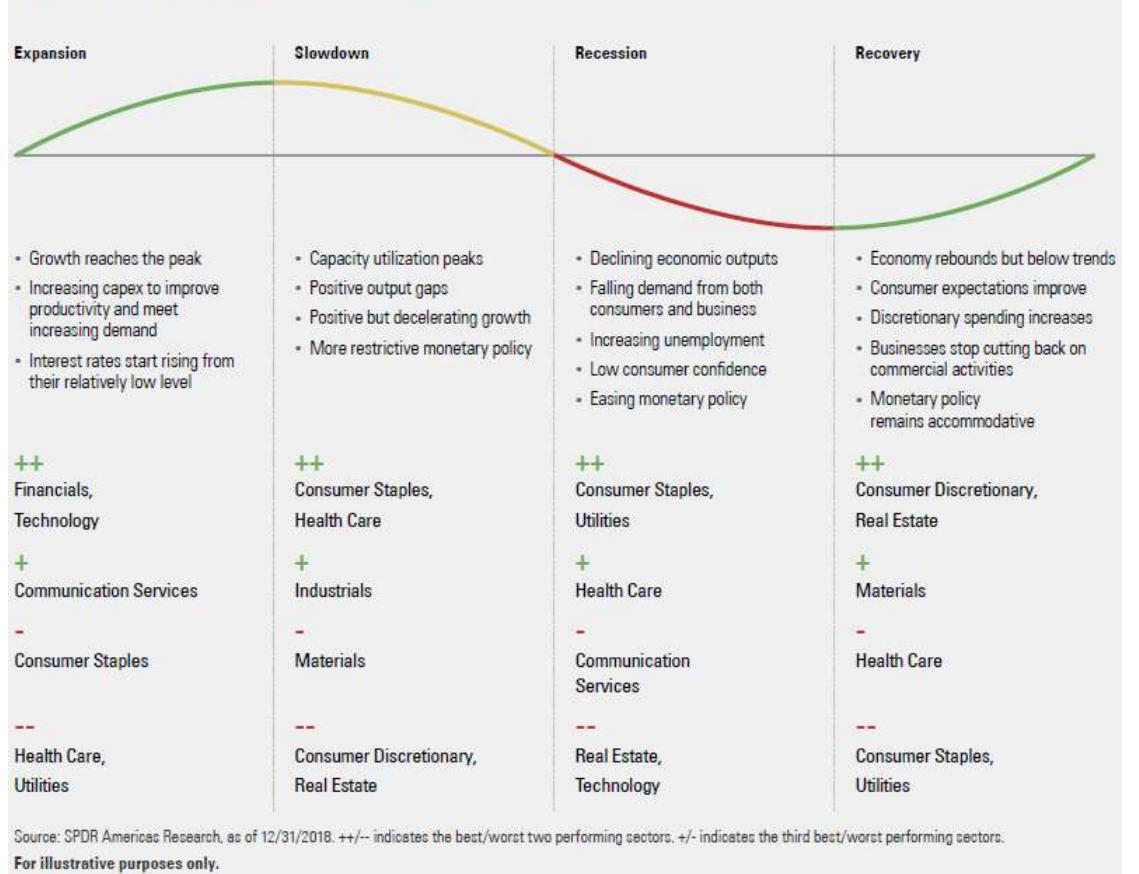


Figure 11: A Sector Roadmap for Business Cycles



Cycles

	<u>Expansion</u>	<u>Slowdown</u>	<u>Recession</u>	<u>Recovery</u>
Strongest	Tech Financials Real Estate Consumer D Industrials Materials Energy Healthcare Cons. Staples Utilities	Cons. Staples Healthcare Industrials Utilities Tech Energy Financials Materials Consumer D Real Estate	Cons. Staples Energy Utilities Healthcare Consumer D Materials Industrials Financials Tech Real Estate	Real Estate Consumer D Materials Tech Industrials Energy Financials Healthcare Cons. Staples Utilities
Weakest				

	Energy ETF	Consumer Staples ETF	Utilities ETF	Health Care ETF	Materials ETF	SP600	Industrials ETF	SP1500	SP500	Financials ETF	Real Estate ETF	SP400	Communication Services ETF	Information Technology ETF	Consumer Discretionary ETF
2017-03-31 00:00:00	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan	nan
2017-06-30 00:00:00	-0.078709	0.010040	0.022113	0.072895	0.026999	0.018327	0.042167	0.030375	0.030708	0.038955	0.017375	0.031752	-0.024136	0.041388	0.028386
2017-09-30 00:00:00	0.069612	-0.012346	0.031518	0.040565	0.066617	0.064962	0.052781	0.044807	0.045666	0.052789	0.008095	0.035020	0.015498	0.083223	0.014521
2017-12-31 00:00:00	0.073946	0.059268	0.000687	0.018576	0.071798	0.038747	0.066175	0.066880	0.069917	0.073683	0.012742	0.074139	0.000763	0.093087	0.097848
2018-03-31 00:00:00	-0.078807	-0.073521	-0.033734	-0.020049	-0.072483	-0.011631	-0.033542	-0.021321	-0.024130	-0.015065	-0.086159	-0.003978	-0.085669	0.020711	-0.001942
2018-06-30 00:00:00	0.150528	0.006353	0.053422	0.055259	0.036210	0.106722	-0.008057	0.052094	0.047568	-0.011331	0.094633	0.045520	0.035862	0.080437	0.088528
2018-09-30 00:00:00	0.021911	0.050064	0.019751	0.137698	0.007338	0.032842	0.094874	0.070536	0.078236	0.031675	0.000044	0.032902	0.023115	0.117719	0.066008
2018-12-31 00:00:00	-0.267451	-0.055862	0.009925	-0.108129	-0.154310	-0.193040	-0.183620	-0.142834	-0.137319	-0.138848	-0.058855	-0.172165	-0.143117	-0.174415	-0.162070
2019-03-31 00:00:00	0.178564	0.111156	0.103055	0.081835	0.126958	0.124660	0.183161	0.151853	0.144236	0.109942	0.173365	0.157497	0.139541	0.217473	0.157197
2019-06-30 00:00:00	-0.048754	0.036556	0.035855	0.017469	0.040951	0.010843	0.034436	0.039106	0.040369	0.067026	0.015389	0.030815	0.035928	0.054745	0.040127
2019-09-30 00:00:00	-0.075658	0.056319	0.090872	-0.035439	-0.013089	-0.004200	0.004465	0.006291	0.011423	0.013235	0.075811	-0.009122	-0.002023	0.016115	0.002509
2019-12-31 00:00:00	0.054552	0.036517	0.002011	0.147851	0.066971	0.082573	0.058155	0.090490	0.089876	0.096390	0.005745	0.066590	0.086727	0.139034	0.056223
2020-03-31 00:00:00	-0.523877	-0.141472	-0.141270	-0.131539	-0.278876	-0.328050	-0.279339	-0.205302	-0.194477	-0.330709	-0.241350	-0.247693	-0.187109	-0.131215	-0.231167
2020-06-30 00:00:00	0.332245	0.094561	0.024507	0.164463	0.260712	0.223617	0.182339	0.206715	0.201618	0.135641	0.135399	0.259149	0.224230	0.318555	0.379795
2020-09-30 00:00:00	-0.188315	0.098022	0.051209	0.062281	0.120651	0.032878	0.118587	0.086119	0.090383	0.028859	0.013268	0.068091	0.097573	0.120087	0.192380
2020-12-31 00:00:00	0.300830	0.074374	0.073335	0.101111	0.172363	0.312278	0.178685	0.132216	0.121185	0.253698	0.092916	0.211458	0.182130	0.138205	0.172875
2021-03-31 00:00:00	0.324479	0.030385	0.031042	0.025327	0.105419	0.184526	0.116450	0.070761	0.063518	0.165207	0.087920	0.084662	0.083288	0.015110	0.073815
2021-06-30 00:00:00	0.126094	0.029888	-0.005272	0.083442	0.049264	0.043034	0.040613	0.080495	0.083593	0.074954	0.115985	0.033635	0.108092	0.114030	0.064435
2021-09-30 00:00:00	-0.026222	-0.018026	0.002739	0.000121	-0.041816	-0.030694	-0.043573	0.000378	0.002523	0.024323	-0.000098	-0.024123	-0.021207	0.006319	-0.012866
2021-12-31 00:00:00	0.050203	0.115277	0.124048	0.077925	0.136524	0.049293	0.080207	0.103038	0.106772	0.042310	0.139811	0.077726	-0.037011	0.141743	0.099010
2022-03-31 00:00:00	0.379204	-0.019862	0.034591	-0.045192	-0.014374	-0.058344	-0.041831	-0.049102	-0.049099	-0.032929	-0.065856	-0.089783	-0.114414	-0.090992	-0.103975
2022-06-16 00:00:00	0.012706	-0.093155	-0.118472	-0.137078	-0.161299	-0.172097	-0.178382	-0.186938	-0.188181	-0.192419	-0.196826	-0.200647	-0.238734	-0.241332	-0.270279

	2017-03-31 00:00:00	2017-06-30 00:00:00	2017-09-30 00:00:00	2017-12-31 00:00:00	2018-03-31 00:00:00	2018-06-30 00:00:00	2018-09-30 00:00:00	2018-12-31 00:00:00	2019-03-31 00:00:00	2019-06-30 00:00:00	2019-09-30 00:00:00	2019-12-31 00:00:00	2020-03-31 00:00:00	2020-06-30 00:00:00	2020-09-30 00:00:00	2020-12-31 00:00:00	2021-03-31 00:00:00	2021-06-30 00:00:00	2021-09-30 00:00:00	2021-12-31 00:00:00	2022-03-31 00:00:00	2022-06-16 00:00:00
0	Health Care ETF	Information Technology ETF	Consumer Discretionary ETF	Information Technology ETF	Energy ETF	Health Care ETF	Utilities ETF	Information Technology ETF	Financials ETF	Utilities ETF	Health Care ETF	Information Technology ETF	Consumer Discretionary ETF	Consumer Discretionary ETF	SP600	Energy ETF	Energy ETF	Financials ETF	Information Technology ETF	Energy ETF	Energy ETF	Energy ETF
1	Industrials ETF	Energy ETF	Information Technology ETF	Consumer Discretionary ETF	SP600	Information Technology ETF	Consumer Staples ETF	Industrials ETF	Information Technology ETF	Real Estate ETF	Information Technology ETF	Health Care ETF	Energy ETF	Materials ETF	Energy ETF	SP600	Real Estate ETF	Information Technology ETF	Real Estate ETF	Utilities ETF	Consumer Staples ETF	
2	Information Technology ETF	Materials ETF	SP400	SP400	Real Estate ETF	Industrials ETF	Real Estate ETF	Energy ETF	Materials ETF	Consumer Staples ETF	Financials ETF	Utilities ETF	Information Technology ETF	Information Technology ETF	Financials ETF	Financials ETF	Information Technology ETF	Utilities ETF	Materials ETF	Materials ETF	Utilities ETF	
3	Financials ETF	SP600	Energy ETF	SP600	Consumer Discretionary ETF	SP500	Health Care ETF	Real Estate ETF	SP500	Information Technology ETF	SP1500	Consumer Staples ETF	Materials ETF	Industrials ETF	SP400	Industrials ETF	Communication Services ETF	SP500	Utilities ETF	Consumer Staples ETF	Health Care ETF	
4	SP400	Financials ETF	Financials ETF	Financials ETF	Information Technology ETF	SP1500	SP500	SP400	Consumer Discretionary ETF	Financials ETF	SP500	Communication Services ETF	SP400	Consumer Staples ETF	Communication Services ETF	Materials ETF	SP500	Consumer Staples ETF	Financials ETF	Materials ETF		
5	SP500	Industrials ETF	Materials ETF	Health Care ETF	Health Care ETF	Consumer Discretionary ETF	Financials ETF	Consumer Discretionary ETF	SP1500	SP500	Communication Services ETF	SP500	Communication Services ETF	Communication Services ETF	Industrials ETF	Real Estate ETF	Health Care ETF	Health Care ETF	SP500	Industrials ETF	SP600	
6	SP1500	SP500	SP500	SP1500	Utilities ETF	Consumer Staples ETF	SP1500	SP1500	Consumer Staples ETF	SP1500	SP600	SP1500	SP600	SP500	Consumer Discretionary ETF	SP400	SP1500	Real Estate ETF	SP1500	Health Care ETF	Industrials ETF	
7	Consumer Discretionary ETF	SP1500	SP1500	SP1500	SP500	SP1500	SP400	Communication Services ETF	SP500	Communication Services ETF	Industrials ETF	Materials ETF	SP1500	SP1500	Materials ETF	Communication Services ETF	Financials ETF	Consumer Discretionary ETF	Consumer Discretionary ETF	SP500	SP1500	
8	Materials ETF	Health Care ETF	Industrials ETF	Industrials ETF	SP500	SP600	Materials ETF	Communication Services ETF	Communication Services ETF	Utilities ETF	Consumer Discretionary ETF	SP400	Real Estate ETF	SP500	SP400	Information Technology ETF	Consumer Discretionary ETF	Consumer Discretionary ETF	Consumer Staples ETF	Industrials ETF	SP1500	SP500
9	Utilities ETF	SP400	Consumer Staples ETF	Utilities ETF	SP400	Financials ETF	Consumer Discretionary ETF	Materials ETF	Industrials ETF	Communication Services ETF	Industrials ETF	SP400	Industrials ETF	Health Care ETF	SP1500	SP1500	Materials ETF	Communication Services ETF	Health Care ETF	SP600	Financials ETF	
10	SP600	Utilities ETF	SP600	Materials ETF	Materials ETF	Communication Services ETF	SP400	SP600	SP400	SP600	Consumer Discretionary ETF	Materials ETF	Health Care ETF	Utilities ETF	SP500	SP500	SP600	SP400	SP400	Real Estate ETF	Real Estate ETF	
11	Real Estate ETF	Communication Services ETF	Health Care ETF	Consumer Staples ETF	Communication Services ETF	Energy ETF	Information Technology ETF	Consumer Staples ETF	Health Care ETF	SP400	Energy ETF	Industrials ETF	Financials ETF	SP600	Health Care ETF	Utilities ETF	Industrials ETF	Energy ETF	Energy ETF	SP400	SP400	
12	Consumer Staples ETF	Consumer Discretionary ETF	Real Estate ETF	Energy ETF	Consumer Staples ETF	Utilities ETF	Industrials ETF	Financials ETF	Real Estate ETF	Materials ETF	Consumer Staples ETF	SP600	Real Estate ETF	Financials ETF	Real Estate ETF	Consumer Staples ETF	SP400	SP600	Information Technology ETF	Communication Services ETF		
13	Communication Services ETF	Real Estate ETF	Communication Services ETF	Communication Services ETF	Industrials ETF	Materials ETF	SP600	Utilities ETF	SP600	Health Care ETF	Real Estate ETF	Financials ETF	Consumer Staples ETF	Real Estate ETF	Consumer Staples ETF	Health Care ETF	Consumer Staples ETF	Materials ETF	Financials ETF	Consumer Discretionary ETF	Information Technology ETF	
14	Energy ETF	Consumer Staples ETF	Utilities ETF	Real Estate ETF	Financials ETF	Real Estate ETF	Energy ETF	Health Care ETF	Energy ETF	Energy ETF	Utilities ETF	Utilities ETF	Energy ETF	Utilities ETF	Energy ETF	Information Technology ETF	Utilities ETF	Industrials ETF	Communication Services ETF	Communication Services ETF	Consumer Discretionary ETF	

Comparative to Seasonal Indexes, tells you who is over or underperforming.

This is Seasonal Index - Extrapolated Current Quarter.

+: seasonal > current

-: current > seasonal

Note if the final data in the prices ends on a quarter, this will aggregate into the seasonal_index above and there will be no comparison

2022-06-16

Information Technology ETF	0.104036
Consumer Discretionary ETF	0.102679
Energy ETF	0.082078
Materials ETF	0.070544
SP1500	0.069627
SP500	0.068783
SP600	0.068558
SP400	0.068271
Health Care ETF	0.067014
Communication Services ETF	0.064694
Real Estate ETF	0.064490
Financials ETF	0.051916
Industrials ETF	0.049568
Consumer Staples ETF	0.030116
Utilities ETF	0.022161

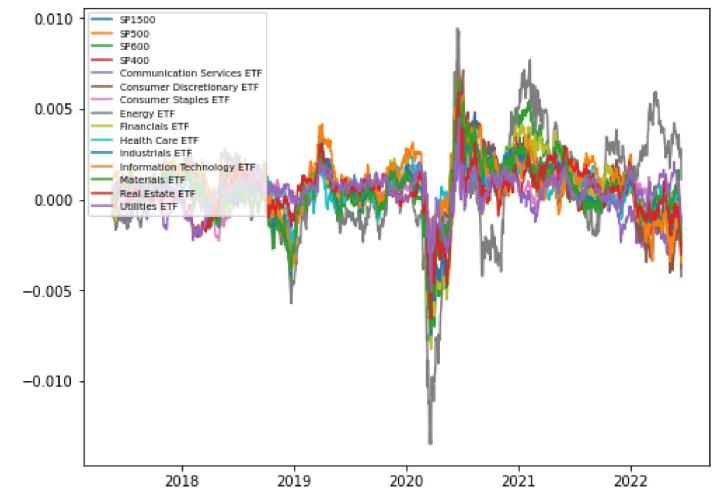
2017-03-31 00:00:00	2017-06-30 00:00:00	2017-09-30 00:00:00	2017-12-31 00:00:00	2018-03-31 00:00:00	2018-06-30 00:00:00	2018-09-30 00:00:00	2018-12-31 00:00:00	2019-03-31 00:00:00	2019-06-30 00:00:00	2019-09-30 00:00:00	2019-12-31 00:00:00	2020-03-31 00:00:00	2020-06-30 00:00:00	2020-09-30 00:00:00	2020-12-31 00:00:00	2021-03-31 00:00:00	2021-06-30 00:00:00	2021-09-30 00:00:00	2021-12-31 00:00:00	2022-03-31 00:00:00	2022-06-16 00:00:00
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0	Utilities ETF	Energy ETF	Consumer Discretionary ETF	Consumer Discretionary ETF	Energy ETF	Health Care ETF	Utilities ETF	Information Technology ETF	Utilities ETF	Real Estate ETF	Health Care ETF	Health Care ETF	Consumer Discretionary ETF	Consumer Discretionary ETF	Energy ETF	Energy ETF	Real Estate ETF	Energy ETF	Real Estate ETF	Energy ETF	Information Technology ETF
1	Health Care ETF	SP600	Energy ETF	SP400	Utilities ETF	Energy ETF	Real Estate ETF	Real Estate ETF	Financials ETF	Utilities ETF	Information Technology ETF	Consumer Staples ETF	Energy ETF	Materials ETF	SP600	SP600	Communication Services ETF	Financials ETF	Utilities ETF	Utilities ETF	Consumer Discretionary ETF
2	Industrials ETF	Materials ETF	Industrials ETF	Information Technology ETF	SP600	Industrials ETF	Consumer Staples ETF	Industrials ETF	Consumer Staples ETF	Consumer Staples ETF	Communication Services ETF	Information Technology ETF	Information Technology ETF	Communication Services ETF	Financials ETF	Financials ETF	Energy ETF	Real Estate ETF	Materials ETF	Materials ETF	Energy ETF
3	Financials ETF	Financials ETF	Information Technology ETF	SP600	Real Estate ETF	Information Technology ETF	Health Care ETF	Consumer Discretionary ETF	Industrials ETF	Financials ETF	SP1500	Utilities ETF	SP400	Industrials ETF	Communication Services ETF	Materials ETF	Financials ETF	Utilities ETF	Information Technology ETF	Consumer Staples ETF	Materials ETF
4	Consumer Staples ETF	Information Technology ETF	SP400	Financials ETF	Health Care ETF	SP500	Communication Services ETF	SP400	Communication Services ETF	SP600	SP500	Communication Services ETF	Materials ETF	Consumer Staples ETF	SP400	Industrials ETF	Health Care ETF	Consumer Staples ETF	Financials ETF	SP1500	
5	SP400	SP400	SP500	Health Care ETF	Consumer Staples ETF	SP1500	SP500	Communication Services ETF	SP500	Communication Services ETF	Financials ETF	SP500	Communication Services ETF	Information Technology ETF	Industrials ETF	Communication Services ETF	SP500	SP500	Health Care ETF	SP500	
6	SP500	Industrials ETF	SP1500	SP1500	SP1500	Consumer Staples ETF	SP1500	SP1500	Materials ETF	SP400	SP600	SP1500	SP600	SP400	Consumer Discretionary ETF	Real Estate ETF	SP1500	SP500	SP1500	Industrials ETF	SP600
7	SP1500	SP1500	Consumer Staples ETF	SP500	Consumer Discretionary ETF	SP600	Financials ETF	SP500	SP1500	SP500	Industrials ETF	Consumer Discretionary ETF	SP1500	SP500	Materials ETF	SP400	Consumer Staples ETF	Communication Services ETF	SP500	SP400	
8	Materials ETF	SP500	Materials ETF	Industrials ETF	SP500	Consumer Discretionary ETF	Materials ETF	Materials ETF	SP400	SP1500	SP400	Real Estate ETF	Industrial ETF	SP1500	SP1500	Consumer Discretionary ETF	Information Technology ETF	SP400	Industrials ETF	SP1500	Health Care ETF
9	Real Estate ETF	Health Care ETF	Financials ETF	Utilities ETF	SP400	SP400	Consumer Discretionary ETF	SP600	Real Estate ETF	Energy ETF	Energy ETF	SP400	SP500	Health Care ETF	SP500	SP1500	Industrials ETF	SP600	Health Care ETF	Real Estate ETF	Communication Services ETF
10	SP600	Communication Services ETF	Communication Services ETF	Materials ETF	Communication Services ETF	Financials ETF	Industrials ETF	Financials ETF	Health Care ETF	Industrials ETF	Materials ETF	Materials ETF	Health Care ETF	SP600	Information Technology ETF	SP500	Utilities ETF	Consumer Staples ETF	SP400	SP600	Real Estate ETF
11	Information Technology ETF	Utilities ETF	SP600	Communication Services ETF	Information Technology ETF	Communication Services ETF	SP400	Consumer Staples ETF	Information Technology ETF	Materials ETF	Consumer Discretionary ETF	Industrial ETF	Financials ETF	Utilities ETF	Real Estate ETF	Consumer Staples ETF	Materials ETF	Information Technology ETF	Energy ETF	SP400	Financials ETF
12	Consumer Discretionary ETF	Real Estate ETF	Real Estate ETF	Consumer Staples ETF	Materials ETF	Real Estate ETF	Information Technology ETF	Energy ETF	SP600	Consumer Discretionary ETF	Consumer Staples ETF	Financials ETF	Real Estate ETF	Financials ETF	Health Care ETF	Health Care ETF	SP600	Consumer Discretionary ETF	SP600	Communication Services ETF	Industrials ETF
13	Communication Services ETF	Consumer Discretionary ETF	Health Care ETF	Real Estate ETF	Industrials ETF	Utilities ETF	SP600	Utilities ETF	Consumer Discretionary ETF	Information Technology ETF	Real Estate ETF	SP600	Consumer Staples ETF	Real Estate ETF	Utilities ETF	Utilities ETF	SP400	Materials ETF	Financials ETF	Consumer Discretionary ETF	Consumer Staples ETF
14	Energy ETF	Consumer Staples ETF	Utilities ETF	Energy ETF	Financials ETF	Materials ETF	Energy ETF	Health Care ETF	Energy ETF	Health Care ETF	Utilities ETF	Energy ETF	Utilities ETF	Energy ETF	Energy ETF	Consumer Staples ETF	Information Technology ETF	Industrial ETF	Communication Services ETF	Information Technology ETF	Utilities ETF

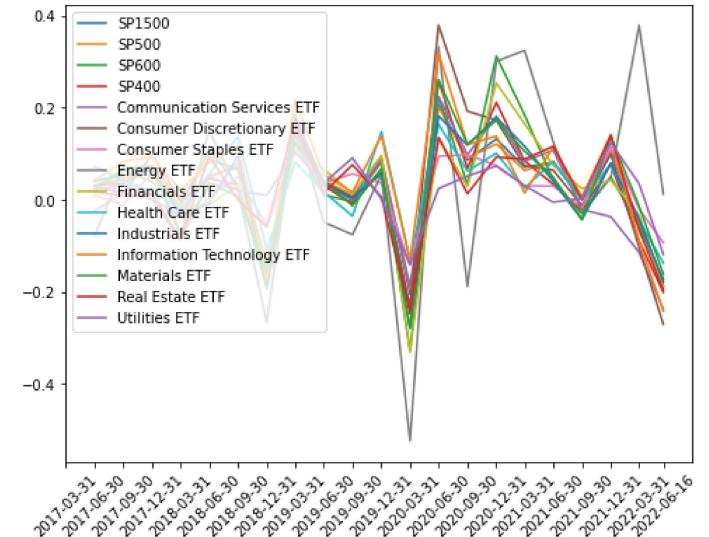
Index	Symbol	risk_trend_factor	
0	SP500	SPY	-3.322122
1	SP1500	SPTM	-3.343750
2	SP400	MDYG	-4.411325
3	SP600	SLY	-4.590014

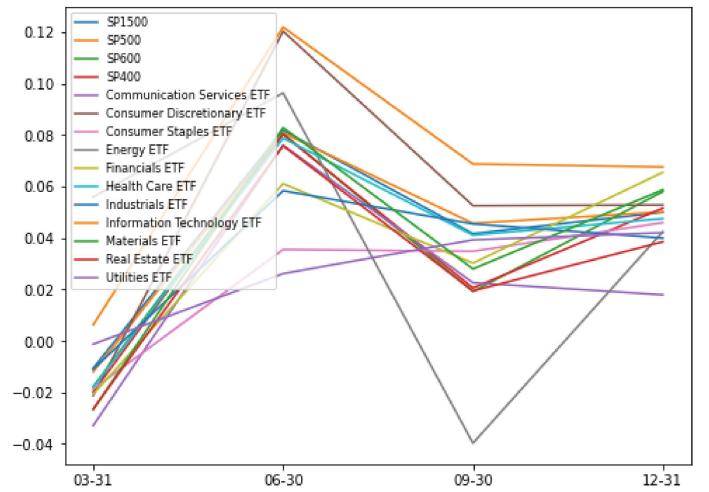
	Symbol	risk_trend_factor	Sector
3	VDE	0.462556	Energy ETF
2	VDC	-2.028745	Consumer Staples ETF
10	VPU	-2.228331	Utilities ETF
8	VAW	-2.769405	Materials ETF
5	VHT	-2.850492	Health Care ETF
9	VNQ	-2.915234	Real Estate ETF
4	VFH	-3.976216	Financials ETF
6	VIS	-4.047714	Industrials ETF
1	VCR	-4.153733	Consumer Discretionary ETF
7	VGT	-4.418808	Information Technology ETF
0	VOX	-7.422475	Communication Services ETF

Rolling Quarterly Mean Return



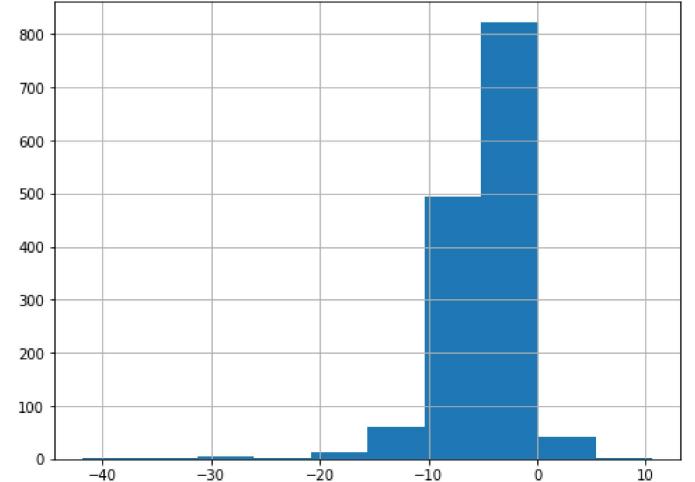
Quarterly Returns





0.2346399907935845

```
array([[<AxesSubplot:title={'center':'risk_trend_factor'}>]], dtype=object)
risk_trend_factor
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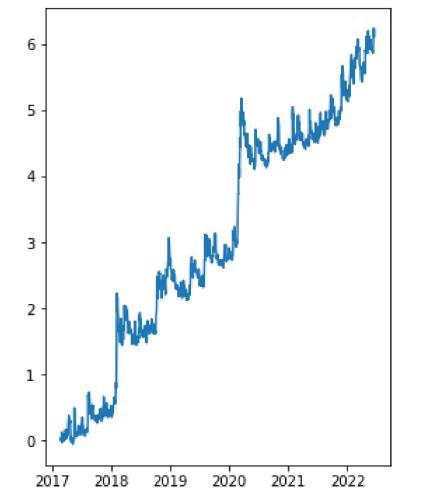
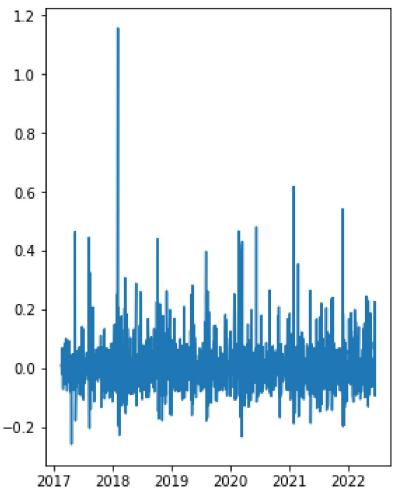
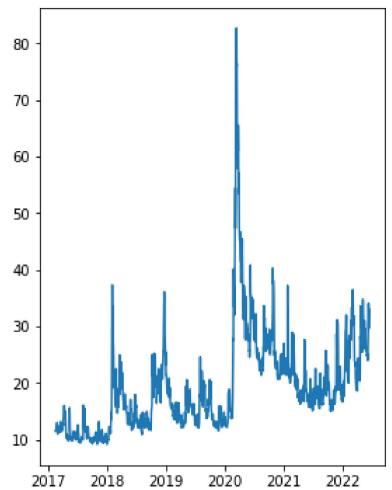


1520

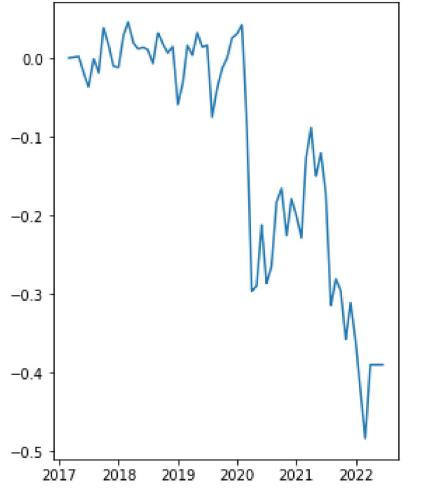
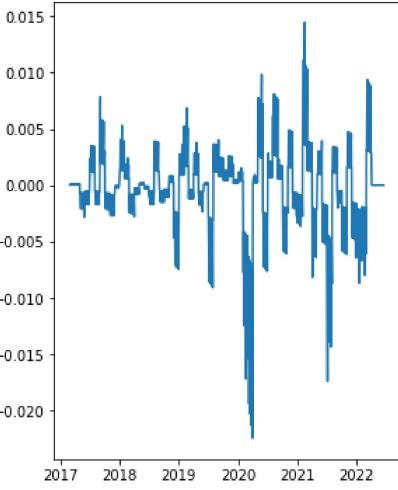
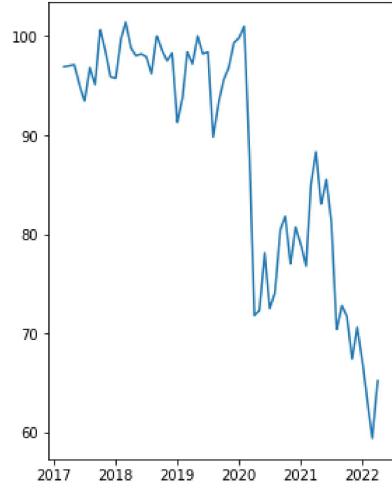
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Index(['Symbol', 'max_2y', 'min_2y', 'std_2y', 'mean_2y', 'max_1y', 'min_1y',
       'std_1y', 'mean_1y', 'latest_p', '2yr_close_0pct', '2yr_close_2pct',
       '2yr_close_9pct', '2yr_close_25pct', '2yr_close_50pct',
       '2yr_close_75pct', '2yr_close_91pct', '2yr_close_98pct',
       '2yr_close_100pct', '1yr_close_0pct', '1yr_close_2pct',
       '1yr_close_9pct', '1yr_close_25pct', '1yr_close_50pct',
       '2yr_close_75pct', '1yr_close_91pct', '1yr_close_98pct',
       '1yr_close_100pct', 'risk_trend_factor', 'supply_trend_1yr',
       'supply_trend_60d', 'supply_trend_30d', 'vol_30d_2yr', 'pct_1yr',
       'pct_2yr', 'MIN_Lookback_One_Year', 'MIN_Lookback_2_Months',
       'MIN_Lookback_1_Months', 'vol_30d', 'volume_factor', 'adf', 'hurst',
       '1YMF', 'Market Index', 'Sector'],
      dtype='object')
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	Symbol	latest_p	risk_trend_factor	adf	hurst	Sector	Market Index	vol_30d_2yr
0	ACC	64.099998	10.609763	0.977604	0.419621	error	SP400	26979850.78125
1	MTOR	35.91	4.956529	0.29595	0.43549	error	SP600	15439291.992188
2	TVTY	32.099998	2.26495	0.517984	0.449082	error	SP600	10912294.921875
3	Y	830.47998	2.012295	0.382778	0.459301	Financial Services	SP400	1621906.25
4	SAFM	206.449997	1.545589	0.651375	0.476748	Consumer Defensive	SP400	5064230.46875
5	BANF	91.559998	1.522781	0.918694	0.536414	Financial Services	SP600	2480129.6875
6	PBF	35.09	1.214106	0.622395	0.555912	Energy	SP600	92708582.421875
7	TWI	18.08	1.188361	0.834351	0.500331	Industrials	SP600	10535892.773438
8	CEIX	49.060001	1.103516	0.891799	0.522582	Energy	SP600	10281161.132812
9	LNTH	59.540001	1.052988	0.957446	0.533091	Healthcare	SP600	14113253.515625
10	GO	40.450001	0.992056	0.177952	0.402887	Consumer Defensive	SP400	21743692.96875
11	XOM	91.389999	0.949011	0.916245	0.534339	error	SP500	552368724.023438
12	MCK	304.019989	0.9363	0.997806	0.461676	Healthcare	SP500	22892569.726562
13	COP	102.419998	0.839988	0.929388	0.48705	Energy	SP500	189223264.453125
14	HRB	33.27	0.825493	0.68658	0.435784	Consumer Cyclical	SP400	54246410.742188
15	SM	43.299999	0.776368	0.889778	0.475064	Energy	SP600	85523868.75
16	DVN	63.27	0.769026	0.955415	0.547561	Energy	SP500	237831403.90625
17	ROG	257.079987	0.729041	0.707598	0.478685	error	SP600	3248152.734375
18	SJI	33.759998	0.666664	0.156179	0.415159	error	SP600	26835210.15625
19	APA	41.759998	0.662665	0.332977	0.446771	Energy	SP500	204947064.257812
20	MPC	91.980003	0.658939	0.710335	0.51907	Energy	SP500	141887166.210938
21	DINO	47.77	0.622034	0.504978	0.561898	Energy	SP400	51415267.1875
22	MRO	25.66	0.621752	0.862619	0.540113	Energy	SP500	490913172.265625
23	MTDR	56.040001	0.61596	0.921632	0.464965	Energy	SP400	48834102.929688
24	ROCC	41.779999	0.612375	0.601456	0.578912	Energy	SP600	12003625.0
25	VLO	118.739998	0.56008	0.703807	0.534876	Energy	SP500	90493904.492188
26	PSB	185.740005	0.552514	0.808632	0.476969	error	SP400	2715957.617188
27	CIVI	66.389999	0.47854	0.000353	0.475979	Energy	SP600	11253325.390625
28	VDE	108.400002	0.462556	0.733758	0.517254	error	NaN	25794671.875
29	WRB	66.300003	0.379041	0.938034	0.452933	Financial Services	SP500	24747816.40625
30	PDCE	72.650002	0.347614	0.542285	0.491711	Energy	SP400	24816581.054688
31	FANG	133.679993	0.304849	0.668762	0.470333	Energy	SP500	60309967.578125
32	MANT	94.690002	0.303582	0.565273	0.363266	Technology	SP600	4412490.234375
33	FCN	162.949997	0.286702	0.916688	0.405187	Industrials	SP400	6861602.34375
34	OXY	56.810001	0.244336	0.695678	0.543336	Energy	SP500	499589648.4375
35	EOG	119.559998	0.24174	0.682764	0.481992	Energy	SP500	97161242.382812

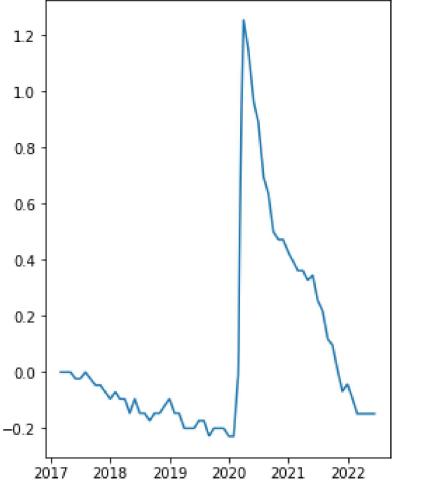
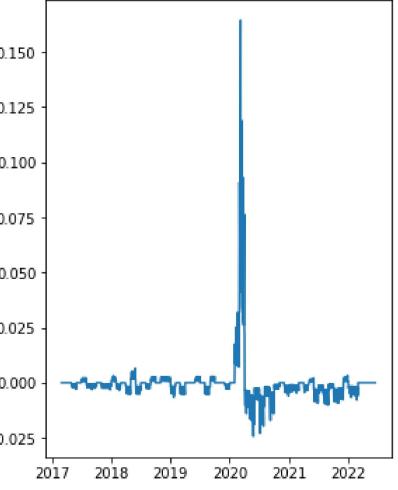
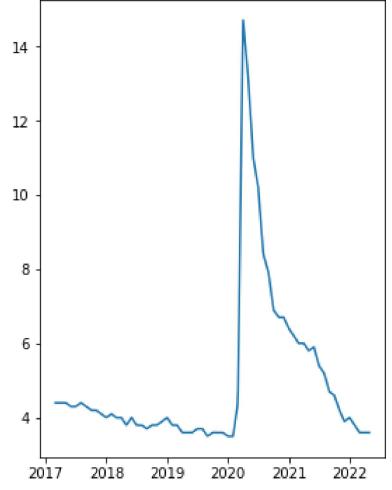
nominal, pct_change, pct_change().cumsum
Market volatility



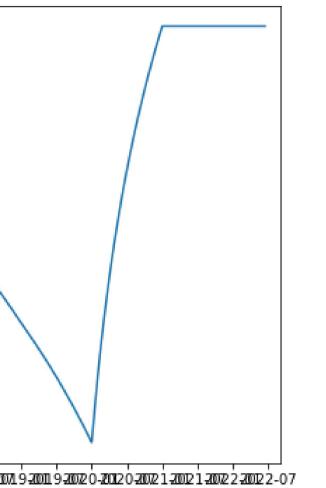
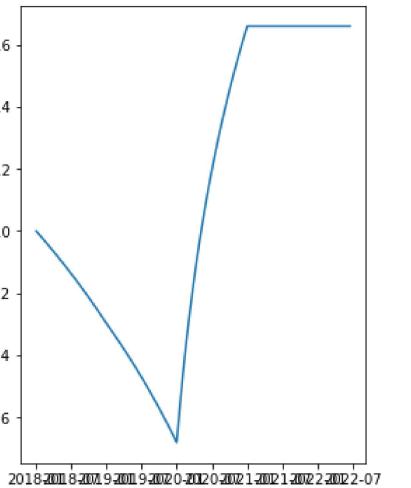
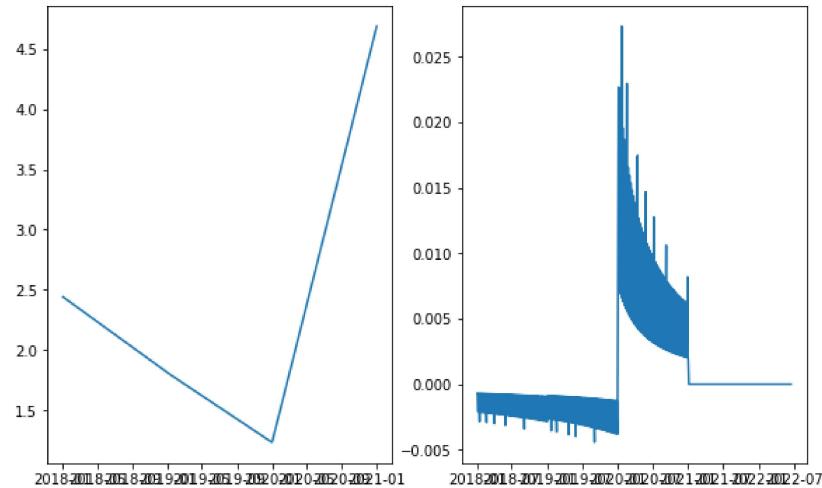
Consumer Confidence



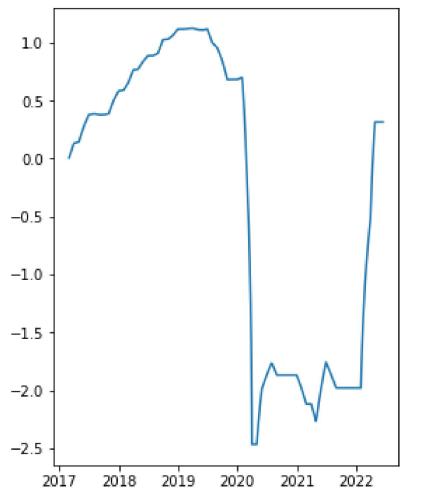
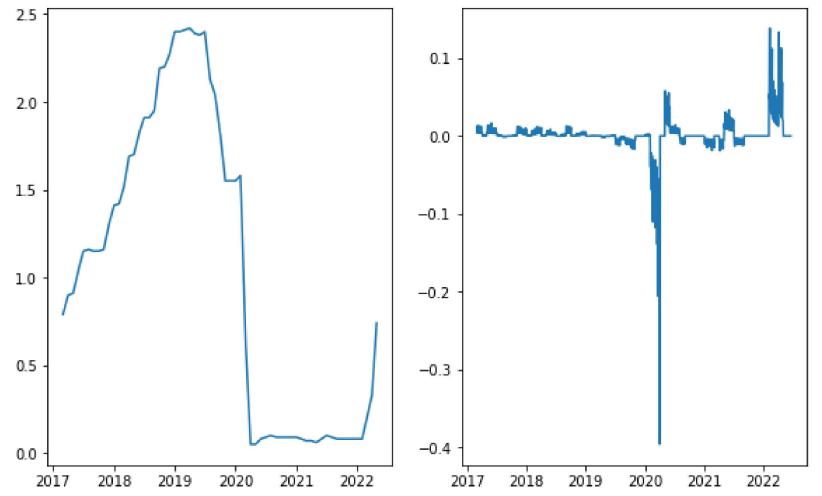
Unemployment



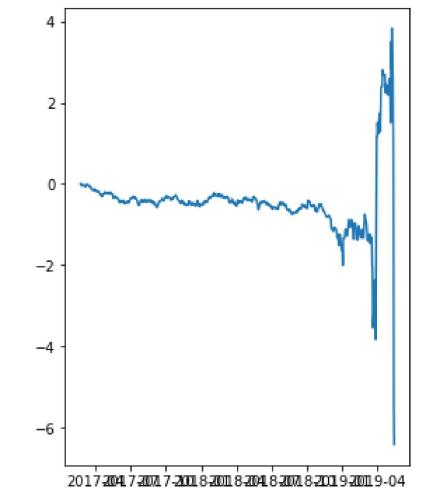
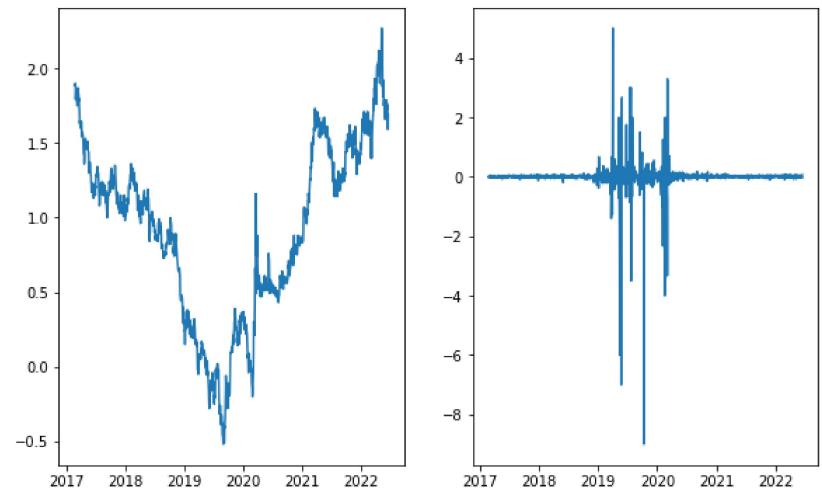
Inflation



Interest Rates

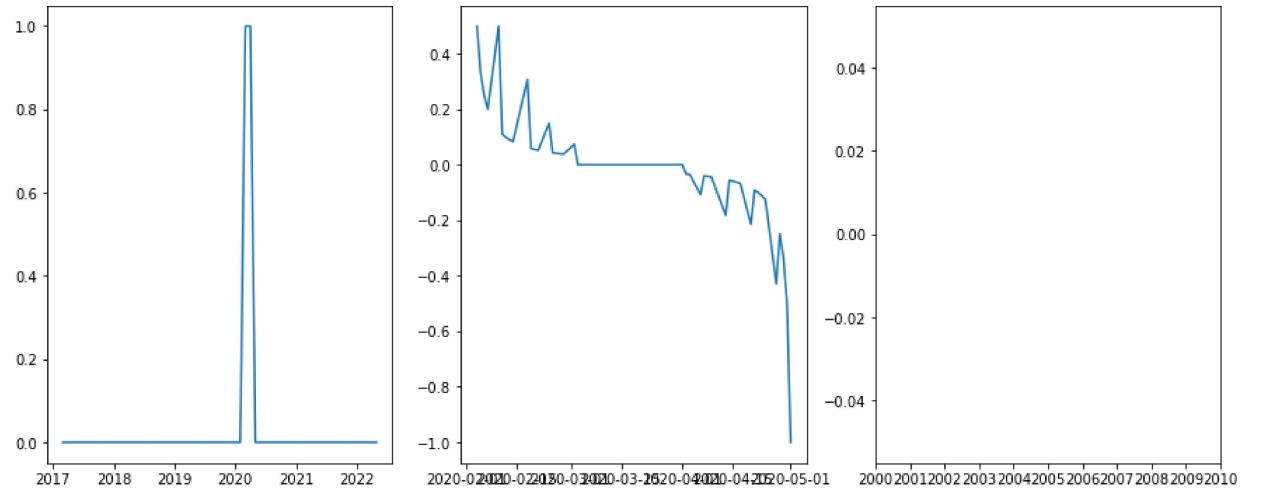


10 Year to 3 Month



Recession Indicator

2017-2019



adf < .05 or .01, mean reverting

Hurst

> .5 - The time series is mean reverting.

= .5 - The time series is a Geometric Brownian Motion.

< .5 - The time series is trending.

symbol: SPY

sector: error

sector: error

Index: SP500

vol_30d_2yr: 1719865437.6953125

Sector 1YMF: -285.47003173828125

1YMF: -285.47003173828125

risk trend factor: -3.322122130654123

totalAssets trailingPE

SPY 3.710190e+11 2.538166

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
--	-----------	---------	----------	---------	--------	---------	-----------	-----------

2022-06-16	366.649994	369.000236	397.879841	426.759446	420.668572	24.765352	371.137868	470.199277
------------	------------	------------	------------	------------	------------	-----------	------------	------------

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
--	---------------	----------	-------------	---------	-----	-------

SPY	1.187217	366.649994	1719865437.695312	0.37404	0.668152	0.422436
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l axis r axis

legend		legend	
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blue	symbol	magenta	sector
------	--------	---------	--------

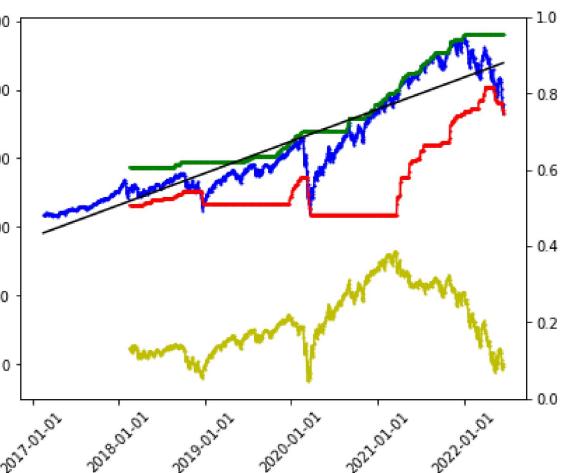
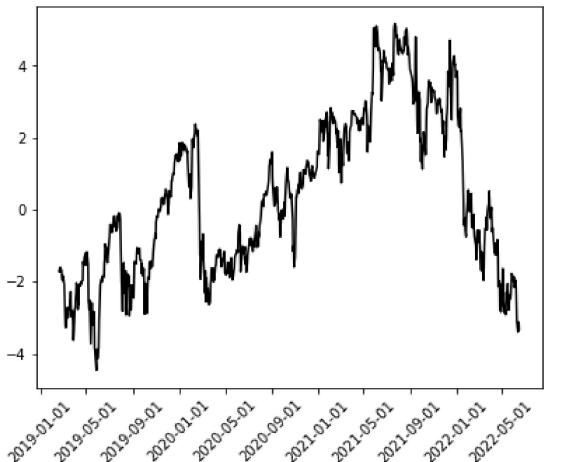
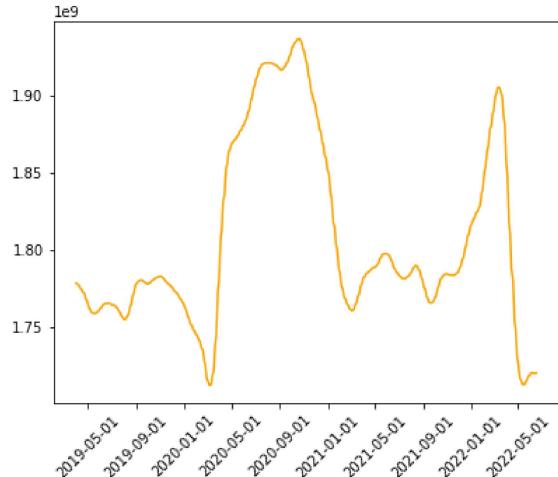
green	trailing_1yr_max	cyan	index
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red	trailing_1yr_min		
-----	------------------	--	--

orange	30d_vol_2yr		
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black	risk_trend_factor/linear		
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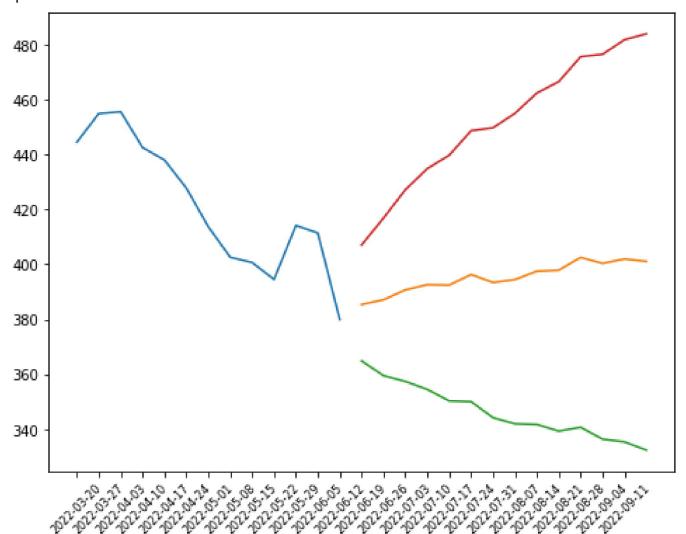
yellow	supply_trend_1yr		
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```

ets next 13 weeks
inner cv scores:
best model: ['add', 'add', False]
best inner cv score, sdev (11 folds): 900.8255729001365 691.1877332173517
test cv mean error, stdev (10 folds): 947.3979204155439 708.2791359713194
sell date: 2022-08-28
expected return: 0.09779109831779359
discounted return: 0.0012966742399809217
quarter return: 1.126614090075292

```



```
['options', ('2022-06-17', '2022-06-30', '2022-09-16', '2022-09-30', '2022-12-16', '2023-01-20', '2023-03-17', '2023-06-16', '2023-12-15', '2024-01-19', '2024-12-20')]
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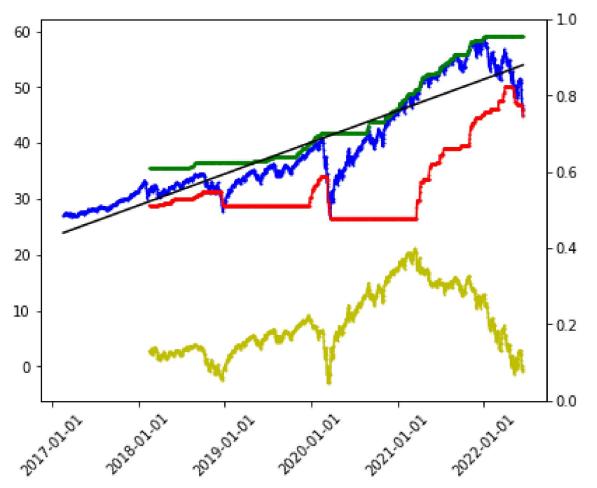
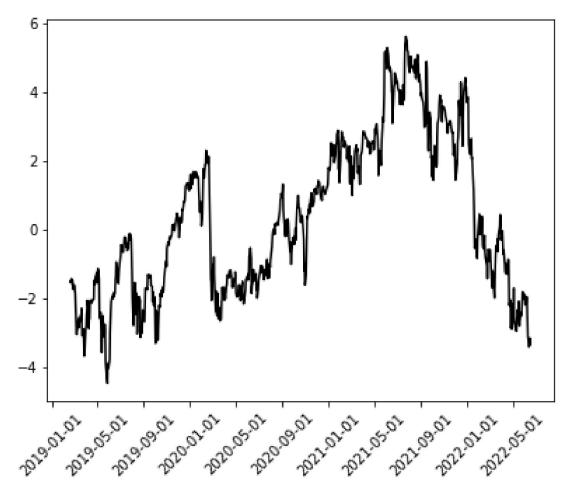
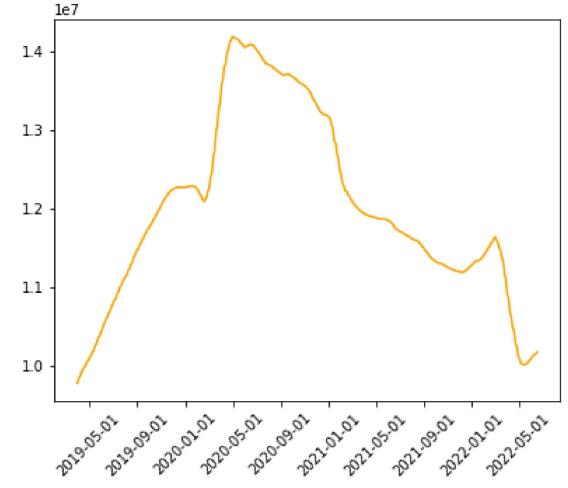
symbol: SPTM
sector: error
sector: error
Index: SP1500
vol_30d_2yr: 10178996.6796875
Sector 1YMF: -35.31000900268555
1YMF: -35.31000900268555
risk trend factor: -3.3437504176840096
    totalAssets
SPTM 5.538233e+09

```

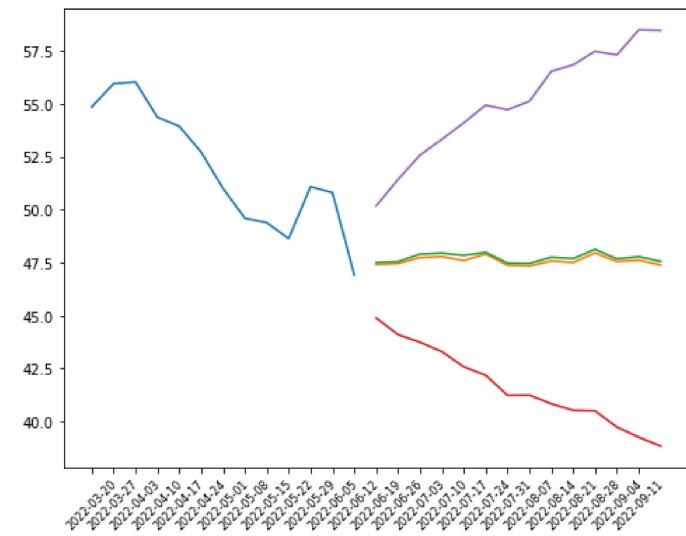
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	45.18999	45.493599	49.085238	52.676877	51.837778	3.005692	45.826394	57.849161

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
SPTM	1.613175	45.189999	10178996.679688	0.382941	0.660777	0.429302

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		



ets next 13 weeks
 inner cv scores:
 best model: ['mul', 'mul', True]
 best inner cv score, sdev (11 folds): 14.385067335438295 11.7776188121974
 test cv mean error, stdev (10 folds): 15.153048662666269 12.087009213381313
 sell date: 2022-08-28
 expected return: 0.06116742222449132
 discounted return: 0.0008249184445154878
 quarter return: 1.0788128369935377

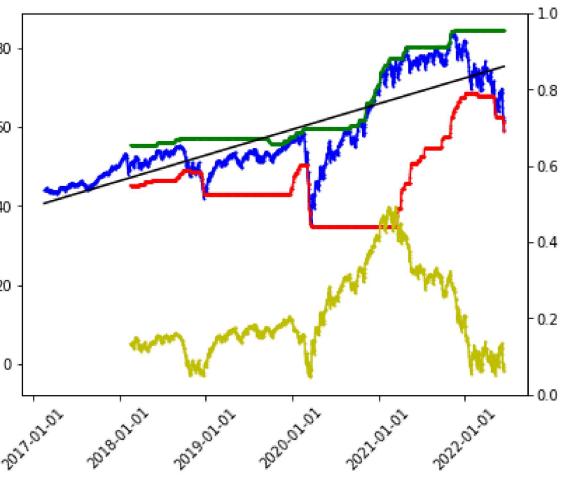
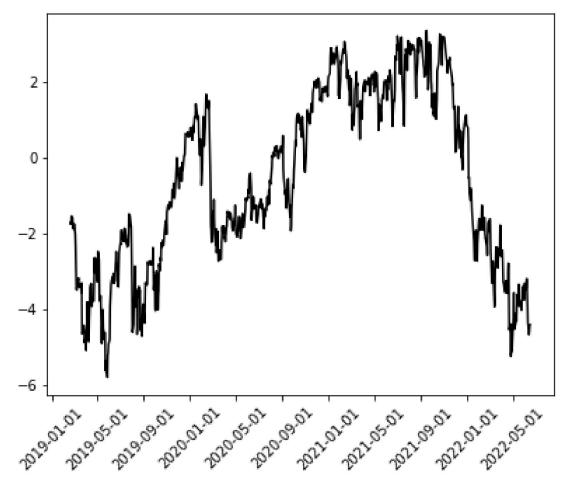
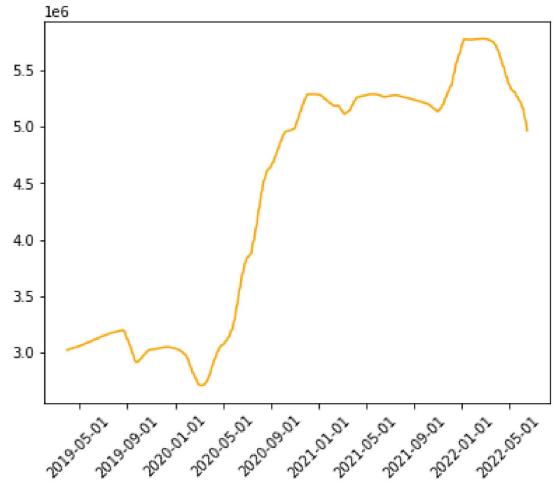


['options', ('2022-06-17',)]
 symbol: MDYG
 sector: error
 sector: error
 Index: SP400
 vol_30d_2yr: 4966221.6796875
 Sector 1YMF: -70.88999938964844
 1YMF: -70.88999938964844
 risk trend factor: -4.411325496943257
 Empty DataFrame
 Columns: []
 Index: [MDYG]

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	59.32	60.264492	65.645397	71.026302	69.286825	4.228363	60.8301	77.743551

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
MDY	0.566245	59.32	4966221.679688	0.237412	0.497173	0.451359

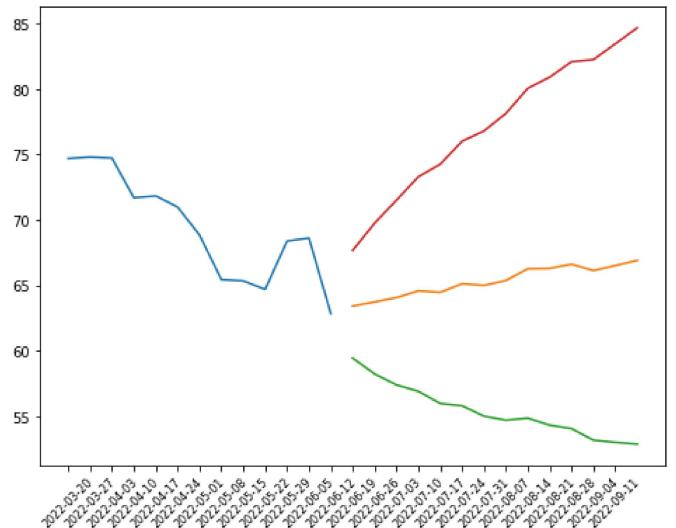
l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		



```

ets next 13 weeks
inner cv scores:
best model: ['add', 'add', False]
best inner cv score, sdev (11 folds): 44.77116239403053 49.782598109890024
test cv mean error, stdev (10 folds): 48.33338950551348 50.85817154408968
sell date: 2022-09-18
expected return: 0.1278630858607739
discounted return: 0.0012946520482137736
quarter return: 1.1264047836005713

```



```

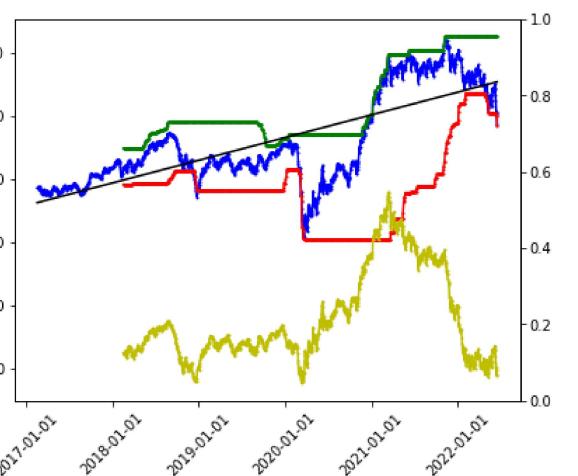
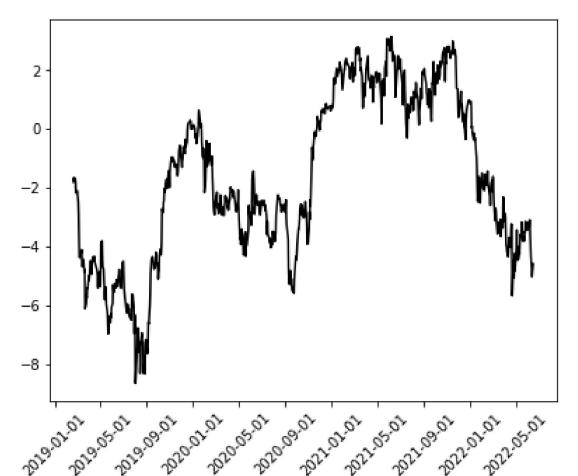
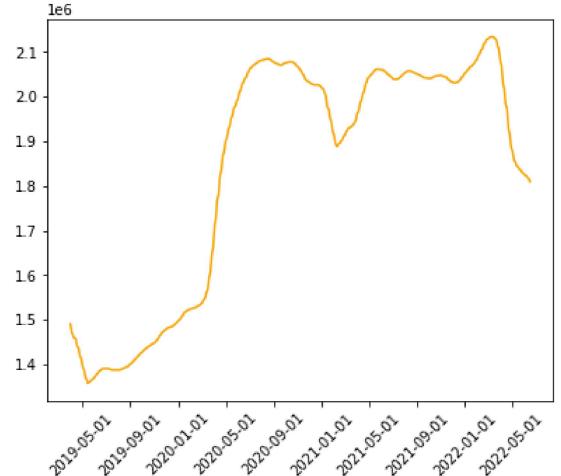
['options', ('2022-06-17',)]
symbol: SLY
sector: error
sector: error
Index: SP600
vol_30d_2yr: 1809732.8125
Sector 1MFE: -79.04000854492188
1MFE: -79.04000854492188
risk trend factor: -4.590013818867828
Empty Dataframe
Columns: []
Index: [SLY]

```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	77.5	79.070455	85.374285	91.678116	88.497619	4.367275	79.763069	97.23217

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
SLY	1.243664	77.5	1809732.8125	0.437588	0.531287	0.513642

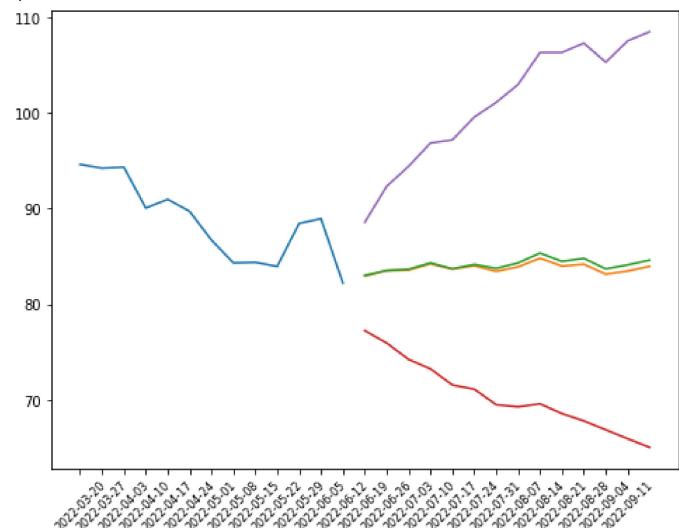
	l axis	r axis
blue	symbol	magenta sector
green	trailing_1yr_max	cyan index
red	trailing_1yr_min	
orange	30d_vol_2yr	
black	risk_trend_factor/linear	
yellow	supply_trend_1yr	



```

ets next 13 weeks
inner cv scores:
best model: ['mul', None]
best inner cv score, sdev (11 folds): 84.60402975821997 83.69624498551492
test cv mean error, stdev (10 folds): 90.26006064882574 85.75353983896113
sell date: 2022-08-14
expected return: 0.09435383799012423
discounted return: 0.0015557621648785158
quarter return: 1.153751603095759

```



6/17/22, 10:15 AM

AnalyzeSP1500

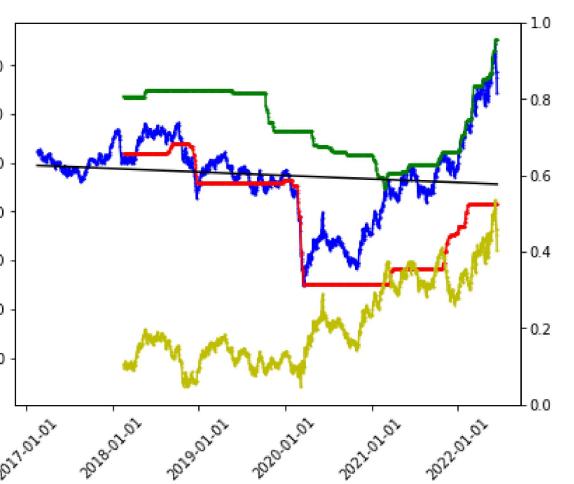
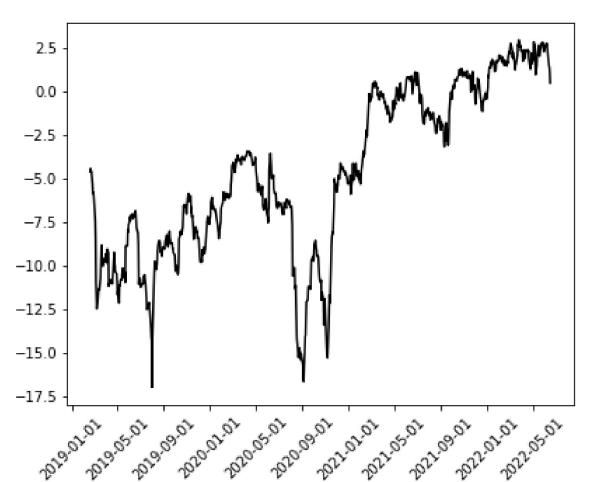
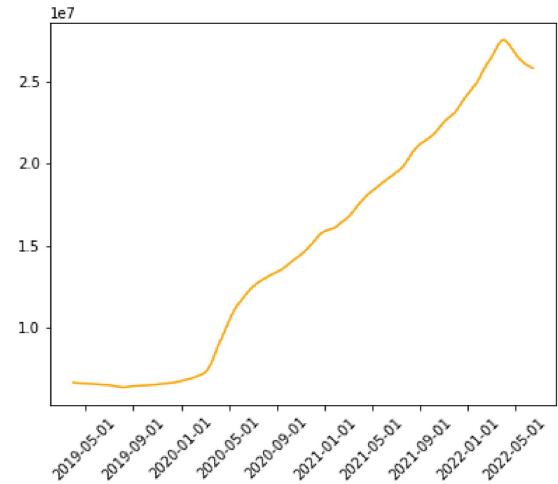
symbol: VDE
sector: error
sector: Energy
Index: nan
vol_30d_2yr: 25794671.875
Sector 1YMF: 14.330001831054688
1YMF: 14.330001831054688
risk trend factor: 0.4625564970394849
totalAssets trailingPE
VDE 9.791998e+09 8.720438

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDDev 90d_lower 90d_upper

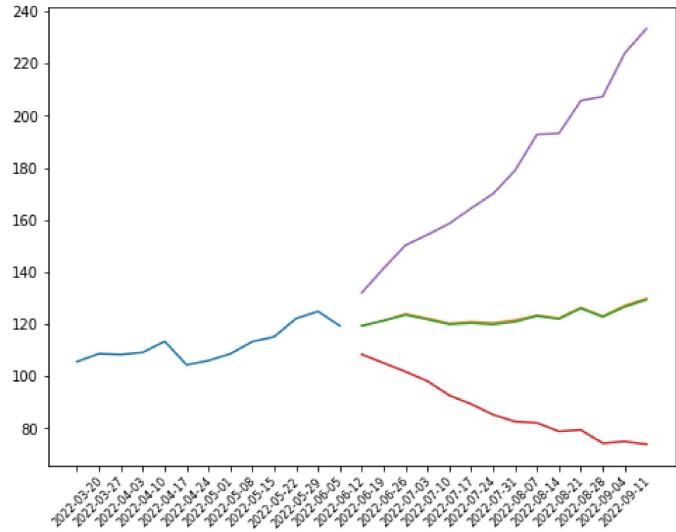
2022-06-16 108.400002 109.091942 119.897302 130.702662 112.549524 6.711476 99.126572 125.972476

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VDE	0.827969	108.400002	25794671.875	0.765817	0.733758

l axis		r axis	
legend	symbol	legend	sector
blue	trailing_1yr_max	magenta	sector
green	trailing_1yr_min	cyan	index
red	30d_vol_2yr		
orange	risk_trend_factor/linear		
black	supply_trend_1yr		



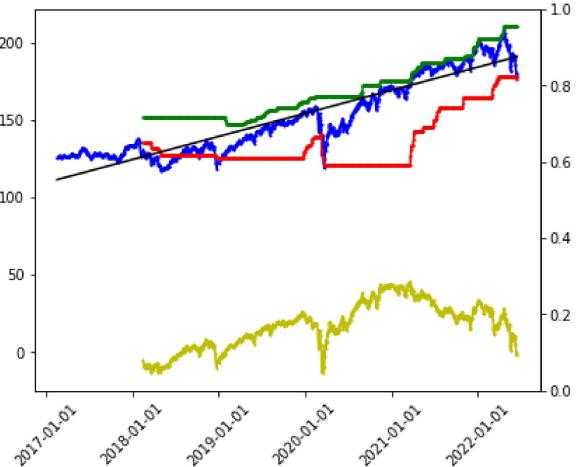
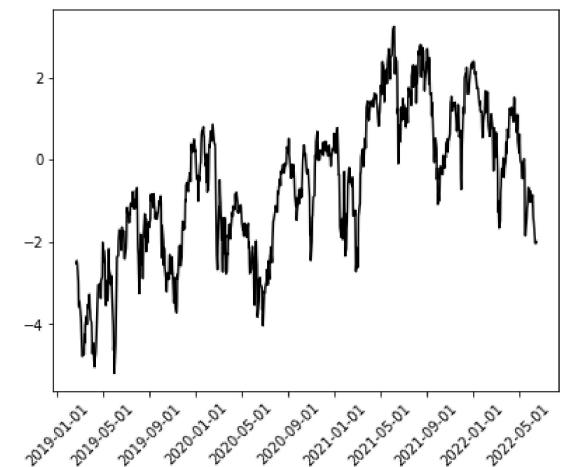
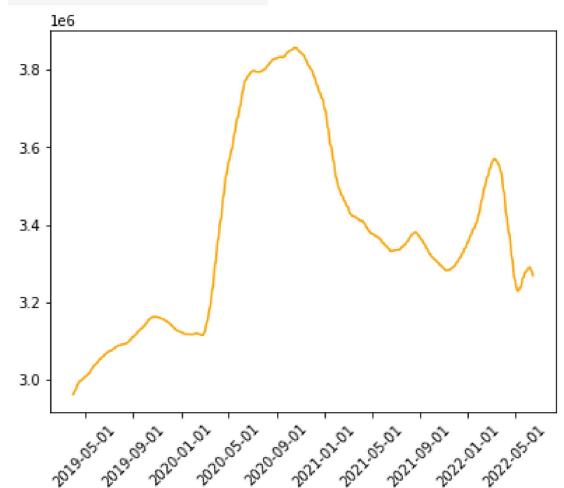
ets next 13 weeks
inner cv scores:
best model: ['mul', 'mul', True]
best inner cv score, sdev (11 folds): 154.91171156477313 205.2085913123838
test cv mean error, stdev (10 folds): 169.90052434704552 209.4046631486799
sell date: 2022-09-18
expected return: 0.19786552676250987
discounted return: 0.001943189262701539
quarter return: 1.1955423616821854



```
['options', ('2022-06-17',)]
symbol: VDC
sector: error
sector: Consumer Defensive
Index: nan
vol_30d_2yr: 3268846.484375
Sector 1YMF: -69.8699951171875
1YMF: -69.8699951171875
risk trend factor: -2.02874535900685
    totalAssets
VDC 8.239956e+09
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper
2022-06-16 177.660004 177.374402 186.335397 195.296392 194.919525 7.598617 179.722291 210.116758
```

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VDC	1.480492	177.660004	3268846.484375	0.4983	0.764603	0.355847

	I axis	r axis	
	legend	legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		



```

ets next 13 weeks
inner cv scores:
best model: ['add', 'mul', True]
best inner cv score, sdev (11 folds): 90.81052485722661 59.81314897701307
test cv mean error, stdev (10 folds): 92.1432809448846 62.57657938551701
sell date: 2022-07-24
expected return: 0.04768406792305951
discounted return: 0.0012597679376336046
quarter return: 1.1228001609062328

```



```
['options', ('2022-07-15',)]
```

```

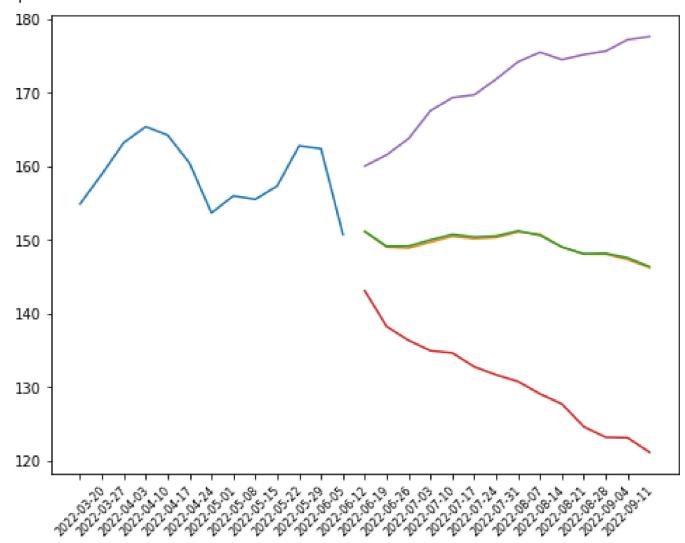
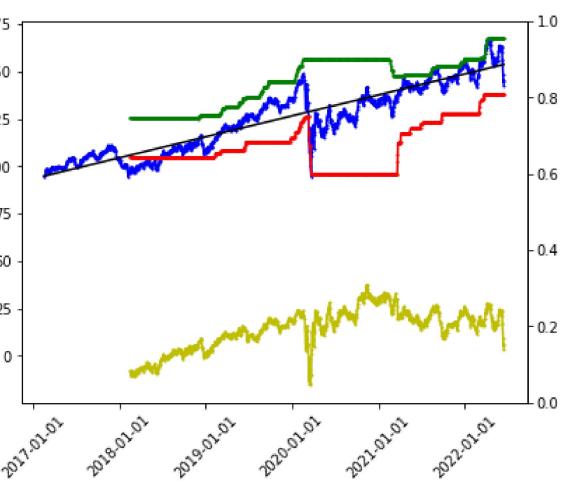
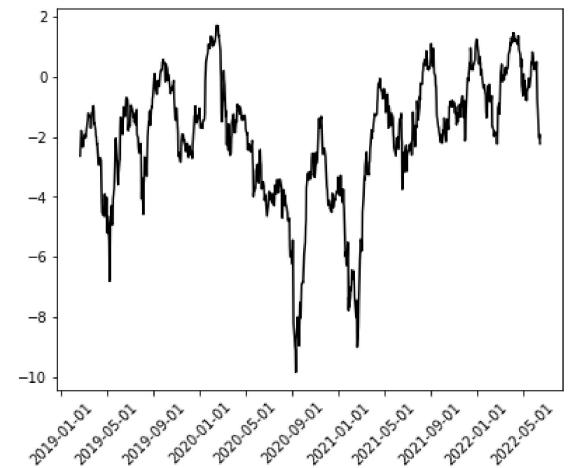
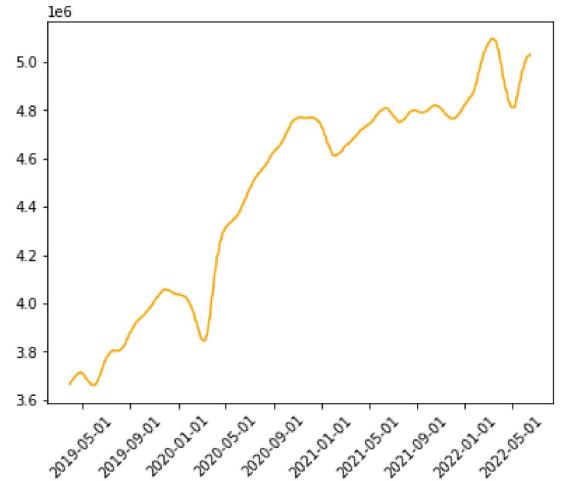
symbol: VPU
sector: error
sector: Utilities
Index: nan
vol_30d_2yr: 5029426.5625
Sector 1YMF: -55.529998779296875
1YMF: -55.529998779296875
risk trend factor: -2.228330772852824
totalAssets
VPU 7.854255e+09

```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	142.639999	145.026922	157.167143	169.307365	158.766666	5.333557	148.099552	169.433781

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst		
VPU	1.238869	142.639999	5029426.5625	0.476943	0.575311	0.291623		

l axis	r axis
legend	
blue	symbol
green	trailing_1yr_max
red	trailing_1yr_min
orange	30d_vol_2yr
black	risk_trend_factor/linear
yellow	supply_trend_1yr
magenta	sector
cyan	index

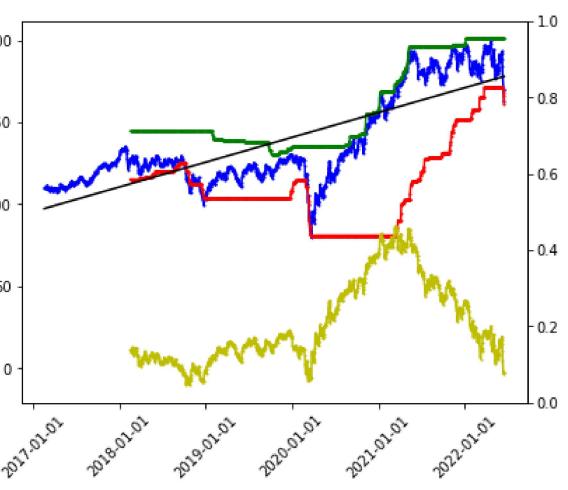
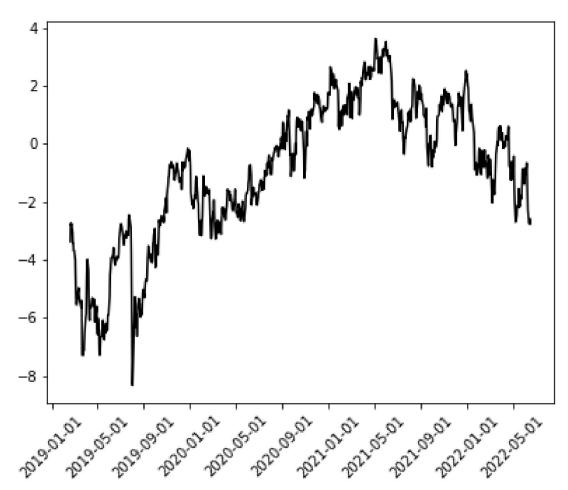
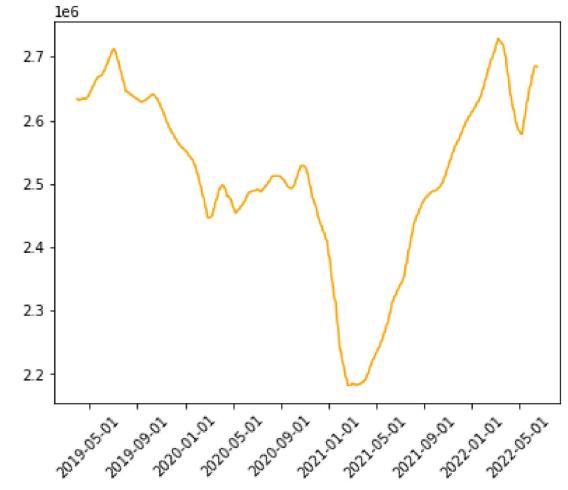


```
['options', ('2022-06-17',)]  
symbol: VAW  
sector: error  
sector: Basic Materials  
Index: nan  
vol_30d_2yr: 2683957.03125  
Sector 1YME: -109.88999938964844  
1YMF: -109.88999938964844  
risk trend factor: -2.769404672772488  
    totalAssets  
VAW 5.085875e+09
```

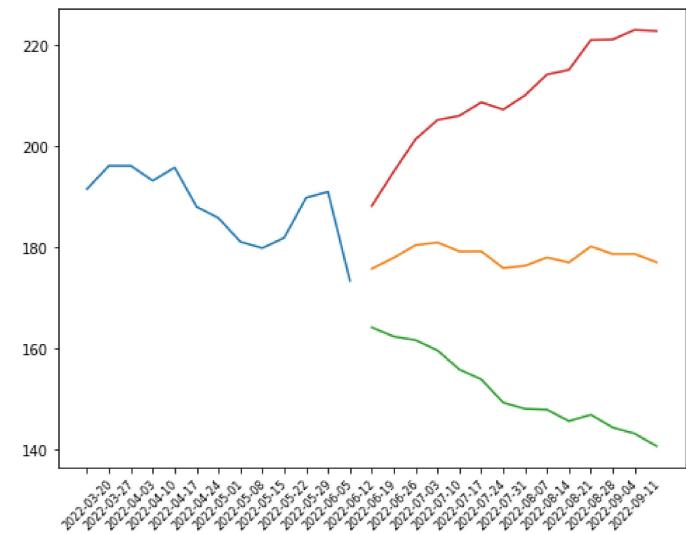
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	162.75	166.399295	182.418888	198.438482	187.714921	7.971112	171.772698	203.657145

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VAW	0.997818	162.75	2683957.03125	0.552809	0.655014	0.425897

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		



ets next 13 weeks
 inner cv scores:
 best model: ['add', None]
 best inner cv score, sdev (11 folds): 207.70738265136504 132.65825138883528
 test cv mean error, stdev (10 folds): 223.6764419754035 128.65814736552585
 sell date: 2022-07-10
 expected return: 0.1119318183260182
 discounted return: 0.004623651000345452
 quarter return: 1.5286660891466681

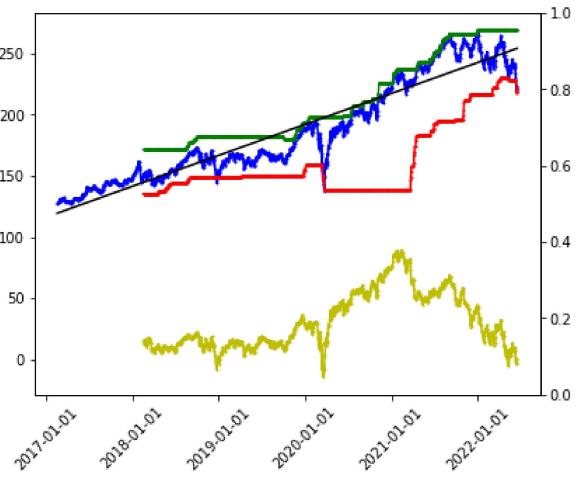
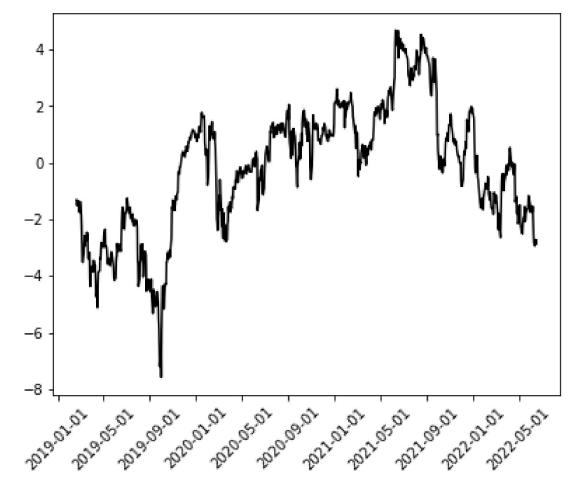
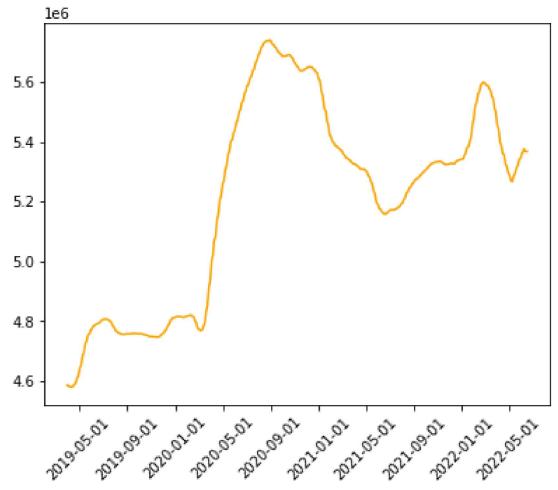


```

['options', ('2022-08-19',)]
symbol: VHT
sector: error
sector: Healthcare
Index: nan
vol_30d_2yr: 5367363.8671875
Sector 1YMF: -124.31001281738281
1YMF: -124.31001281738281
risk trend factor: -2.8504922628415557
  totalAssets  trailingPE
VHT  1.866525e+10  4.76247
  Adj Close  21dBOLD  21dMA-TP  21dBOLU  90dSMA  90dSDev  90d_lower  90d_upper
2022-06-16  219.509995  220.654154  235.040794  249.427434  244.335872  11.224845  221.886182  266.785562
  
```

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
VHT	1.214414	219.509995	5367363.867188	0.39819	0.637303	0.3325

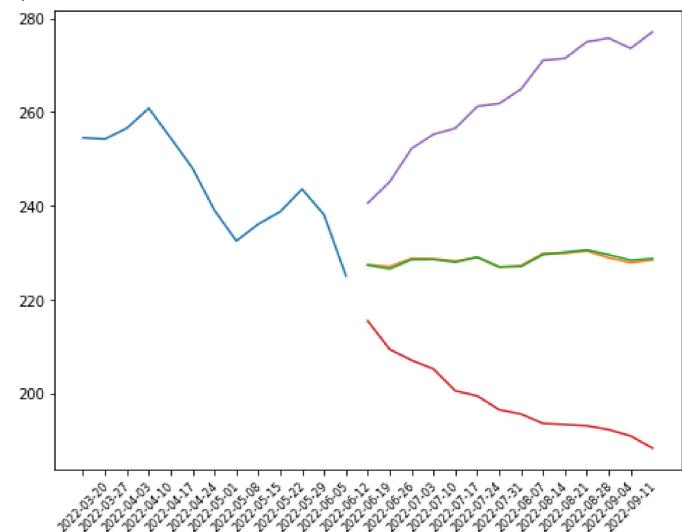
l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		



```

ets next 13 weeks
inner cv scores:
best model: ['mul', None]
best inner cv score, sdev (11 folds): 279.5978770253289 226.12512182809652
test cv mean error, stdev (10 folds): 277.2864584836826 237.03809276595766
sell date: 2022-08-28
expected return: 0.049295339393070646
discounted return: 0.0006685405061188643
quarter return: 1.0634147325506256

```



```

['options', ('2022-06-17',)]
symbol: VNO
sector: error
sector: Real Estate
Index: nan
vol_30d_2yr: 102987975.5859375
Sector 1MFE: -78.06999206542969
1MFE: -78.06999206542969
risk trend factor: -2.915234256258139
    totalAssets
VNO 7.839537e+10

```

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
VNO	1.205023	87.040001	102987975	585938	0.280727	0.448402	0.395581

r axis

legend

legend

blue symbol

ta sector

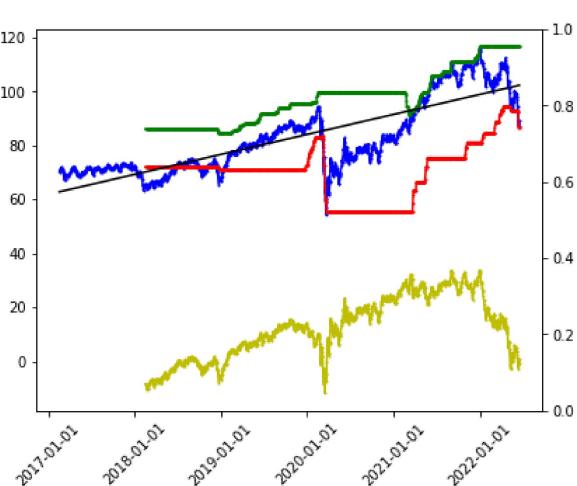
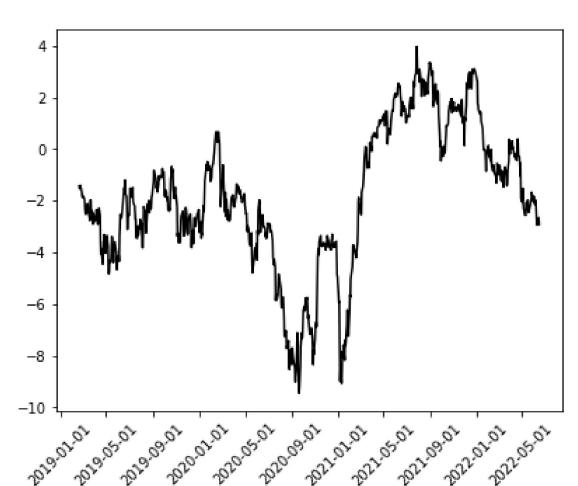
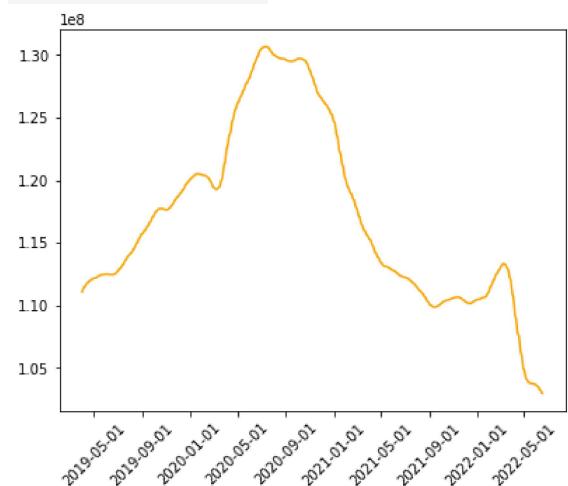
green trailing_1yr_max

an index

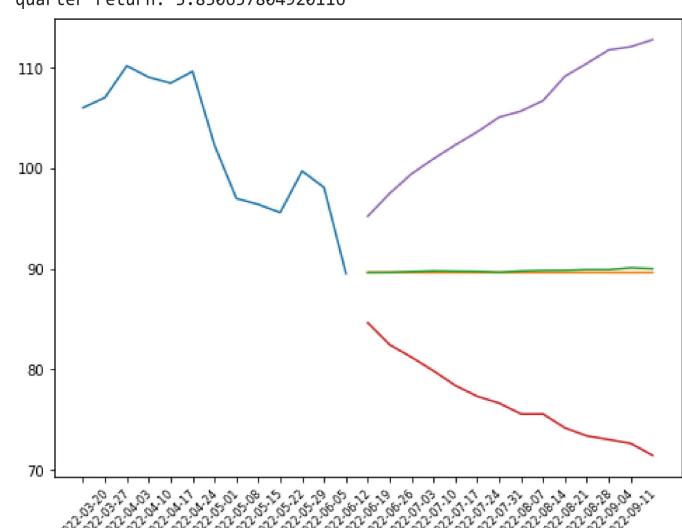
red trailing_1yr_min

orange 30d_vol_2yr

black risk_trend_factor/linear



```
ets next 13 weeks
inner cv scores:
best model: [None, 'mul', True]
best inner cv score, sdev (11 folds): 74.07196505972851 107.14799507369915
test cv mean error, stdev (10 folds): 78.54723351089628 111.39324023538671
sell date: 2022-06-19
expected return: 0.029626841200132554
discounted return: 0.01470529770970086
quarter return: 3.820657804920116
```



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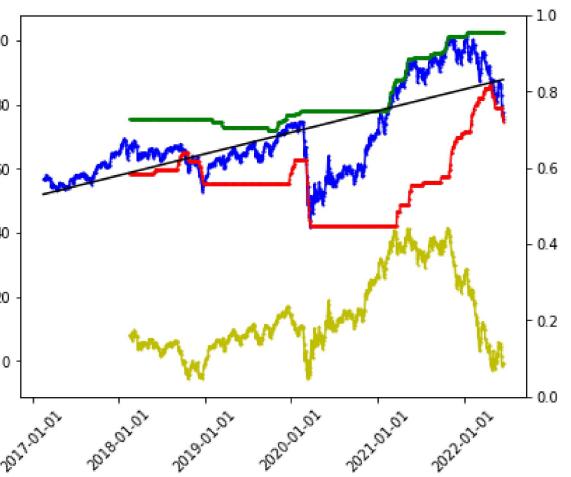
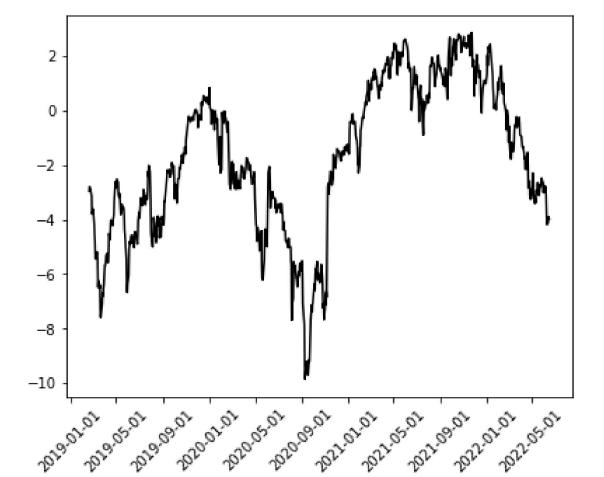
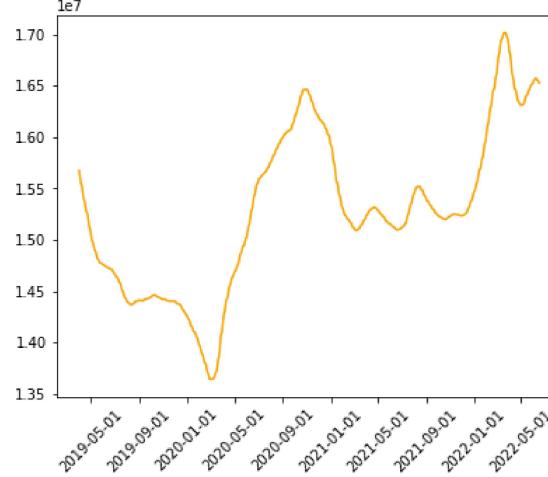
AnalyzeSP1500

```
[‘options’, (‘2022-06-17’, ‘2023-01-20’, ‘2024-01-19’)]  
symbol: VFH  
sector: error  
sector: Financial Services  
Index: nan  
vol_30d_2yr: 16527203.7109375  
Sector 1YMF: -73.55999755859375  
1YMF: -73.55999755859375  
risk trend factor: -3.976216084248311  
totalAssets  
VFH 1.046217e+10
```

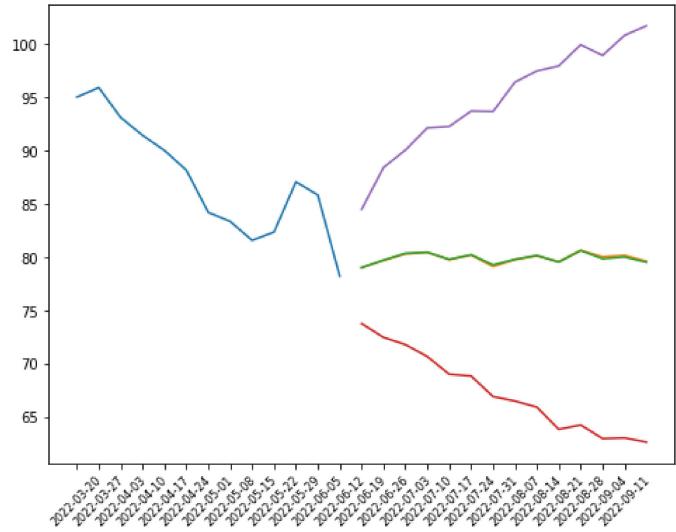
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	75.419998	75.781429	82.755715	89.73	87.139048	5.472163	76.194721	98.083374

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VFH	1.217683	75.419998	16527203.710938	0.429233	0.482221	0.491488

	I axis	r axis
	legend	legend
blue	symbol	magenta
green	trailing_1yr_max	cyan
red	trailing_1yr_min	
orange	30d_vol_2yr	
black	risk_trend_factor/linear	
yellow	supply_trend_1yr	



```
ets next 13 weeks  
inner cv scores:  
best model: [‘mul’, None]  
best inner cv score, sdev (11 folds): 60.09383639547041 57.615450340053094  
test cv mean error, stdev (10 folds): 63.924860649057884 59.07753873960204  
sell date: 2022-08-28  
expected return: 0.06890778554346759  
discounted return: 0.0009259473966229947  
quarter return: 1.0888779315240102
```



['options', ('2022-08-19',)]

symbol: VIS
 sector: error
 sector: Industrials
 Index: nan
 vol_30d_2yr: 3375701.3671875
 Sector 1YMF: -141.6699981689453
 1YMF: -141.6699981689453

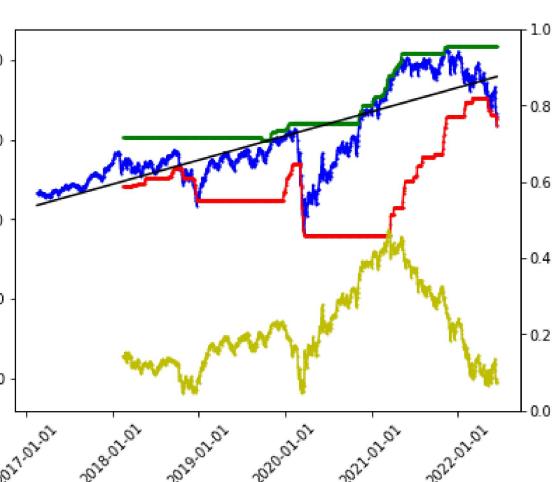
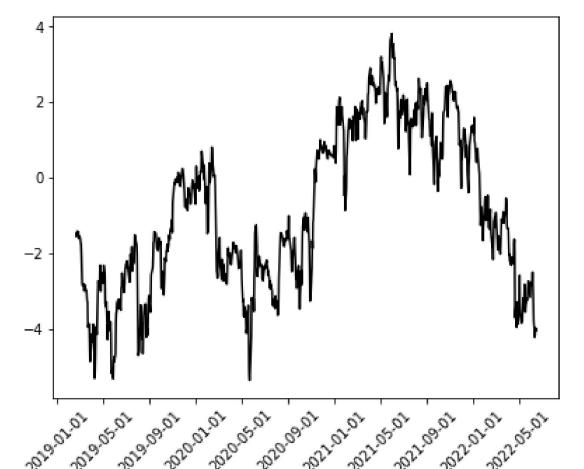
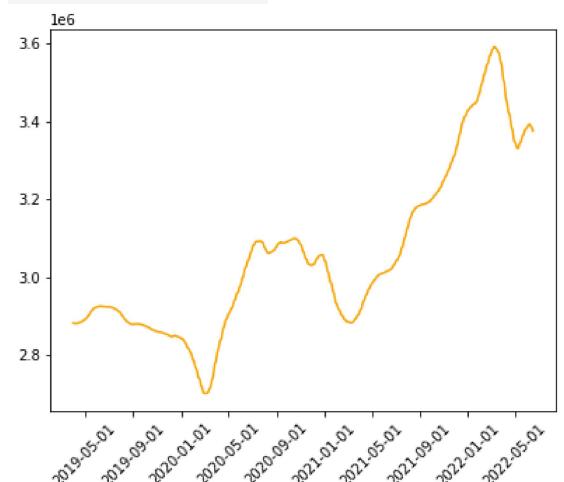
risk trend factor: -4.0477142333984375
 Empty DataFrame

Columns: []
 Index: [VIS]

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	159.779999	161.379178	173.219365	185.059552	181.926032	9.652982	162.620068	201.231995

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VIS	0.873152	159.779999	3375701.367188	0.424826	0.48671	0.470783

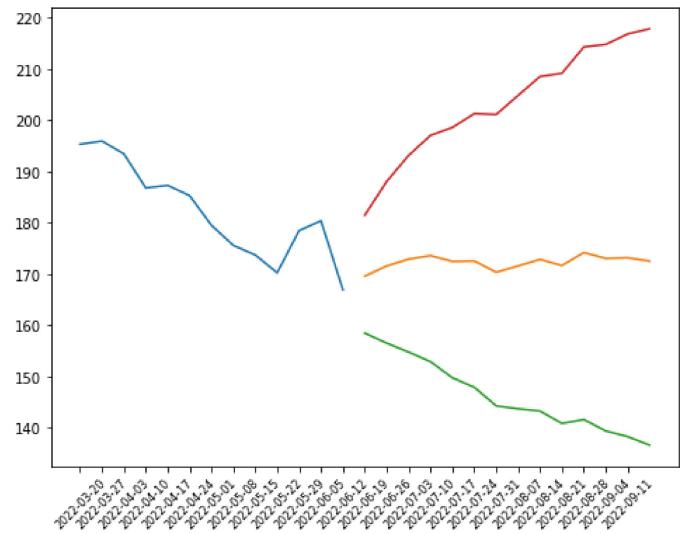
l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		



```

ets next 13 weeks
inner cv scores:
best model: ['add', 'add', False]
best inner cv score, sdev (11 folds): 280.89042894226026 336.00159009704754
test cv mean error, stdev (10 folds): 303.7883179277397 344.1210971356311
sell date: 2022-08-28
expected return: 0.09023316926232705
discounted return: 0.001200603343935569
quarter return: 1.11671267078747

```



```
['options', ('2022-08-19',)]
```

```

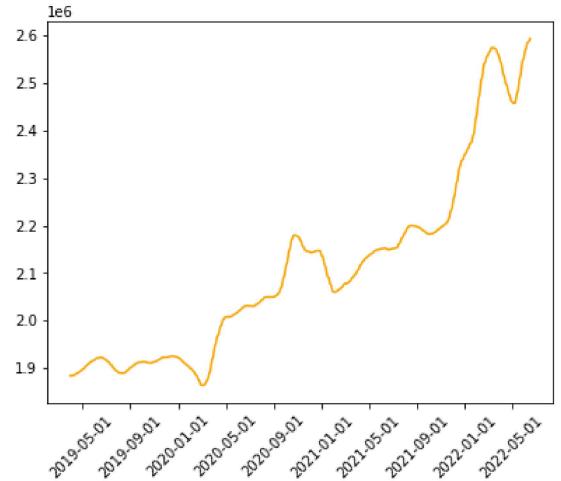
symbol: VCR
sector: error
sector: Consumer Cyclical
Index: nan
vol_30d_2yr: 2593840.625
Sector 1YMF: -369.34999084472656
1YMF: -369.34999084472656
risk trend factor: -4.1537329629948685
totalAssets
VCR 5.266340e+09

```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSD	90d_lower	90d_upper
2022-06-16	222.740005	220.387534	243.676825	266.966116	272.364761	27.808722	216.747317	327.982206

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VCR	1.29634	222.740005	2593840.625	0.187308	0.636286	0.472995

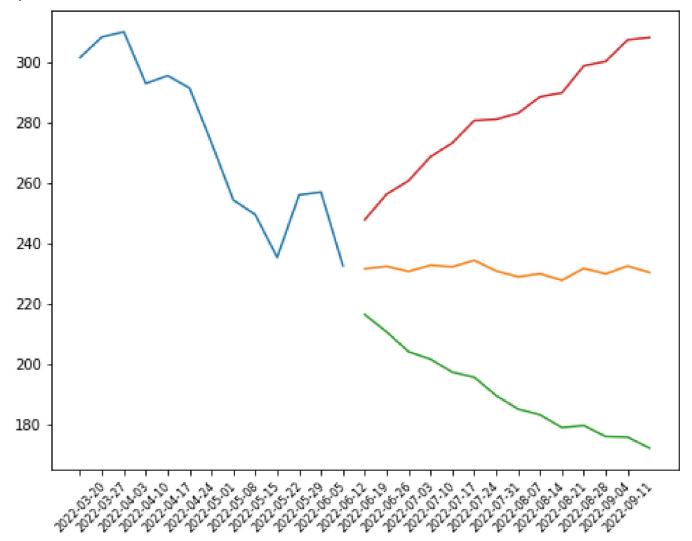
l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		



```

ets next 13 weeks
inner cv scores:
best model: ['add', 'add', True]
best inner cv score, sdev (11 folds): 952.8830367315925 971.9508949262715
test cv mean error, stdev (10 folds): 1040.9427026546284 976.6564005616518
sell date: 2022-07-24
expected return: 0.051526277571769454
discounted return: 0.0013588333625320637
quarter return: 1.1330666546262926

```



```

['options', ('2022-06-17',)]
symbol: VGT
sector: error
sector: Technology
Index: nan
vol_30d_2yr: 14315855.2734375
Sector 1YMF: -374.97998046875
1YMF: -374.97998046875
risk trend factor: -4.4188079801718425
    totalAssets
VGT 5.044675e+10

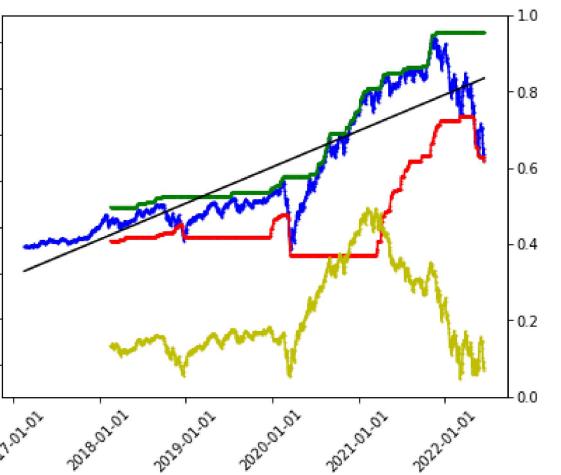
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	315.970001	316.754058	346.341429	375.9288	373.130002	29.399875	314.330253	431.929751

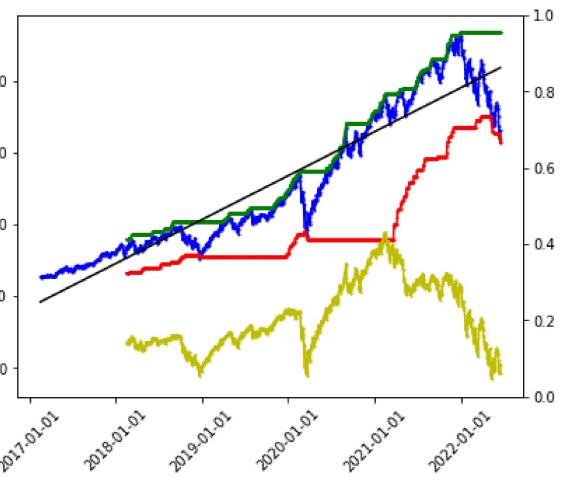
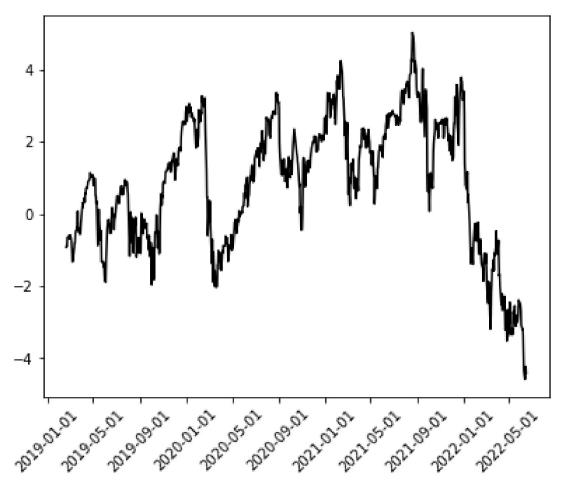
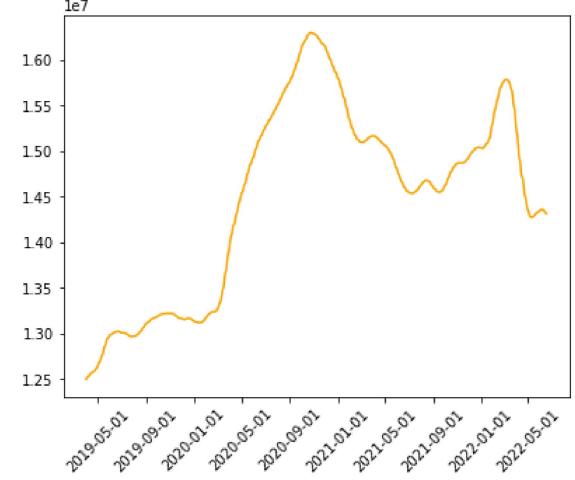
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
--	---------------	----------	-------------	---------	-----	-------

VGT	1.137257	315.970001	14315855.273438	0.243036	0.683578	0.429242
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AnalyzeSP1500



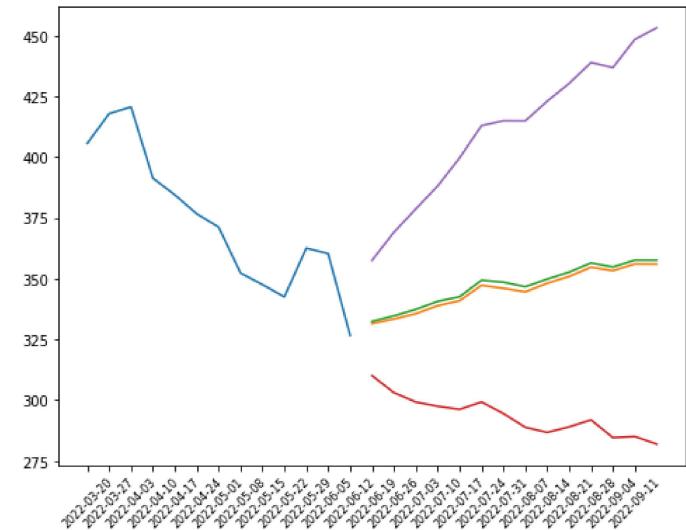
l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		



```

ets next 13 weeks
inner cv scores:
best model: ['mul', 'add', False]
best inner cv score, sdev (11 folds): 1107.692443241078 925.5522391639219
test cv mean error, stdev (10 folds): 1169.731103675255 948.6704684477432
sell date: 2022-09-11
expected return: 0.12687167601232358
discounted return: 0.0013898645634560225
quarter return: 1.136301582712567

```



```
['options', ('2022-06-17', '2022-08-19')]
```

```

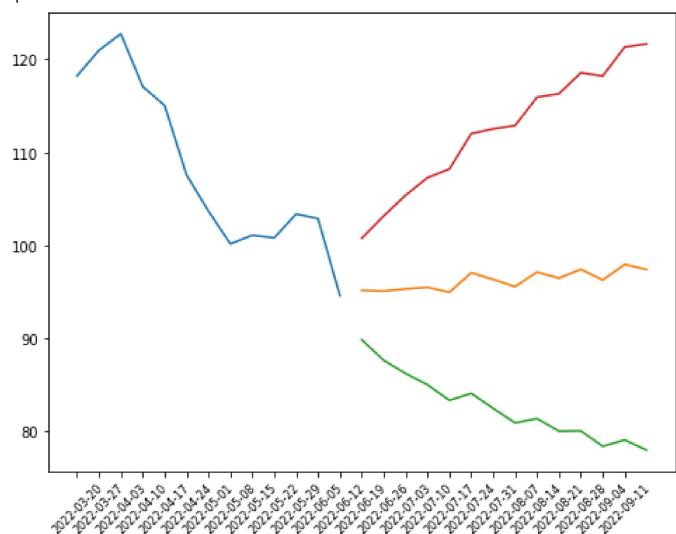
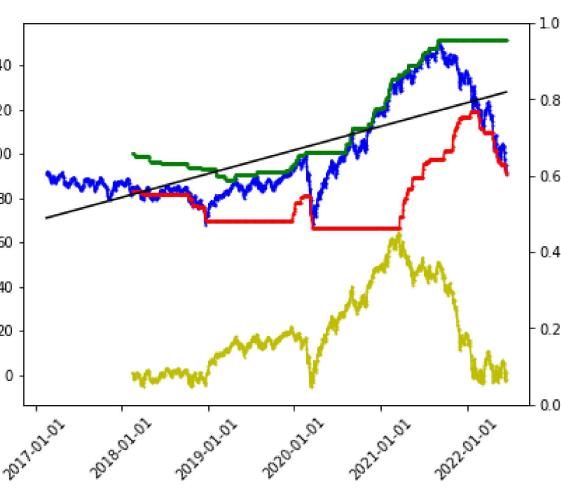
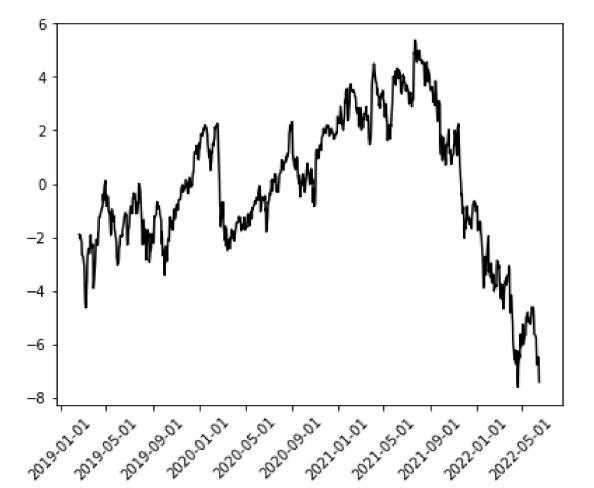
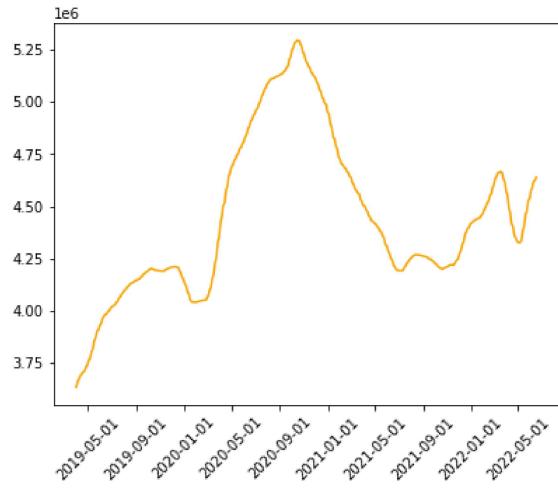
symbol: VOX
sector: error
sector: Communication Services
Index: nan
vol_30d_2yr: 4638787.3046875
Sector 1YMF: -170.42001342773438
1YMF: -170.42001342773438
risk trend factor: -7.422474748397777
Empty DataFrame
Columns: []
Index: [VOX]

```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	91.389999	92.452696	99.803968	107.15524	107.854286	9.210231	89.433824	126.274748

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VOX	1.812392	91.389999	4638787.304688	0.036059	0.712116	0.512455

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		



['options', ('2022-07-15',)]

symbol: ACC

sector: error

sector: error

Index: SP400

vol_30d_2yr: 26979850.78125

Sector 1MFE: 13.050003051757812

1YMF: 13.050003051757812

risk trend factor: 10.609762527253386

Empty Dataframe

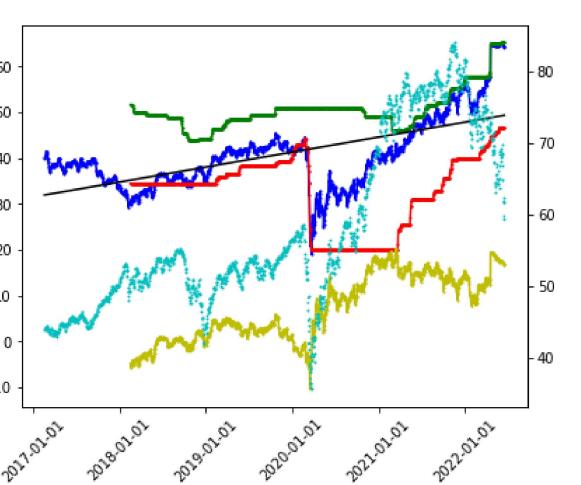
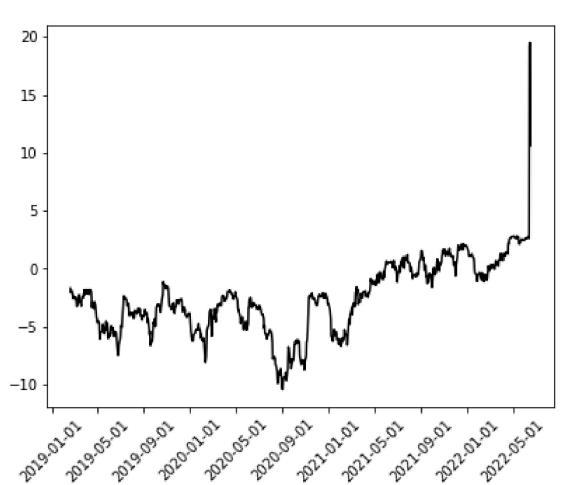
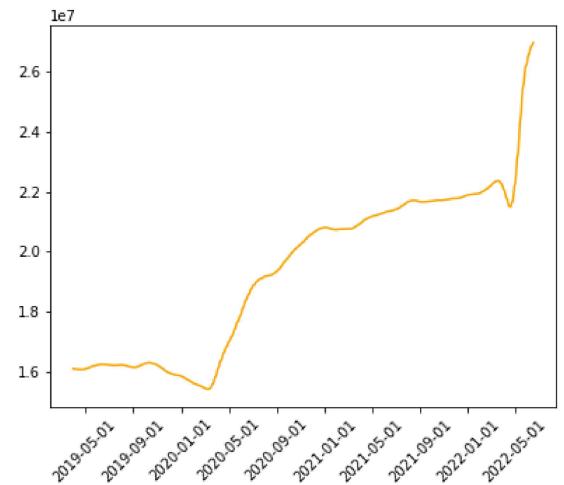
Columns: []

Index: [ACC]

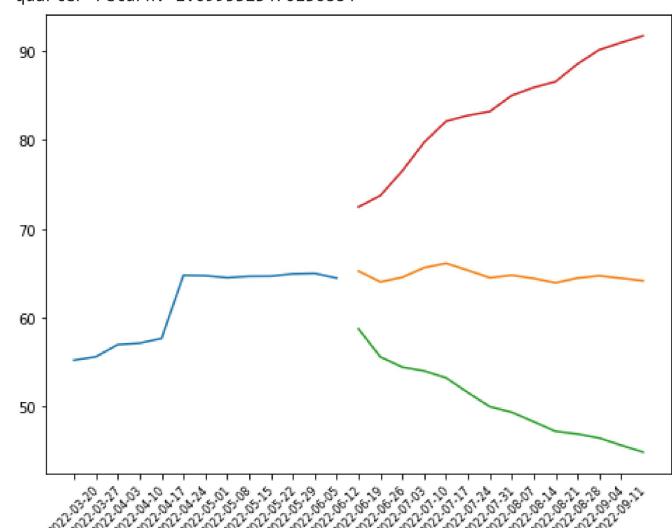
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	64.099998	64.286211	64.725873	65.165535	61.940476	3.999624	53.941228	69.939724
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst		
ACC	2.234901	64.099998	26979850.78125	0.967203	0.977604	0.419621		

l axis		r axis	
legend		legend	
blue	symbol		
green	trailing_1yr_max	magenta	sector
red	trailing_1yr_min		
orange	30d_vol_2yr	cyan	index
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

Index 1YMF: -70.88999938964844
Index Volume Factor: 0.5662453634524328
Index Risk Trend Factor: -4.411325496943257



```
ets next 13 weeks
inner cv scores:
best model: ['add', 'add', True]
best inner cv score, sdev (11 folds): 17.38153804293795 12.102196457408603
test cv mean error, stdev (10 folds): 18.103170393774633 12.465199304426951
sell date: 2022-07-17
expected return: 0.031424384685890684
discounted return: 0.0010318901884582843
quarter return: 1.0995323479136884
```



6/17/22, 10:15 AM

AnalyzeSP1500

```
[‘options’, (‘2022-06-17’)]
symbol: MTOR
sector: error
sector: error
Index: SP600
vol_30d_2yr: 15439291.9921875
Sector 1YMF: 2.279998779296875
1YMF: 2.279998779296875
risk trend factor: 4.956528950292737
Empty DataFrame
Columns: []
Index: [MTOR]
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	35.91	35.940106	36.098412	36.256718	35.878095	0.246654	35.384787	36.371403

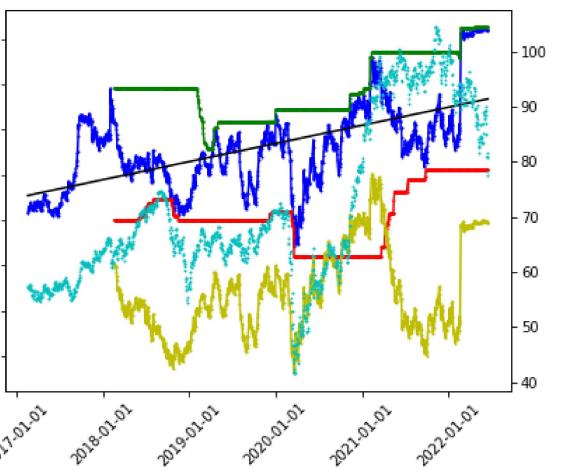
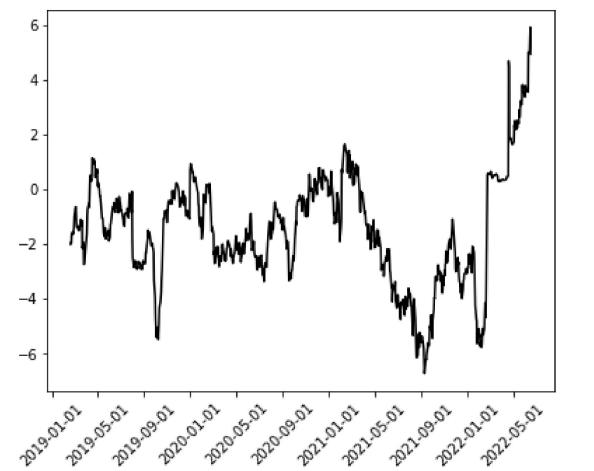
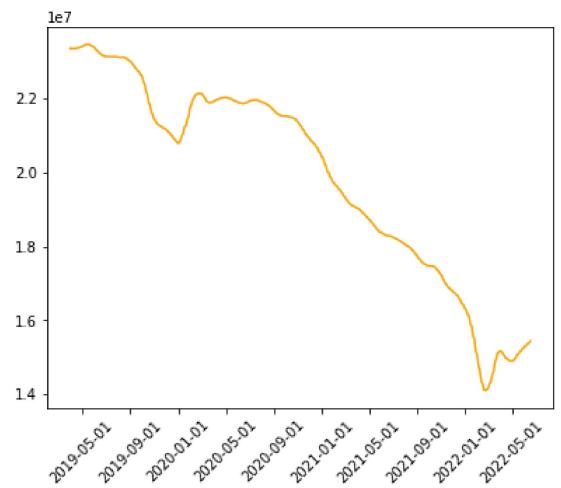
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
MTOR	1.642038	35.91	15439291.992188	0.978501	0.29595	0.43549

I axis r axis

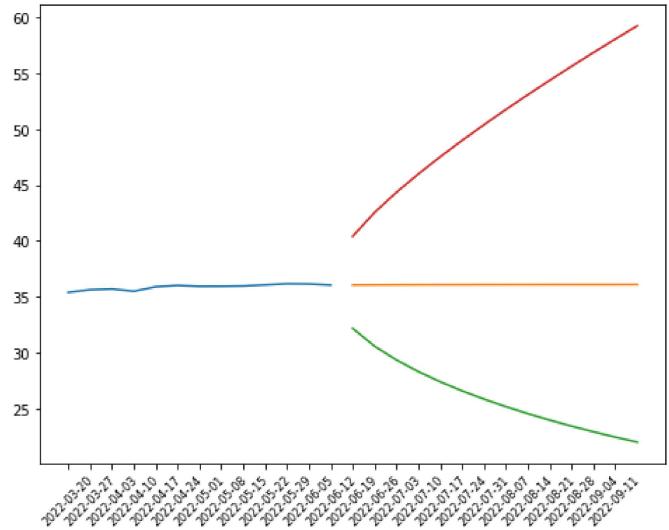
legend legend

blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

Index 1YMF: -79.04000854492188
Index Volume Factor: 1.243664249470528
Index Risk Trend Factor: -4.590013818867828



```
ets next 13 weeks
inner cv scores:
best model: [None, ‘add’, True]
best inner cv score, sdev (11 folds): 16.12034837148428 9.392302279151806
test cv mean error, stdev (10 folds): 15.624875348370711 9.712693915607272
sell date: 2022-09-18
expected return: 0.0050908158241922035
discounted return: 5.4602581340157386e-05
quarter return: 1.0050359382676266
```



['options', ('2022-08-19',)]

symbol: TVTY

sector: error

sector: error

Index: SP600

vol_30d_2yr: 10912294.921875

Sector 1YMF: 2.649995803833008

1YMF: 2.649995803833008

risk trend factor: 2.2649498384462143

Empty DataFrame

Columns: []

Index: [TVTY]

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
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2022-06-16	32.099998	31.873617	32.188889	32.504161	31.814762	0.890507	30.033748	33.595776
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volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
---------------	----------	-------------	---------	-----	-------

TVTY	1.652237	32.099998	10912294.921875	0.965198	0.517984	0.449082
------	----------	-----------	-----------------	----------	----------	----------

l axis		r axis	
		legend	legend

blue	symbol	magenta	sector
------	--------	---------	--------

green	trailing_1yr_max	cyan	index
-------	------------------	------	-------

red	trailing_1yr_min		
-----	------------------	--	--

orange	30d_vol_2yr		
--------	-------------	--	--

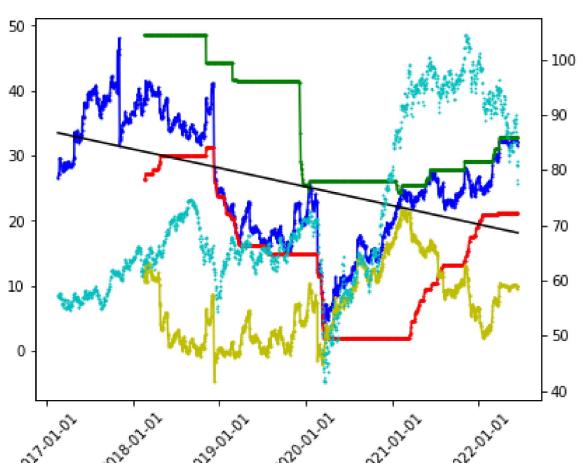
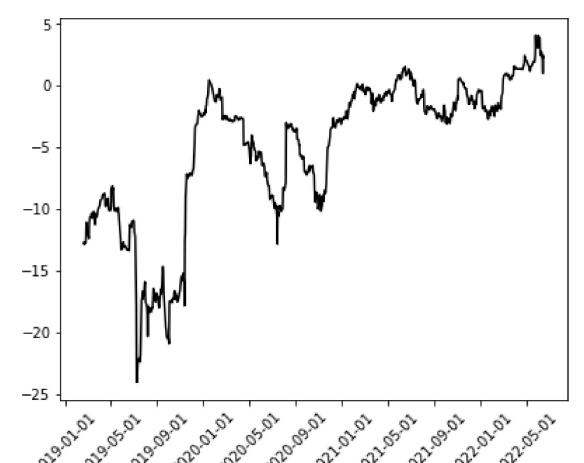
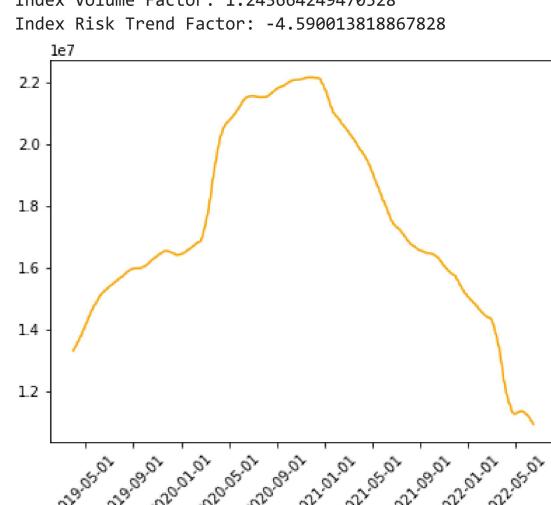
black	risk_trend_factor/linear		
-------	--------------------------	--	--

yellow	supply_trend_1yr		
--------	------------------	--	--

Index 1YMF: -79.04000854492188

Index Volume Factor: 1.243664249470528

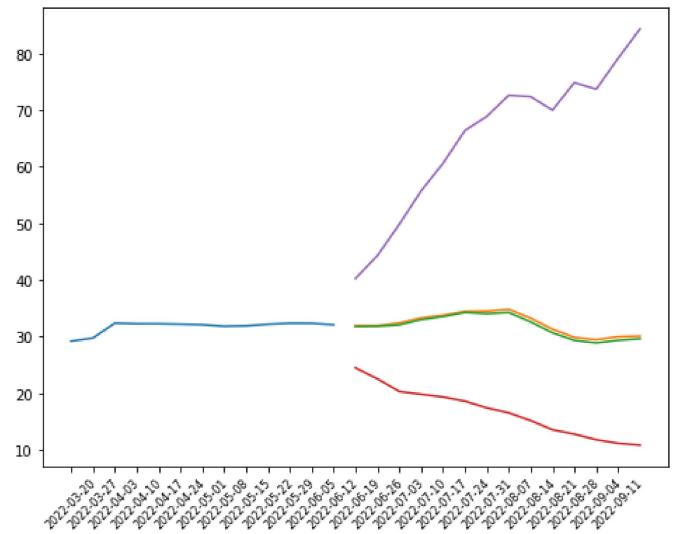
Index Risk Trend Factor: -4.590013818867828



```

ets next 13 weeks
inner cv scores:
best model: ['mul', 'add', True]
best inner cv score, sdev (11 folds): 23.87776531489791 20.845468653787997
test cv mean error, stdev (10 folds): 25.77847821237447 20.934352374272137
sell date: 2022-08-07
expected return: 0.08489415900400657
discounted return: 0.001598971757586165
quarter return: 1.1583399681425293

```



```

['options', ('2022-08-19',)]
symbol: Y
sector: Financial Services
Index: SP400
vol_30d_2yr: 1621906.25
Sector 1YMF: 27.8099365234375
1YMF: 27.8099365234375
risk trend factor: 2.01229535346933
    beta currentRatio debtToEquity earningsGrowth      ebitda \
Y  0.663839       1.597      31.5     -0.433  1620000000
    ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
Y  0.13423   9.936376   90016496    0.44211  5101669000
    heldPercentInstitutions           industry      marketCap \
Y          0.86723 Insurance=Property & Casualty  11220848640
    operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
Y  1928840960       0.11935        0     0.15  1.305451
    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
Y          0.929715       0.0771      1.004     0.02938
    returnOnEquity revenueGrowth revenuePerShare      sector \
Y  0.11868       0.025      878.577 Financial Services
    sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
Y  13454900       2.32  2298860032    170.857  2822777088
    totalRevenue trailingPE
Y  12069126144  12.311554

```

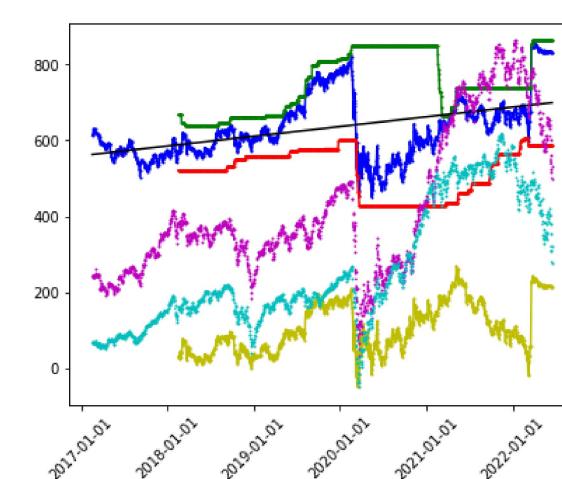
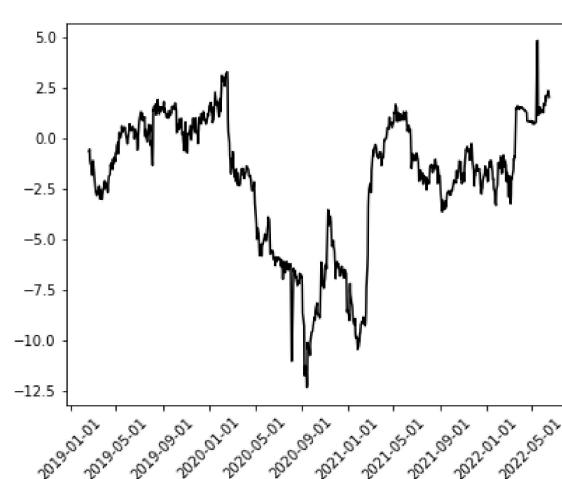
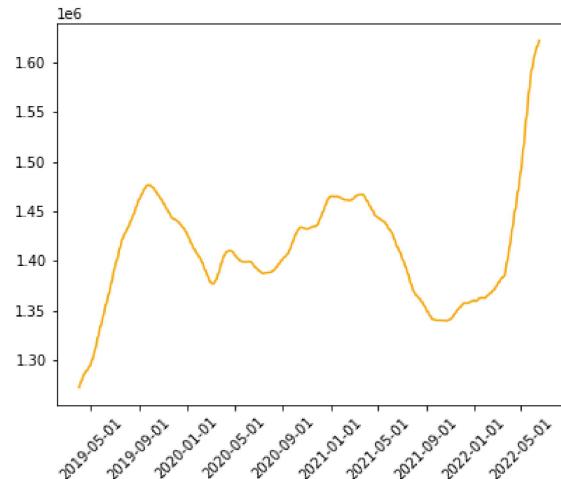
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDDev	90d_lower	90d_upper
2022-06-16	830.47998	830.934284	833.322221	835.710158	836.172855	21.70534	792.762175	879.583536

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
Y	1.558413	830.47998	1621906.25	0.919486	0.382778	0.459301

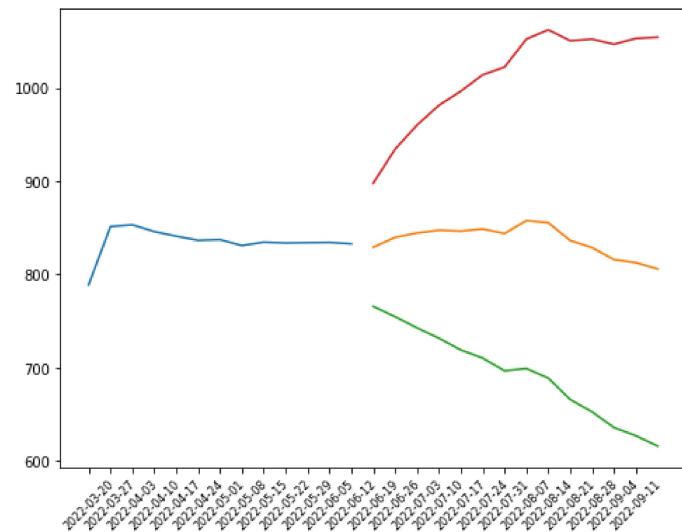
l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

6/17/22, 10:15 AM

Sector 1YMF: -73.55999755859375
Sector Volume Factor: 1.2176833027526361
Sector Risk Trend Factor: -3.976216084248311
Index 1YMF: -70.88999938964844
Index Volume Factor: 0.5662453634524328
Index Risk Trend Factor: -4.411325496943257



ets next 13 weeks
inner cv scores:
best model: ['add', None]
best inner cv score, sdev (11 folds): 6246.773868881035 9811.844809032544
test cv mean error, stdev (10 folds): 6730.508643828475 10164.918844992177
sell date: 2022-08-07
expected return: 0.03259007271089594
discounted return: 0.0006290267650088666
quarter return: 1.0595584544910155



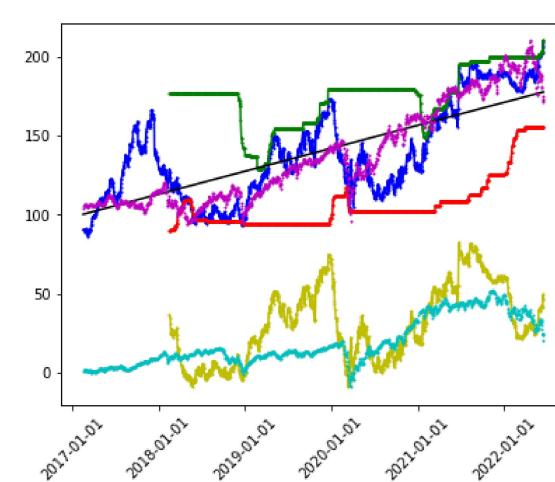
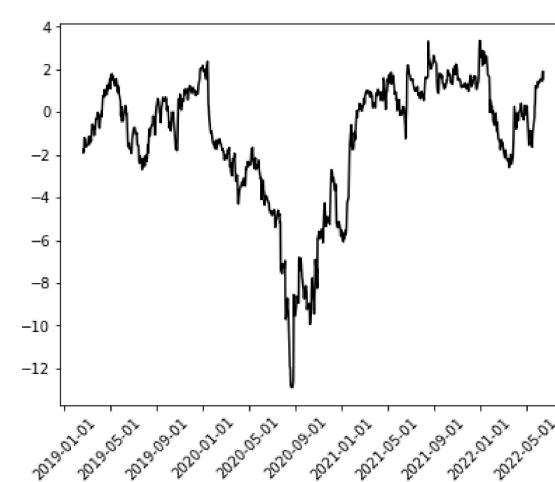
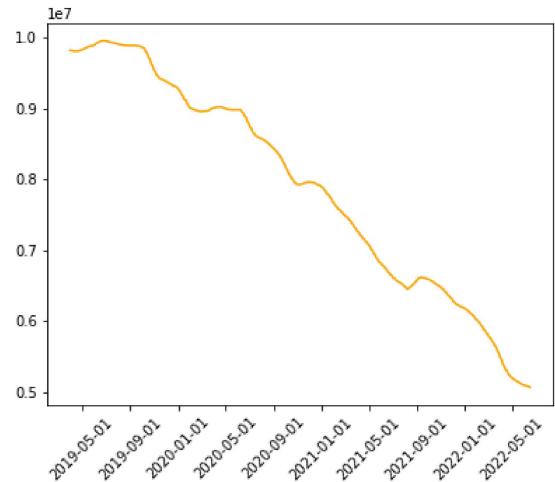
```
[{'options': ('2022-07-15',)},  
 ['sustainability',  
  2022-5  
  palmOil      False  
  controversialWeapons  False  
  gambling      False  
  socialScore    8.71  
  nuclear       False  
  furLeather    False  
  alcoholic     False  
  gmo           False  
  catholic      False  
  socialPercentile  None  
  peerCount     96  
  governanceScore 11.77  
  environmentPercentile  None  
  animalTesting  False  
  tobacco        False  
  totalEsg      21.71  
  highestControversy  1  
  esgPerformance AVG_PERF  
  coal          False  
  pesticides    False  
  adult         False  
  percentile    30.32  
  peerGroup     Insurance  
  smallArms     False  
  environmentScore 1.23  
  governancePercentile  None  
  militaryContract False]  
symbol: SAFM  
sector: Consumer Defensive  
Index: SP400  
vol_30d_2yr: 5064230.46875  
Sector 1YMF: 41.8699951171875  
1YMF: 41.8699951171875  
risk trend factor: 1.5455888068402643  
  beta currentRatio debtToEquity dividendRate dividendYield \  
SAFM 0.640199      5.529      0.877      1.76      0.0084  
  
  earningsGrowth   ebitda ebitdaMargins forwardPE freeCashflow \  
SAFM 2.316 1342139008 0.23866 6.792161 669912512  
  
  grossMargins grossProfits heldPercentInstitutions industry \  
SAFM 0.25714 907758000 0.8102 Packaged Foods  
  
  marketCap operatingCashflow operatingMargins payoutRatio pegRatio \  
SAFM 4636001280 954787008 0.20787 0.0455 -0.48  
  
  priceToBook priceToSalesTrailing12Months profitMargins quickRatio \  
SAFM 1.965947 0.824382 0.15341 3.785  
  
  returnOnAssets returnOnEquity revenueGrowth revenuePerShare \  
SAFM 0.30256 0.44602 0.358 255.051  
  
  sector sharesOutstanding shortRatio totalCash \  
SAFM Consumer Defensive 22320200 4.01 829123968  
  
  totalCashPerShare totalDebt totalRevenue trailingPE  
SAFM 37.147 20690000 5623608832 5.374258  
  
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSD 90d_lower 90d_upper  
2022-06-16 206.449997 185.297076 198.254762 211.212449 190.815873 7.379416 176.057041 205.574705
```

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
SAFM	1.287362	206.449997	5064230.46875	0.962912	0.651375	0.476748

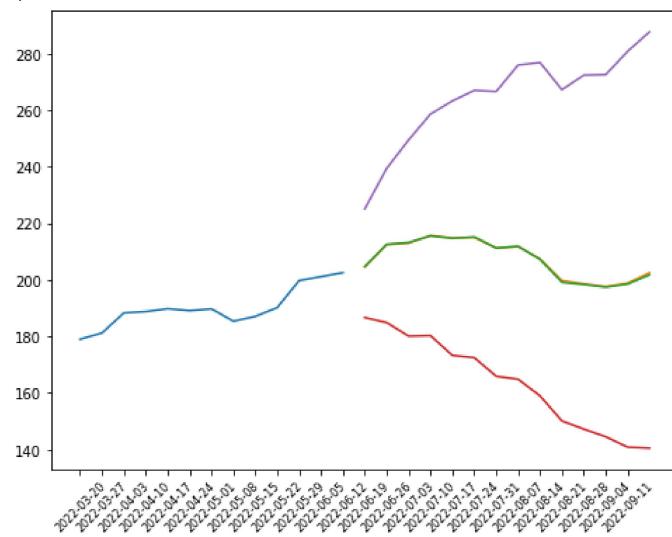
I axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

6/17/22, 10:15 AM

Sector 1YMF: -69.8699951171875
Sector Volume Factor: 1.4804916728676867
Sector Risk Trend Factor: -2.02874535900685
Index 1YMF: -70.88999938964844
Index Volume Factor: 0.5662453634524328
Index Risk Trend Factor: -4.411325496943257



ets next 13 weeks
inner cv scores:
best model: ['mul', 'mul', True]
best inner cv score, sdev (11 folds): 341.4043344769378 451.53600389174676
test cv mean error, stdev (10 folds): 369.6812742680705 464.19593120201364
sell date: 2022-07-10
expected return: 0.0447918232238952
discounted return: 0.0019069312480921585
quarter return: 1.1915686274019364



['options', ('2022-08-19', '2022-12-16')]
symbol: BANF
sector: Financial Services
Index: SP600
vol_30d_2yr: 2480129.6875
Sector 1YMF: 25.399993896484375
1YMF: 25.399993896484375
risk trend factor: 1.5227813808014614
beta dividendRate dividendYield earningsGrowth ebitdaMargins \\\nBANF 1.261764 1.44 0.0176 -0.15 0

BANF 25.541208 0 489579000 0.46682

BANF Banks-Regional 3028237568 0.43254 0.2934 2.57

BANF 2.640443 6.197036 0.32952 -0.008

BANF 14.947 Financial Services 32572200 6.33

BANF 2059768064 62.941 99100000 488659008 18.819838

AnalyzeSP1500

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	91.559998	80.113243	89.27873	98.444217	85.368096	4.066924	77.234248	93.501943

	volume_factor	latest_p	vol_30d_2yr	pct.2yr	adf	hurst
BANF	1.077928	91.559998	2480129.6875	0.912771	0.918694	0.536414

l axis r axis

legend

blue	symbol
green	trailing_1yr_max
red	trailing_1yr_min
orange	30d_vol_2yr
black	risk_trend_factor/linear
yellow	supply_trend_1yr

Sector

1YMF:

-73.55999755859375

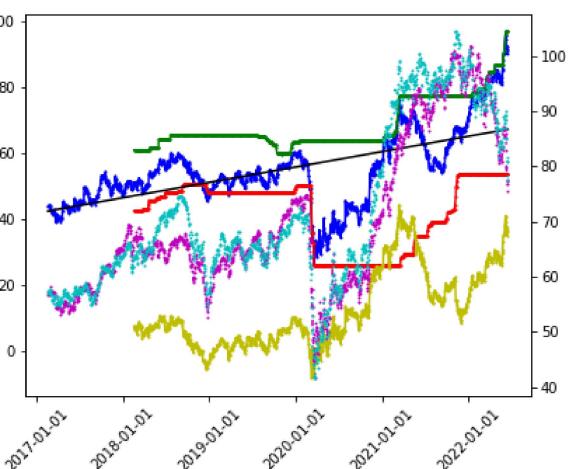
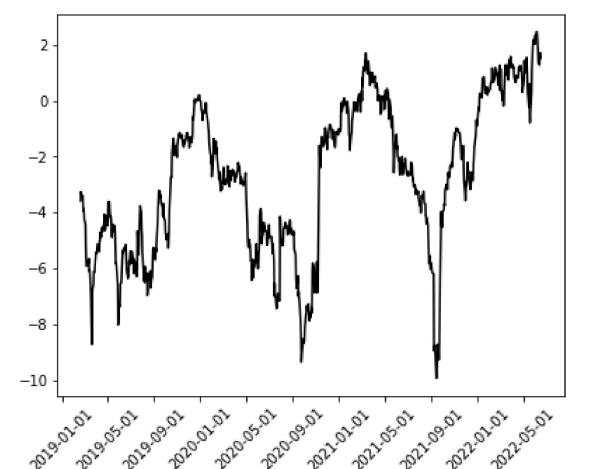
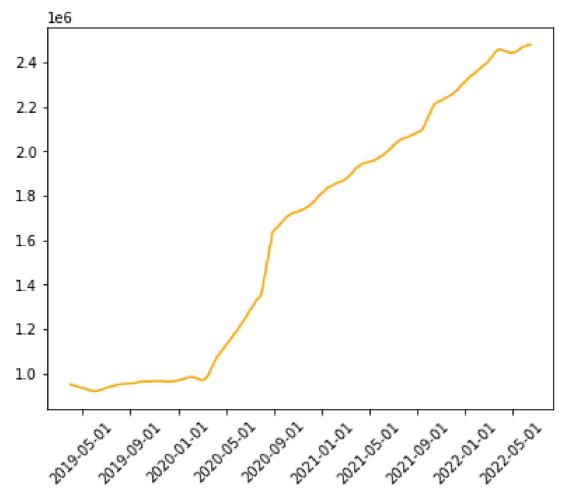
Sector Volume Factor: 1.2176833027526361

Sector Risk Trend Factor: -3.976216084248311

Index 1YMF: -79.04000854492188

Index Volume Factor: 1.243664249470528

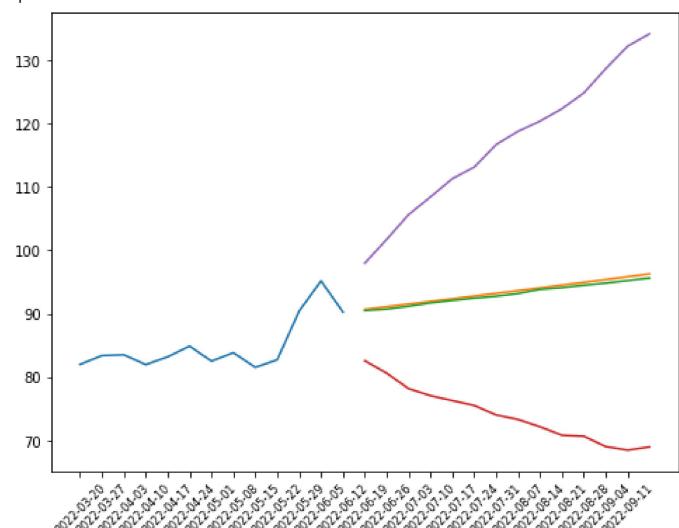
Index Risk Trend Factor: -4.590013818867828



```

ets next 13 weeks
inner cv scores:
best model: [None, 'mul', False]
best inner cv score, sdev (11 folds): 57.43070909139858 34.23390711310378
test cv mean error, stdev (10 folds): 60.476525300086834 34.454503767797306
sell date: 2022-09-18
expected return: 0.05141243020409907
discounted return: 0.0005392252421581034
quarter return: 1.050845787629788

```



```
[{'quarterly_balance_sheet', 2022-03-31 2021-12-31 2021-09-30 \
Total Stockholder Equity 1.171734e+09 1.171734e+09 1.146874e+09
Net Tangible Assets 1.004246e+09 1.004246e+09 9.786270e+08
Intangible Assets NaN 1.756600e+07 1.832500e+07
Capital Surplus NaN 1.599140e+08 1.588770e+08
Total Liab NaN 8.233878e+09 1.015590e+10
Total Assets NaN 9.405612e+09 1.130277e+10
Common Stock NaN 3.260300e+07 3.257200e+07
Other Current Assets NaN 4.577600e+07 4.215000e+07
Retained Earnings NaN 9.770670e+08 9.505600e+08
Good Will NaN 1.499220e+08 1.499220e+08
Treasury Stock NaN 2.150000e+06 4.865000e+06
Other Assets NaN 6.238580e+09 6.128204e+09
Cash NaN 2.050822e+09 4.110866e+09
Total Current Liabilities NaN 8.144420e+09 1.006686e+10
Deferred Long Term Asset Charges NaN 1.172000e+06 NaN
Other Stockholder Equity NaN 2.150000e+06 4.865000e+06
Property Plant Equipment NaN 2.740470e+08 2.716000e+08
Total Current Assets NaN 2.145097e+09 4.192076e+09
Long Term Investments NaN 5.864000e+08 5.425840e+08
Long Term Debt NaN 8.598700e+07 8.597300e+07
Inventory NaN 3.955300e+07 3.906000e+07
Accounts Payable NaN 8.091914e+09 9.992044e+09

2021-06-30
Total Stockholder Equity 1.131591e+09
Net Tangible Assets 9.623860e+08
Intangible Assets 1.928300e+07
Capital Surplus 1.583220e+08
Total Liab 9.883696e+09
Total Assets 1.101529e+10
Common Stock 3.278500e+07
Other Current Assets 3.893200e+07
Retained Earnings 9.350670e+08
Good Will 1.499220e+08
Treasury Stock 5.417000e+06
Other Assets 6.280314e+09
Cash 3.641398e+09
Total Current Liabilities 9.794790e+09
Deferred Long Term Asset Charges NaN
Other Stockholder Equity 5.417000e+06
Property Plant Equipment 2.710840e+08
Total Current Assets 3.720513e+09
Long Term Investments 5.741710e+08
Long Term Debt 8.595900e+07
Inventory 4.018300e+07
Accounts Payable 9.728389e+09 ]]

['quarterly_cashflow', 2022-03-31 2021-12-31 \
Net Income 35915000.0 3.816800e+07
Change To Liabilities 0.0 0.000000e+00
Investments NaN -9.512000e+06
Total Cashflows From Investing Activities NaN -1.741920e+08
Net Borrowings NaN -3.500000e+06
Total Cash From Financing Activities NaN -1.914817e+09
Change To Operating Activities NaN -6.860000e+05
Issuance Of Stock NaN 5.390000e+05
Change In Cash NaN -2.060844e+09
Total Cash From Operating Activities NaN 2.816500e+07
Depreciation NaN 5.467000e+06
Other Cashflows From Investing Activities NaN -1.298000e+06
Dividends Paid NaN -1.172600e+07
Other Cashflows From Financing Activities NaN -1.900130e+09
Change To Netincome NaN -1.510400e+07
Capital Expenditures NaN -6.392000e+06
Repurchase Of Stock NaN NaN

2021-09-30 2021-06-30
Net Income 38750000.0 48192000.0
Change To Liabilities 0.0 0.0
Investments 32390000.0 -10869000.0
Total Cashflows From Investing Activities 200772000.0 365288000.0
Net Borrowings 40000.0 5850000.0
Total Cash From Financing Activities 241240000.0 147905000.0
Change To Operating Activities 399000.0 -1000.0
Issuance Of Stock 539000.0 413000.0
Change In Cash 469468000.0 578990000.0
Total Cash From Operating Activities 27456000.0 65797000.0
Depreciation 4962000.0 4942000.0
Other Cashflows From Investing Activities 828000.0 14923000.0
Dividends Paid -11147000.0 -11142000.0
Other Cashflows From Financing Activities 263651000.0 100134000.0
Change To Netincome -18501000.0 108851000.0
Capital Expenditures -5659000.0 -7482000.0
Repurchase Of Stock -11664000.0 -11664000.0 ]]

['quarterly_earnings', Revenue Earnings
Quarter
```

```

Q22021 132130000 48192000
3Q2021 118493000 38750000
4Q2021 121815000 38168000
1Q2022 116221000 35915000]
['quarterly_financials',
Research Development None None None
Effect Of Accounting Charges None None None
Income Before Tax 43709000.0 45034000.0 48279000.0
Minority Interest None None None
Net Income 35915000.0 38168000.0 38750000.0
Selling General Administrative 56988000.0 55859000.0 55090000.0
Gross Profit 116221000.0 121815000.0 118493000.0
Ebit 0.0 0.0 0.0
Operating Income 47462000.0 49173000.0 51690000.0
Other Operating Expenses 11771000.0 16783000.0 11713000.0
Interest Expense None None None
Extraordinary Items None None None
Non Recurring None None None
Other Items None None None
Income Tax Expense 7794000.0 6866000.0 9529000.0
Total Revenue 116221000.0 121815000.0 118493000.0
Total Operating Expenses 68759000.0 72642000.0 66803000.0
Cost Of Revenue 0.0 0.0 0.0
Total Other Income Expense Net -3753000.0 -4139000.0 -3411000.0
Discontinued Operations None None None
Net Income From Continuing Ops 35915000.0 38168000.0 38750000.0
Net Income Applicable To Common Shares 35915000.0 38168000.0 38750000.0

```

2021-06-30

```

Research Development None
Effect Of Accounting Charges None
Income Before Tax 62907000.0
Minority Interest None
Net Income 48192000.0
Selling General Administrative 53961000.0
Gross Profit 132130000.0
Ebit 0.0
Operating Income 63039000.0
Other Operating Expenses 15130000.0
Interest Expense None
Extraordinary Items None
Non Recurring None
Other Items None
Income Tax Expense 14715000.0
Total Revenue 132130000.0
Total Operating Expenses 69091000.0
Cost Of Revenue 0.0
Total Other Income Expense Net -132000.0
Discontinued Operations None
Net Income From Continuing Ops 48192000.0
Net Income Applicable To Common Shares 48192000.0 ]

```

Holder Shares Date Reported \

0	iShares Core S&P Smallcap ETF	1328625	2022-01-30
1	Virtus Equity Tr-Virtus KAR Small Cap Core Fd	471363	2021-12-30
2	Vanguard Total Stock Market Index Fund	463100	2021-12-30
3	iShares Russell 2000 ETF	408948	2022-01-30
4	Vanguard Small-Cap Index Fund	406215	2021-12-30
5	Vanguard Small Cap Value Index Fund	260062	2021-12-30
6	Vanguard Extended Market Index Fund	242508	2021-12-30
7	DFA U.S. Micro Cap Series	239834	2022-01-30
8	Schwab Strategic Tr-Schwab U.S. Dividend Equit...	221816	2022-02-27
9	SPDR (R) Ser Tr-S&P Regional Banking ETF	210949	2022-01-30

% Out	Value
0 0.0406	99580443
1 0.0144	33259373
2 0.0141	32676336
3 0.0125	30650652
4 0.0124	28662530
5 0.0079	18349974
6 0.0074	17111364
7 0.0073	17975558
8 0.0068	17330484
9 0.0064	15810627]

```

['options', ('2022-06-17',)]
symbol: PBF
sector: Energy
Index: SP600
vol_30d_2yr: 92708582.421875
Sector LYMF: 24.100000381469727
LYMF: 24.100000381469727
risk trend factor: 1.2141059059973964
    beta currentRatio debtToEquity      ebitda ebitdaMargins forwardPE \
PBF 2.259981      1.254     197.914   690400000      0.02194   12.820001

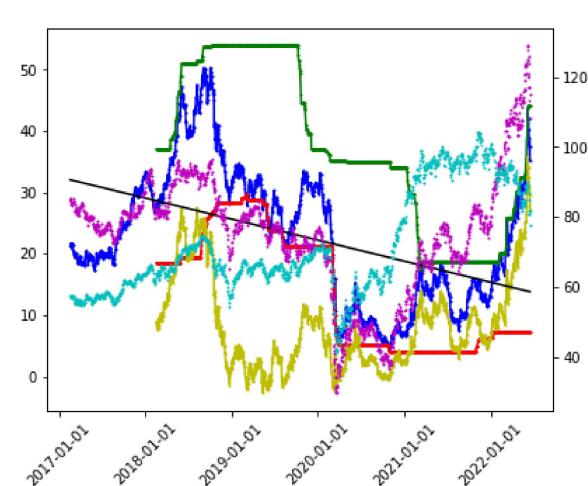
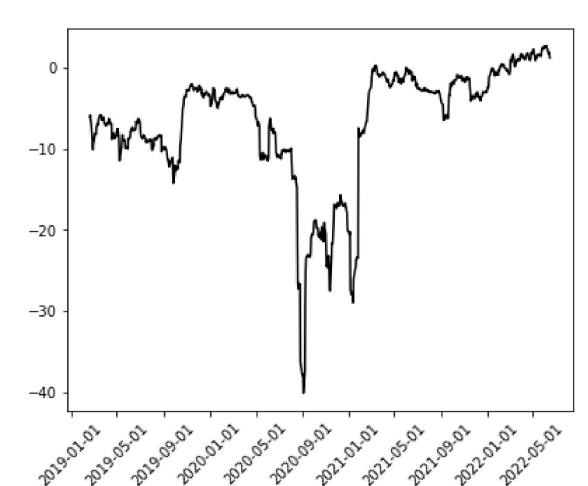
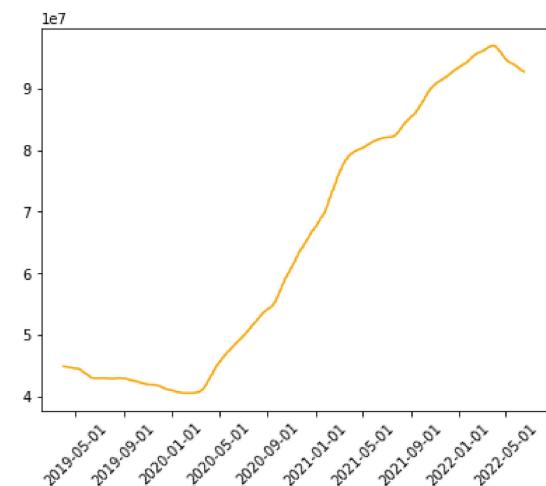
```

freeCashflow grossMargins grossProfits heldPercentInstitutions \

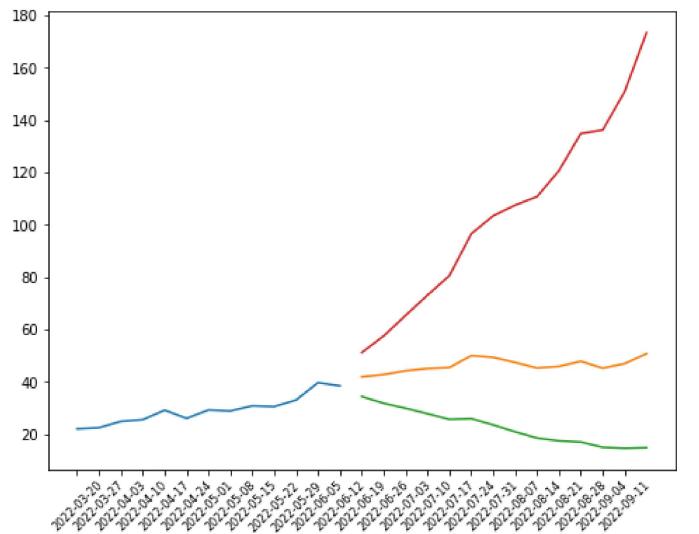
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
PBF	0.768095	35.09	92708582.421875	0.774588	0.622395

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -79.04000854492188
Index Volume Factor: 1.243664249470528
Index Risk Trend Factor: -4.590013818867828



```
ets next 13 weeks
inner cv scores:
best model: ['add', 'add', True]
best inner cv score, sdev (11 folds): 25.720877012049698 17.863936823666034
test cv mean error, stdev (10 folds): 22.973989066046546 16.371710054407494
sell date: 2022-09-18
expected return: 0.4470970920208785
discounted return: 0.003981664387167294
quarter return: 1.4413580878533077
```



['options', ('2022-06-17', '2022-07-15', '2022-12-16', '2023-01-20', '2024-01-19')]

symbol: TWI

sector: Industrials

Index: SP600

vol_30d_2yr: 10535892.7734375

Sector 1YMF: 7.760000228881836

1YMF: 7.760000228881836

risk trend factor: 1.1883614925281147

```
    beta currentRatio debtToEquity earningsGrowth   ebitda \
TWI  2.412885      1.853      219.119      0.682  163579008
```

```
    ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
TWI      0.08464     8.09589     -24455124      0.13457  227051000
```

```
    heldPercentInstitutions           industry   marketCap \
TWI      0.77816  Farm & Heavy Construction Machinery  1110906752
```

```
    operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
TWI      8171000      0.06043          0      0.38  4.470499
```

```
    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
TWI      0.574797      0.03101      0.829      0.06237
```

```
    returnOnEquity revenueGrowth revenuePerShare      sector \
TWI      0.28169      0.378      30.825  Industrials
```

```
    sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
TWI      62656900      2.29  98144000      1.566  538417984
```

```
    totalRevenue trailingPE
TWI  1932694016  18.801697
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	18.08	16.262576	18.084127	19.905678	15.902698	1.926426	12.049847	19.75555

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
TWI	1.294157	18.08	10535892.773438	0.906939	0.834351	0.500331

l axis r axis

legend legend

blue symbol

magenta sector

green trailing_1yr_max

cyan index

red trailing_1yr_min

orange 30d_vol_2yr

black risk_trend_factor/linear

yellow supply_trend_1yr

Sector 1YMF: -141.6699981689453

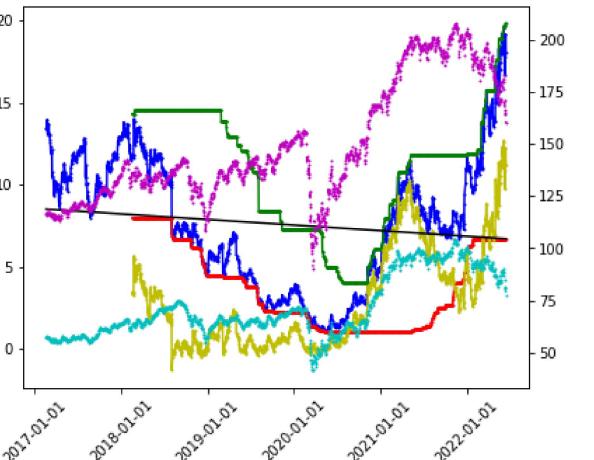
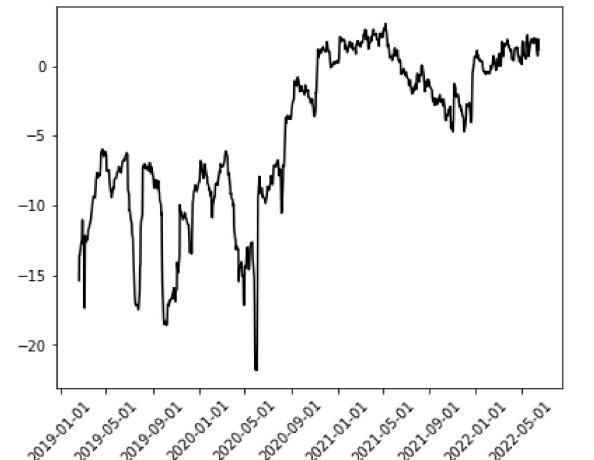
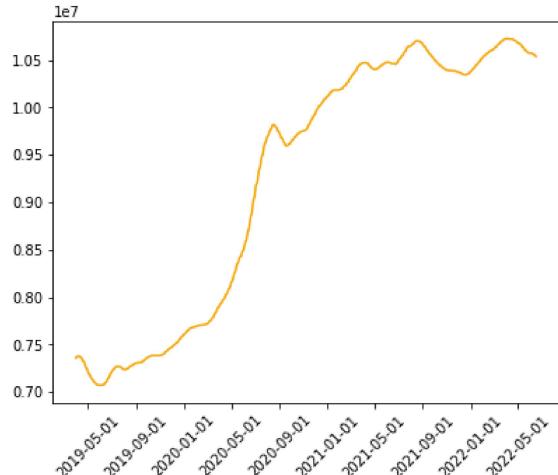
Sector Volume Factor: 0.8731518814579678

Sector Risk Trend Factor: -4.0477142333984375

Index 1YMF: -79.04000854492188

Index Volume Factor: 1.243664249470528

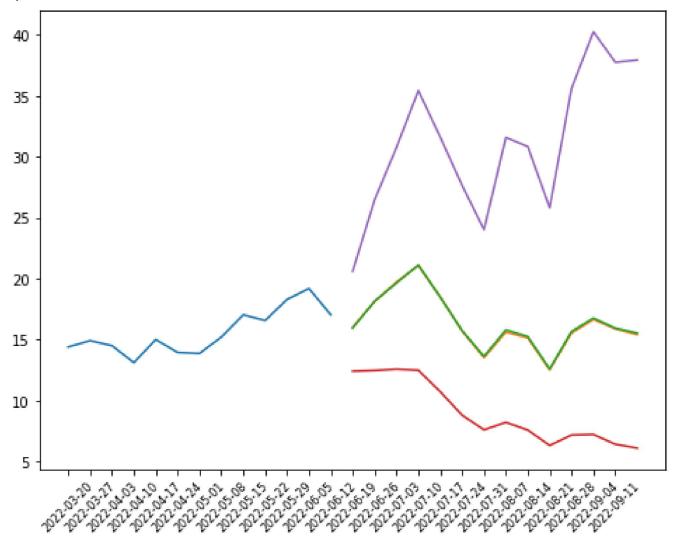
Index Risk Trend Factor: -4.590013818867828



```

ets next 13 weeks
inner cv scores:
best model: ['mul', None]
best inner cv score, sdev (11 folds): 4.563758803723551 7.424541486283341
test cv mean error, stdev (10 folds): 5.008942337795256 7.64566181594025
sell date: 2022-07-10
expected return: 0.1656193565138642
discounted return: 0.006685403958885949
quarter return: 1.8459800501751473

```



```

['options', ('2022-07-15',)]
symbol: CEIX
sector: Energy
Index: SP600
vol_30d_2yr: 10281161.1328125
Sector 1YMF: 22.600006103515625
1YMF: 22.600006103515625
risk trend factor: 1.1035159476887273
    beta currentRatio debtToEquity earningsGrowth      ebitda \
CEIX  2.379059        0.868     100.167       5.642  282313984

```

```

      ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
CEIX      0.22235   9.169261   196007120     0.33279   422536000

```

```

      heldPercentInstitutions      industry marketCap operatingCashflow \
CEIX      0.86884   Thermal Coal  1625051904      305568992

```

```

      operatingMargins payoutRatio priceToBook priceToSalesTrailing12Months \
CEIX      0.04547         0    3.353494      1.279876

```

```

      profitMargins quickRatio returnOnAssets returnOnEquity revenueGrowth \
CEIX      0.02686       0.586     0.01416      0.05563      0.249

```

```

      revenuePerShare sector sharesOutstanding shortRatio totalCash \
CEIX      36.905   Energy      34480200       1.85  149912992

```

```

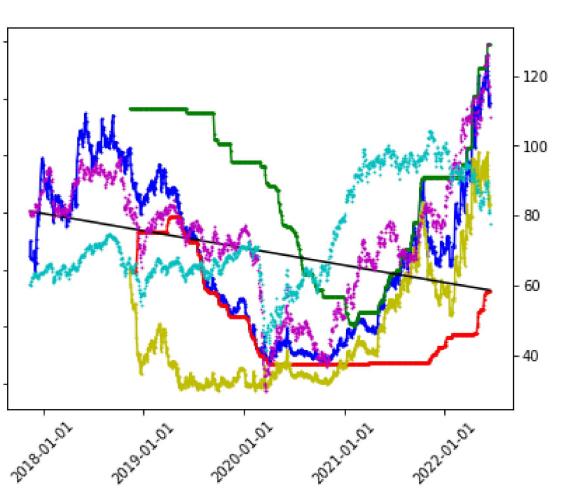
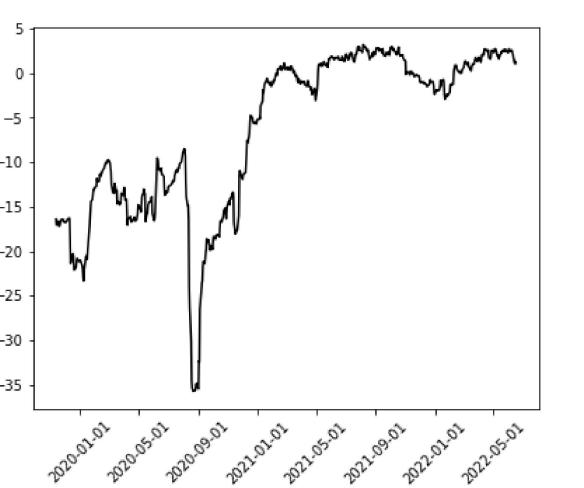
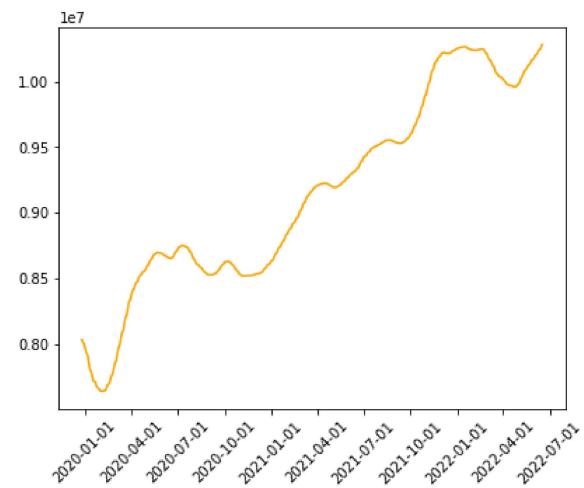
      totalCashPerShare totalDebt totalRevenue
CEIX      4.348  673937984  1269694976

```

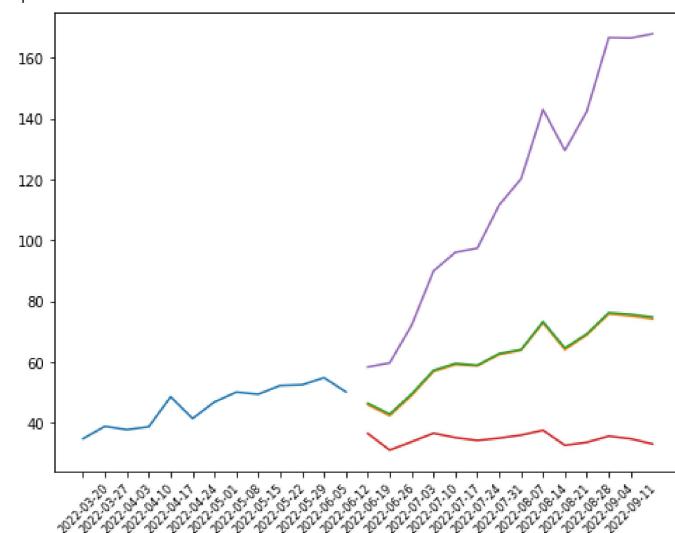
	Adj Close	21dBOLD	21dDMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	49.060001	48.004985	52.513302	57.021619	46.495238	6.61632	33.262598	59.727878
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst		
CEIX	1.464659	49.060001	10281161.132812	0.814788	0.891799	0.522582		

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -79.04000854492188
Index Volume Factor: 1.243664249470528
Index Risk Trend Factor: -4.590013818867828



```
ets next 13 weeks
inner cv scores:
best model: ['mul', 'add', False]
best inner cv score, sdev (11 folds): 36.97631528473198 64.10181216623809
test cv mean error, stdev (10 folds): 36.97631528473198 64.10181216623809
sell date: 2022-09-04
expected return: 0.5429120382517398
discounted return: 0.005504608466211591
quarter return: 1.6570439136742172
```



```
[{'quarterly_balance_sheet', 2021-12-31 2021-09-30 2021-06-30 \
    Capital Surplus 6.469450e+08 6.449200e+08 6.430330e+08
    Total Liab 1.900704e+09 2.105167e+09 1.965198e+09
    Total Stockholder Equity 6.728130e+08 4.845800e+08 5.927330e+08
    Other Current Liab 1.790310e+08 2.688430e+08 1.451780e+08
    Total Assets 2.573517e+09 2.589747e+09 2.557931e+09
    Common Stock 3.450000e+05 3.450000e+05 3.450000e+05
    Other Current Assets 3.747200e+07 4.242800e+07 3.166900e+07
    Retained Earnings 2.809600e+08 1.636370e+08 2.774260e+08
    Other Liab 8.455480e+08 9.379920e+08 9.285180e+08
    Treasury Stock -2.554370e+08 -3.243220e+08 -3.280710e+08
    Other Assets 5.153480e+08 5.008660e+08 4.742010e+08
    Cash 1.499130e+08 1.619810e+08 1.466670e+08
    Total Current Liabilities 4.452320e+08 5.156760e+08 3.702570e+08
    Deferred Long Term Asset Charges 5.701100e+07 1.113720e+08 6.965600e+07
    Short Long Term Debt 3.658900e+07 2.765100e+07 3.139500e+07
    Other Stockholder Equity -2.554370e+08 -3.243220e+08 -3.280710e+08
    Property Plant Equipment 1.671829e+09 1.704640e+09 1.711778e+09
    Total Current Assets 3.863400e+08 3.842410e+08 3.719520e+08
    Net Tangible Assets 6.728130e+08 4.845800e+08 5.927330e+08
    Net Receivables 1.108630e+08 9.881800e+07 1.153080e+08
    Long Term Debt 5.680520e+08 5.976970e+08 6.093260e+08
    Inventory 6.287600e+07 5.601500e+07 5.929900e+07
    Accounts Payable 8.034300e+07 7.839200e+07 6.807300e+07

    2021-03-31
    Capital Surplus 6.420540e+08
    Total Liab 1.937495e+09
    Total Stockholder Equity 5.830650e+08
    Other Current Liab 1.260430e+08
    Total Assets 2.520560e+09
    Common Stock 3.440000e+05
    Other Current Assets 3.030000e+05
    Retained Earnings 2.732540e+08
    Other Liab 9.485460e+08
    Treasury Stock -3.325870e+08
    Other Assets 4.475660e+08
    Cash 9.117400e+07
    Total Current Liabilities 3.711940e+08
    Deferred Long Term Asset Charges 6.226100e+07
    Short Long Term Debt 2.888900e+07
    Other Stockholder Equity -3.325870e+08
    Property Plant Equipment 1.736252e+09
    Total Current Assets 3.367420e+08
    Net Tangible Assets 5.830650e+08
    Net Receivables 1.662310e+08
    Long Term Debt 5.504440e+08
    Inventory 5.520900e+07
    Accounts Payable 7.538200e+07 ]

[{'quarterly_cashflow', 2021-12-31 2021-09-30 \
    Change To Liabilities 5226000.0 13242000.0
    Total Cashflows From Investing Activities -35758000.0 -45884000.0
    Net Borrowings -30768000.0 -22550000.0
    Total Cash From Financing Activities -30768000.0 -22551000.0
    Change To Operating Activities -27258000.0 1564000.0
    Net Income 117323000.0 -113789000.0
    Change In Cash -14100000.0 12103000.0
    Total Cash From Operating Activities 52426000.0 80538000.0
    Depreciation 56510000.0 55977000.0
    Other Cashflows From Investing Activities -7843000.0 -156000.0
    Change To Inventory -6861000.0 3284000.0
    Change To Account Receivables -9263000.0 8877000.0
    Change To Netincome -85331000.0 109242000.0
    Capital Expenditures -29434000.0 -45863000.0
    Repurchase Of Stock NaN -1000.0
    Other Cashflows From Financing Activities NaN NaN

    2021-06-30 2021-03-31
    Change To Liabilities -6922000.0 -73000.0
    Total Cashflows From Investing Activities -40225000.0 -5494000.0
    Net Borrowings 56940000.0 -29803000.0
    Total Cash From Financing Activities 54342000.0 -31875000.0
    Change To Operating Activities -14728000.0 -3098000.0
    Net Income 4172000.0 26404000.0
    Change In Cash 108726000.0 40627000.0
    Total Cash From Operating Activities 94609000.0 7796000.0
    Depreciation 52199000.0 59897000.0
    Other Cashflows From Investing Activities -156000.0 -182000.0
    Change To Inventory -3574000.0 475000.0
    Change To Account Receivables 50857000.0 -5764000.0
    Change To Netincome 10414000.0 -1985000.0
    Capital Expenditures -43655000.0 -13800000.0
    Repurchase Of Stock -230000.0 -2072000.0
    Other Cashflows From Financing Activities -2368000.0 -2368000.0 ]

[{'quarterly_earnings', Revenue Earnings
Quarter
```

```

1Q2021 332361000 26404000
2Q2021 303895000 4172000
3Q2021 294837000 -113789000
4Q2021 338602000 117323000]
[ quarterly_financials',
Research Development None None None
Effect Of Accounting Charges None None None
Income Before Tax 162586000.0 -154047000.0 -4721000.0
Minority Interest None None None
Net Income 117323000.0 -113789000.0 4172000.0
Selling General Administrative 20131000.0 22476000.0 22542000.0
Gross Profit 111053000.0 86408000.0 102837000.0
Ebit 150330000.0 -139095000.0 7904000.0
Operating Income 150330000.0 -139095000.0 7904000.0
Other Operating Expenses -115918000.0 147050000.0 20192000.0
Interest Expense -15849000.0 -16045000.0 -16187000.0
Extraordinary Items None None None
Non Recurring None None None
Other Items None None None
Income Tax Expense 45263000.0 -40258000.0 -8893000.0
Total Revenue 338602000.0 294837000.0 303895000.0
Total Operating Expenses 188272000.0 433932000.0 295991000.0
Cost Of Revenue 227549000.0 208429000.0 201058000.0
Total Other Income Expense Net 12256000.0 -14952000.0 -12625000.0
Discontinued Operations None None None
Net Income From Continuing Ops 117323000.0 -113789000.0 4172000.0
Net Income Applicable To Common Shares 117323000.0 -113789000.0 4172000.0

```

```
2021-03-31
```

```

Research Development None
Effect Of Accounting Charges None
Income Before Tax 31589000.0
Minority Interest None
Net Income 26404000.0
Selling General Administrative 23964000.0
Gross Profit 120238000.0
Ebit 36592000.0
Operating Income 36592000.0
Other Operating Expenses -215000.0
Interest Expense -15261000.0
Extraordinary Items None
Non Recurring None
Other Items None
Income Tax Expense 5185000.0
Total Revenue 332361000.0
Total Operating Expenses 295769000.0
Cost Of Revenue 212123000.0
Total Other Income Expense Net -5003000.0
Discontinued Operations None
Net Income From Continuing Ops 26404000.0
Net Income Applicable To Common Shares 26404000.0 ]

```

```
[ mutualfund_holders', Holder Shares Date Reported \
```

```

0 iShares Core S&P Smallcap ETF 2228007 2022-01-30
1 SPDR (R) Ser Tr-SPDR (R) S&P (R) Metals & Mini... 1914035 2022-01-30
2 iShares Russell 2000 ETF 792575 2022-01-30
3 Vanguard Total Stock Market Index Fund 735685 2021-12-30
4 Victory Portfolios-Victory Integrity Small Cap... 704300 2021-12-30
5 DFA U.S. Small Cap Value Series 629572 2022-01-30
6 iShares S&P Smallcap 600 Value ETF 526608 2022-01-30
7 Vanguard Extended Market Index Fund 430229 2021-12-30
8 iShares Russell 2000 Value ETF 366723 2022-01-30
9 Pacer Small Cap U.S. Cash Cows 100 ETF 323552 2022-01-30

```

```
% Out Value
0 0.0640 48436872
1 0.0550 41611120
2 0.0228 17230580
3 0.0211 16707406
4 0.0202 15994653
5 0.0181 13686895
6 0.0151 11448457
7 0.0124 9770500
8 0.0105 7972558
9 0.0093 7034020 ]
```

```
['options', ('2022-06-17', '2022-08-19')]
```

```
symbol: LNTH
```

```
sector: Healthcare
```

```
Index: SP600
```

```
vol_30d_2yr: 14113253.515625
```

```
Sector LYMF: 20.09100341796875
```

```
LYMF: 20.09100341796875
```

```
risk trend factor: 1.0529877099958074
```

```
beta currentRatio debtToEquity earningsGrowth ebitda \
LNTH 0.943627 1.828 36.846 3.692 108329000
```

```
ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \

```

```

LNTH      0.20002   67.4382    77142872    0.50913   187695000

heldPercentInstitutions           industry   marketCap \
LNTH      1.00644  Diagnostics & Research  4062789888

operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
LNTH      54362000     0.11518      0     0.48   8.132791

priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
LNTH      7.501749    -0.06892     1.563    0.04389

returnOnEquity revenueGrowth revenuePerShare      sector \
LNTH      -0.07151     1.258      7.998  Healthcare

sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
LNTH      67690600     1.93  105355000      1.535  190072992

totalRevenue
LNTH      541579008

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSD 90d_lower 90d_upper
2022-06-16 59.540001 59.091792 66.38219 73.672588 61.651587 5.304665 51.042258 72.260917

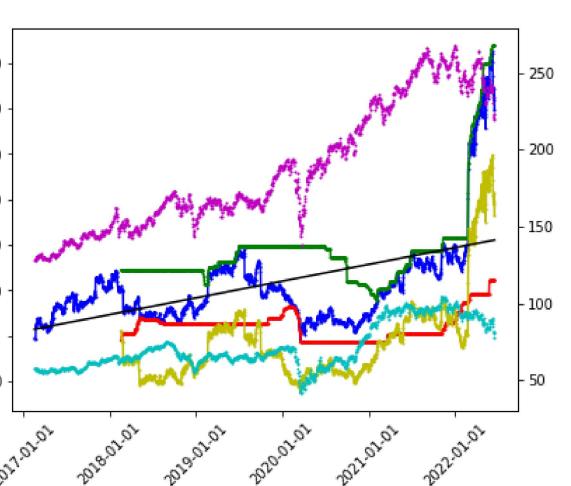
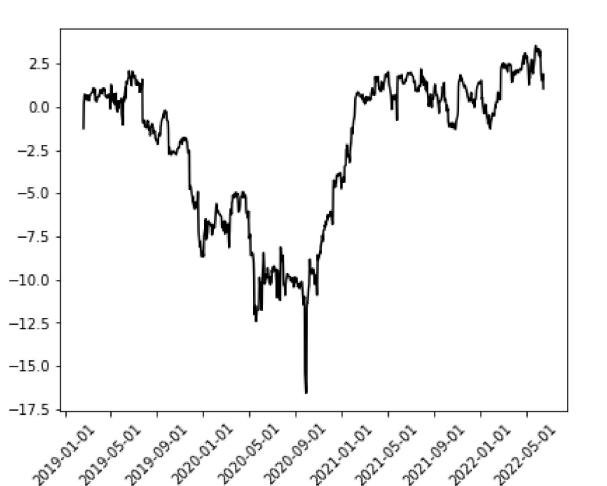
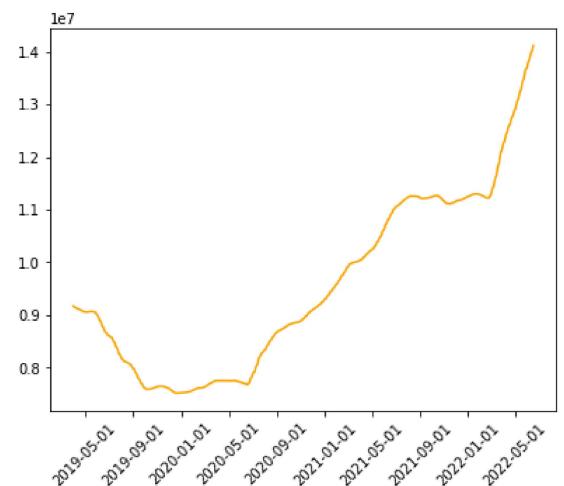
```

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
LNTH	1.772745	59.540001	14113253.515625	0.774897	0.957446	0.533091

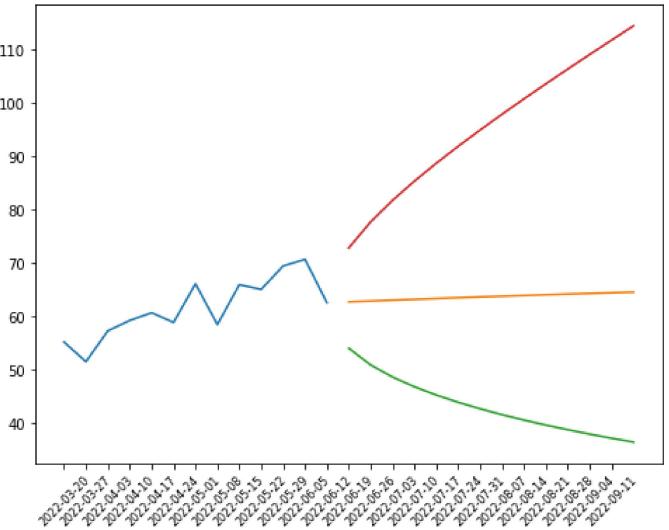
I axis r axis

legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

Sector 1YMF: -124.31001281738281
Sector Volume Factor: 1.2144136602789217
Sector Risk Trend Factor: -2.8504922628415557
Index 1YMF: -79.04000854492188
Index Volume Factor: 1.243664249470528
Index Risk Trend Factor: -4.590013818867828



lets next 13 weeks
inner cv scores:
best model: [None, 'add', True]
best inner cv score, sdev (11 folds): 41.48282594748043 60.16277129292424
test cv mean error, stdev (10 folds): 42.47250399805934 63.01381599971796
sell date: 2022-09-18
expected return: 0.08386712325682995
discounted return: 0.0008663461954796503
quarter return: 1.0829289318966995



```
[ 'quarterly_balance_sheet',
  Intangible Assets           340204000.0 348510000.0 356883000.0
  Capital Surplus             691516000.0 685472000.0 680819000.0
  Total Liab                 417316000.0 399345000.0 348472000.0
  Total Stockholder Equity    515850000.0 464439000.0 499344000.0
  Other Current Liab         89178000.0   NaN      NaN
  Total Assets                933166000.0 863784000.0 847816000.0
  Common Stock                686000.0   677000.0  677000.0
  Other Current Assets       12860000.0 2705000.0 12043000.0
  Retained Earnings          -178263000.0 -221225000.0 -181010000.0
  Other Liab                 64083000.0 129181000.0 88437000.0
  Good Will                  61189000.0 61189000.0 61189000.0
  Treasury Stock              1911000.0  -485000.0 -1142000.0
  Other Assets                78005000.0 92734000.0 103495000.0
  Cash                        105355000.0 98508000.0 91475000.0
  Total Current Liabilities  177657000.0 90497000.0 76903000.0
  Deferred Long Term Asset Charges 47868000.0 62764000.0 66493000.0
  Short Long Term Debt       12500000.0 11607000.0 10766000.0
  Other Stockholder Equity    1911000.0  -485000.0 -1142000.0
  Property Plant Equipment   125634000.0 125560000.0 124728000.0
  Total Current Assets       324747000.0 235791000.0 201521000.0
  Long Term Investments      3387000.0   NaN      NaN
  Net Tangible Assets        114457000.0 54740000.0 81272000.0
  Net Receivables            172283000.0 89336000.0 64054000.0
  Long Term Debt             159165000.0 162729000.0 166479000.0
  Inventory                  34249000.0 35129000.0 33949000.0
  Accounts Payable           22383000.0 20787000.0 20508000.0
```

2021-06-30

```
Intangible Assets           365259000.0
Capital Surplus             676059000.0
Total Liab                 349662000.0
Total Stockholder Equity    508140000.0
Other Current Liab         NaN
Total Assets                857802000.0
Common Stock                676000.0
Other Current Assets       8102000.0
Retained Earnings          -167595000.0
Other Liab                 106587000.0
Good Will                  61189000.0
Treasury Stock              -1000000.0
Other Assets                126648000.0
Cash                        91500000.0
Total Current Liabilities  73826000.0
Deferred Long Term Asset Charges 64777000.0
Short Long Term Debt       11269000.0
Other Stockholder Equity    -1000000.0
Property Plant Equipment   118493000.0
Total Current Assets       186213000.0
Long Term Investments      NaN
Net Tangible Assets        81692000.0
Net Receivables            54892000.0
Long Term Debt             168514000.0
Inventory                  31719000.0
Accounts Payable           21471000.0 ]
```

2022-03-31 2021-12-31 2021-09-30 \

```
[ 'quarterly_cashflow',
  Change To Liabilities     1506000.0 649000.0 -1112000.0
  Total Cashflows From Investing Activities -1390000.0 -4544000.0 -2420000.0
  Net Borrowings             -2609000.0 -2591000.0 -2620000.0
  Total Cash From Financing Activities -2179000.0 -2100000.0 -1726000.0
  Change To Operating Activities -1674000.0 10133000.0 3754000.0
  Issuance Of Stock          5934000.0 678000.0 961000.0
  Net Income                 42962000.0 -40215000.0 -13415000.0
  Change In Cash              6846000.0 7034000.0 -25000.0
  Repurchase Of Stock         -5504000.0 -187000.0 -67000.0
  Effect Of Exchange Rate    151000.0 -211000.0 -219000.0
  Total Cash From Operating Activities 10264000.0 13889000.0 4340000.0
  Depreciation                11786000.0 12200000.0 12339000.0
  Change To Inventory         -1634000.0 -2924000.0 -2513000.0
  Change To Account Receivables -85155000.0 -25381000.0 -9272000.0
  Change To Netincome         42227000.0 59181000.0 14314000.0
  Capital Expenditures       -3190000.0 -4544000.0 -2420000.0
```

2021-06-30

```
Change To Liabilities     1778000.0
Total Cashflows From Investing Activities -2656000.0
Net Borrowings             -2565000.0
Total Cash From Financing Activities -715000.0
Change To Operating Activities 9341000.0
Issuance Of Stock          2043000.0
Net Income                 -26657000.0
Change In Cash              22639000.0
Repurchase Of Stock         -193000.0
Effect Of Exchange Rate    141000.0
Total Cash From Operating Activities 25869000.0
Depreciation                9626000.0
```

```

Change To Inventory           -2001000.0
Change To Account Receivables 3897000.0
Change To Netincome          2970000.0
Capital Expenditures         -2656000.0 ]]
['quarterly_earnings',       Revenue   Earnings
Quarter
202021 101064000 -26657000
3Q2021 102073000 -13415000
4Q2021 129562000 -40215000
1Q2022 208880000 42962000]

```

```

['quarterly_financials',
Research Development          12203000.0 11293000.0 11252000.0
Effect Of Accounting Charges   None      None      None
Income Before Tax              57901000.0 -41007000.0 -19837000.0
Minority Interest               None      None      None
Net Income                      42962000.0 -40215000.0 -13415000.0
Selling General Administrative  57942000.0 42593000.0 36205000.0
Gross Profit                   12907000.0 57908000.0 42669000.0
Ebit                           58925000.0 4022000.0 -4788000.0
Operating Income                58925000.0 4022000.0 -4788000.0
Other Operating Expenses        None      None      None
Interest Expense                -1509000.0 -1528000.0 -1569000.0
Extraordinary Items             None      None      None
Non Recurring                  None      None      None
Other Items                     None      None      None
Income Tax Expense              14939000.0 -792000.0 -6422000.0
Total Revenue                  208880000.0 129562000.0 102073000.0
Total Operating Expenses        149955000.0 125540000.0 106861000.0
Cost Of Revenue                 79810000.0 71654000.0 59404000.0
Total Other Income Expense Net -1024000.0 -45029000.0 -15049000.0
Discontinued Operations        None      None      None
Net Income From Continuing Ops 42962000.0 -40215000.0 -13415000.0
Net Income Applicable To Common Shares 42962000.0 -40215000.0 -13415000.0

```

```

2021-06-30
Research Development          12061000.0
Effect Of Accounting Charges   None
Income Before Tax              -28536000.0
Minority Interest               None
Net Income                      -26657000.0
Selling General Administrative 60808000.0
Gross Profit                   46088000.0
Ebit                           -26781000.0
Operating Income                -26781000.0
Other Operating Expenses        None
Interest Expense                -1937000.0
Extraordinary Items             None
Non Recurring                  None
Other Items                     None
Income Tax Expense              -1879000.0
Total Revenue                  101064000.0
Total Operating Expenses        127845000.0
Cost Of Revenue                 54976000.0
Total Other Income Expense Net -1755000.0
Discontinued Operations        None
Net Income From Continuing Ops -26657000.0
Net Income Applicable To Common Shares -26657000.0 ]

```

```

['mutualfund_holders',
0      iShares Core S&P Smallcap ETF 4760862 2022-01-30
1      Vanguard Total Stock Market Index Fund 1818068 2021-12-30
2      iShares Russell 2000 ETF 1546604 2022-01-30
3      Artisan International Small-Mid Fund 1430335 2021-12-30
4      Thrivent Small Cap Stock Fund 983011 2022-01-30
5      Vanguard Extended Market Index Fund 869393 2021-12-30
6      John Hancock Small Cap Core Fd 846280 2022-01-30
7  Blair (William) Mutual Funds,Inc-Small Cap Val... 724920 2022-02-27
8      Price (T.Rowe) Small-Cap Value Fund 720839 2021-12-30
9      Price (T.Rowe) Health Sciences Fund 720458 2021-12-30

```

% Out	Value
0 0.0694	120973503
1 0.0265	52523984
2 0.0225	39299207
3 0.0208	41322378
4 0.0143	24978309
5 0.0127	25116763
6 0.0123	21503974
7 0.0106	34665674
8 0.0105	20825038
9 0.0105	20814031]
['options', ('2022-07-15',)]	
symbol: GO	
sector: Consumer Defensive	
Index: SP400	
vol_30d_2yr: 21743692.96875	
Sector 1YMF: 9.990001678466797	

```

1YMF: 9.990001678466797
risk trend factor: 0.9920558074695336
    beta currentRatio debtToEquity earningsGrowth      ebitda \
GO -0.204778      1.904     144.187     -0.368   158646000

    ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
GO 0.05023 34.782608 -14480875 0.30639 948786000

heldPercentInstitutions      industry marketCap operatingCashflow \
GO 1.0557 Grocery Stores 3854695936 175503008

operatingMargins payoutRatio pegRatio priceToBook \
GO 0.02681 0 3.5 3.760813

priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
GO 1.220403 0.01741 0.611 0.02033

returnOnEquity revenueGrowth revenuePerShare      sector \
GO 0.05577 0.105 32.914 Consumer Defensive

sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
GO 96367400 6.55 137996000 1.432 1476578944

totalRevenue trailingPE
GO 3158543104 71.42857

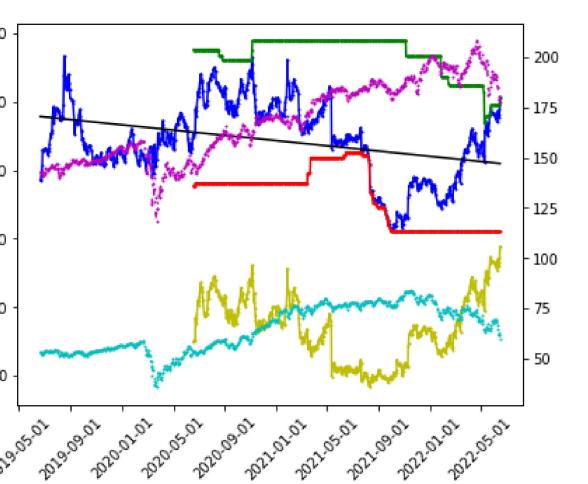
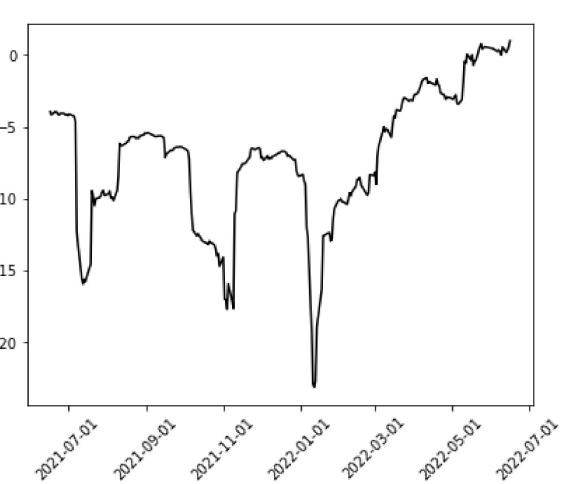
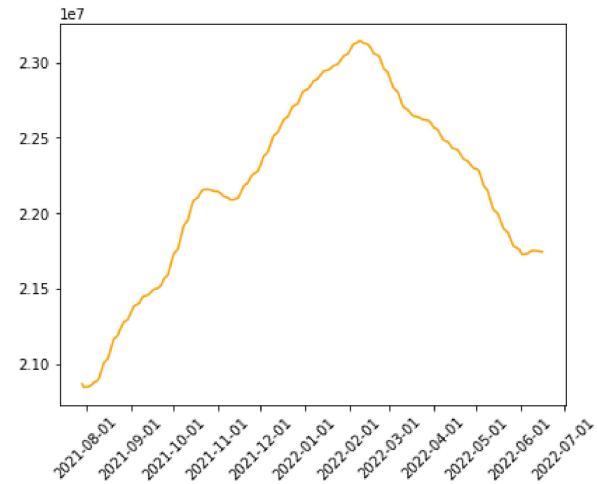
```

	Adj	Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	40.450001	35.617662	37.784079	39.950497	35.093175	2.395336	30.302502	39.883847	

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
GO	1.107204	40.450001	21743692.96875	0.697775	0.177952	0.402887

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

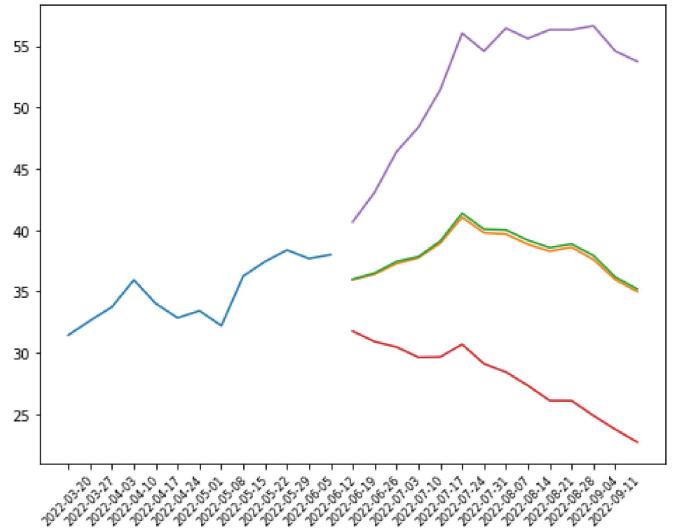
Sector 1YMF: -69.8699951171875
Sector Volume Factor: 1.4804916728676867
Sector Risk Trend Factor: -2.02874535900685
Index 1YMF: -70.88999938964844
Index Volume Factor: 0.5662453634524328
Index Risk Trend Factor: -4.411325496943257



```

ets next 13 weeks
inner cv scores:
best model: ['mul', 'mul', False]
best inner cv score, sdev (11 folds): 15.80987933983161 6.829165054824745
test cv mean error, stdev (10 folds): 15.80987933983162 6.829165054824745
sell date: 2022-07-24
expected return: 0.014618691441191397
discounted return: 0.00039231662398697686
quarter return: 1.0367450559027056

```



```
['options', ('2022-07-15', '2023-01-20', '2024-01-19')]
```

```
symbol: XOM
sector: error
sector: error
Index: SP500
vol_30d_2yr: 552368724.0234375
Sector 1YMF: 24.93999481201172
1YMF: 24.93999481201172
risk trend factor: 0.9490105011595055
```

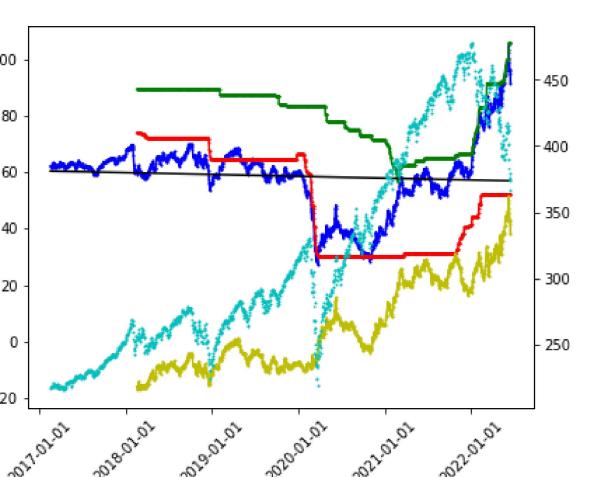
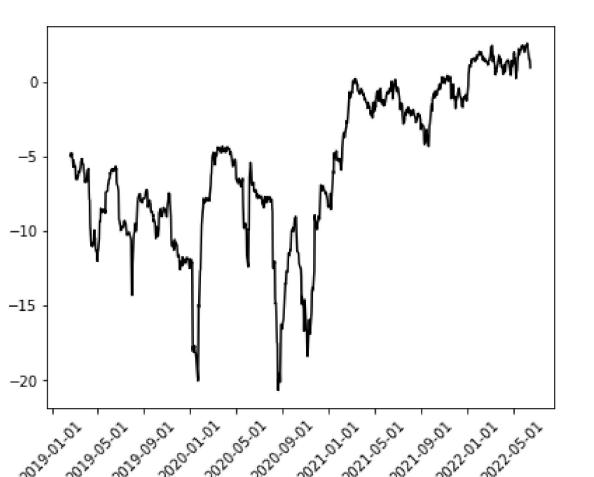
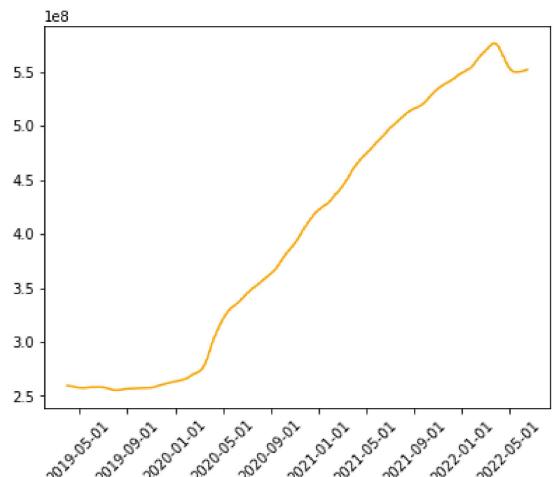
```
Empty DataFrame
Columns: []
Index: [XOM]
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	91.389999	89.198012	96.716825	104.235638	88.786289	6.588575	75.609139	101.963438

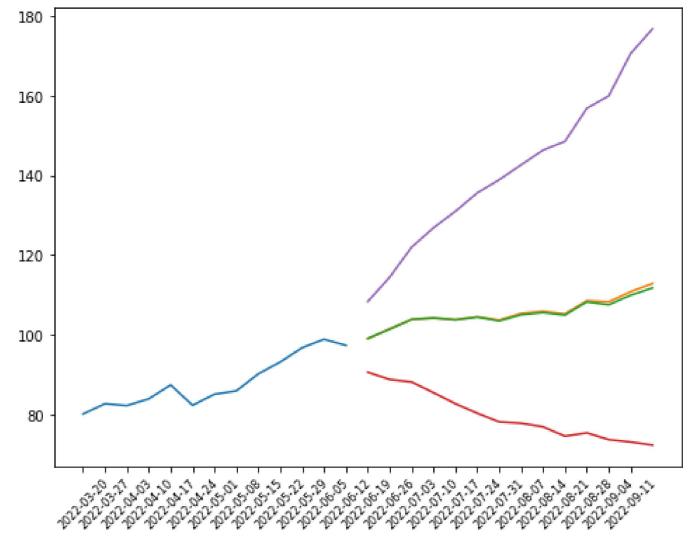
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
XOM	1.083511	91.389999	552368724.023438	0.809562	0.916245	0.534339

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

```
Index 1YMF: -285.47003173828125
Index Volume Factor: 1.1872171829536644
Index Risk Trend Factor: -3.322122130654123
```



```
ets next 13 weeks
inner cv scores:
best model: ['mul', 'add', True]
best inner cv score, sdev (11 folds): 97.73490803510009 107.32363912819847
test cv mean error, stdev (10 folds): 107.20989594386506 108.08678833916397
sell date: 2022-09-18
expected return: 0.23531371659580935
discounted return: 0.0022748950470505847
quarter return: 1.2325098859607904
```



```
[ 'mutualfund_holders',
  0      Vanguard Total Stock Market Index Fund 120310714
  1      Vanguard Total Stock Market Index Fund 120310714
  2      Select Sector SPDR Fund-Energy Select 104790890
  3      Select Sector SPDR Fund-Energy Select 104790890
  4          Vanguard 500 Index Fund 89656123
  5          Vanguard 500 Index Fund 89656123
  6          SPDR S&P 500 ETF Trust 44986060
  7          SPDR S&P 500 ETF Trust 44986060
  8          Fidelity 500 Index Fund 43355092
  9          Fidelity 500 Index Fund 43355092
 10         iShares Core S&P 500 ETF 35205800
 11         iShares Core S&P 500 ETF 35205800
 12         Vanguard Index-Value Index Fund 32349611
 13         Vanguard Index-Value Index Fund 32349611
 14 Vanguard Institutional Index Fund-Institutional... 31898803
 15 Vanguard Institutional Index Fund-Institutional... 31898803
 16         Vanguard Energy Index Fund 24678647
 17         Vanguard Energy Index Fund 24678647
 18         First Eagle Global Fund 17012219
 19         First Eagle Global Fund 17012219

  Date Reported % Out     Value
 0  2021-12-30  0.0286 7361812589
 1  2021-12-30  0.0284 7361812589
 2  2022-01-30  0.0249 7959916004
 3  2022-01-30  0.0248 7959916004
 4  2021-12-30  0.0213 5486058166
 5  2021-12-30  0.0212 5486058166
 6  2022-01-30  0.0107 3417141117
 7  2022-01-30  0.0106 3417141117
 8  2022-02-27  0.0103 3399906314
 9  2022-02-27  0.0102 3399906314
10  2022-01-30  0.0084 2674232568
11  2022-01-30  0.0083 2674232568
12  2021-12-30  0.0077 1979472697
13  2021-12-30  0.0076 1979472697
14  2021-12-30  0.0076 1951887755
15  2021-12-30  0.0075 1951887755
16  2022-02-27  0.0059 1935299497
17  2022-02-27  0.0058 1935299497
18  2022-01-30  0.0040 1292248155
19  2022-01-30  0.0040 1292248155 ]
['options', ('2022-06-17', '2022-07-15', '2023-01-20', '2024-01-19', '2026-02-21')]
symbol: MCK
sector: Healthcare
Index: SP500
vol_30d_2yr: 22892569.7265625
Sector 1YMF: 38.0699462890625
1YMF: 38.0699462890625
risk trend factor: 0.936299627649538
    beta currentRatio dividendRate dividendYield      ebitda \
MCK  0.716666      0.98      1.88      0.0058 3516999936

  ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
MCK  0.01368  13.83477  2778374912      0.0503 11967000000

  heldPercentInstitutions           industry      marketCap \
MCK  0.898  Medical Distribution  46534418432

  operatingCashflow operatingMargins payoutRatio pegRatio \
MCK  4917000192      0.0105      0.2521      1.05

  priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
MCK  0.181064      0.00549      0.445      0.02686

  returnOnEquity revenueGrowth revenuePerShare      sector \
MCK  14.01754      0.096  1655.966  Healthcare

  sharesOutstanding shortRatio  totalCash totalCashPerShare  totalDebt \
MCK  152682000      2.69  2753999872      18.385 8098999808

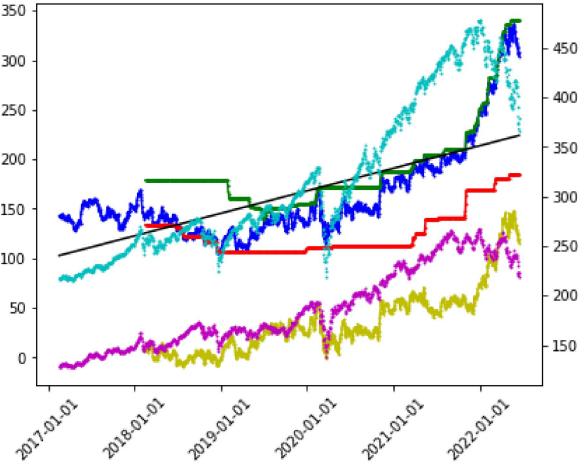
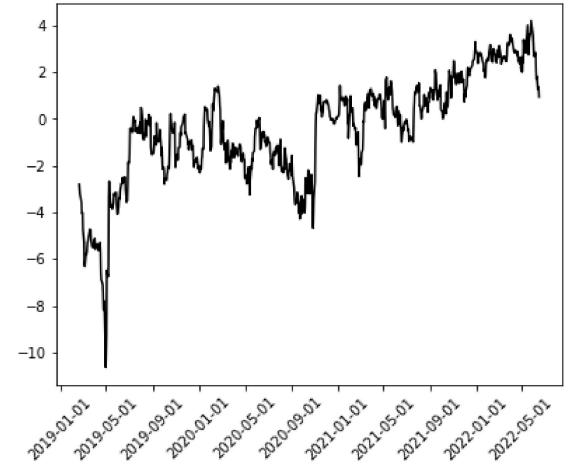
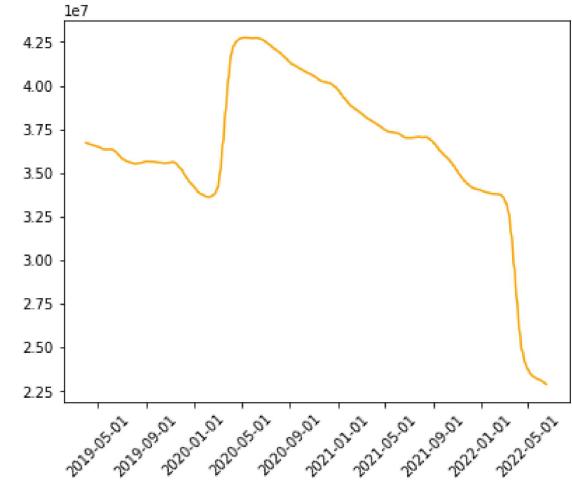
  totalRevenue
MCK  257005993984

  Adj Close  21dBOLD  21dMA-TP  21dBOLU  90dSMA  90dSDev  90d_lower  90d_upper
2022-06-16 304.019989 301.863634 319.558729 337.253824 317.76984 10.161133 297.447575 338.092106

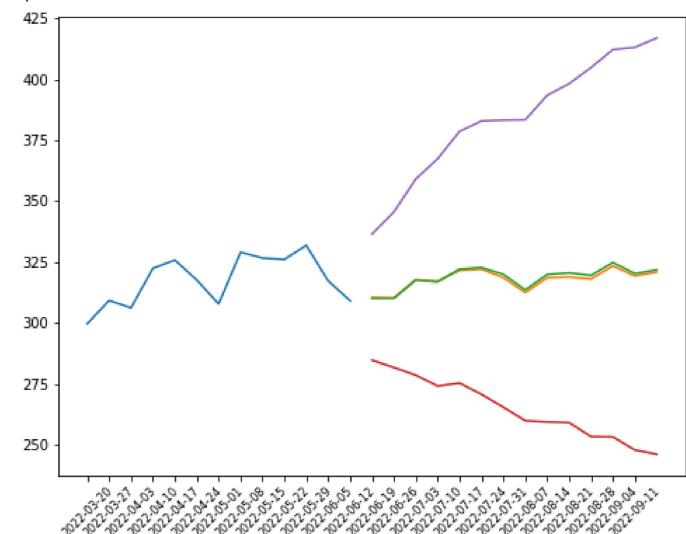
  volume_factor  latest_p  vol_30d_2yr  pct_2yr      adf      hurst
MCK  0.981008 304.019989 22892569.726562 0.820561 0.997806 0.461676
```

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

Sector 1YMF: -124.31001281738281
Sector Volume Factor: 1.2144136602789217
Sector Risk Trend Factor: -2.8504922628415557
Index 1YMF: -285.47003173828125
Index Volume Factor: 1.1872171829536644
Index Risk Trend Factor: -3.322122130654123



ets next 13 weeks
inner cv scores:
best model: ['mul', 'mul', True]
best inner cv score, sdev (11 folds): 460.68525262037815 633.1761312071055
test cv mean error, stdev (10 folds): 495.9381907679 653.7069393524685
sell date: 2022-09-04
expected return: 0.06365637617324695
discounted return: 0.0007814746104450876
quarter return: 1.074513054576828



```
[['options', ('2022-08-19', '2023-01-20', '2024-01-19')],  
 ['sustainability',  
  Value  
 2022-5  
palmOil False  
controversialWeapons False  
gambling False  
socialScore 7.37  
nuclear False  
furLeather False  
alcoholic False  
gmo False  
catholic False  
socialPercentile 0  
peerCount 58  
governanceScore 5.52  
environmentPercentile 0  
animalTesting False  
tobacco False  
totalEsg 15.17  
highestControversy 3  
esgPerformance LAG_PERF  
coal False  
pesticides False  
adult False  
percentile 10.18  
peerGroup Healthcare  
smallArms False  
environmentScore 2.29  
governancePercentile 0  
militaryContract False]  
symbol: COP  
sector: Energy  
Index: SP500  
vol_30d_2yr: 189223264.453125  
Sector 1YMF: 29.659996032714844  
1YMF: 29.659996032714844  
risk trend factor: 0.8399884359916364  
    beta currentRatio debtToEquity dividendRate dividendYield \  
COP 1.420588 1.335 45.371 1.92 0.0187  
  
    ebitda ebitdaMargins forwardPE freeCashflow grossMargins \  
COP 20018999296 0.42904 12.647641 10509124608 0.49156  
  
    grossProfits heldPercentInstitutions industry marketCap \  
COP 22936000000 0.80521 Oil & Gas E&P 130116534272  
  
    operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \  
COP 16995999744 0.27435 0.2348 0.54 2.949491  
  
    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \  
COP 2.78861 0.17315 1.094 0.10439  
  
    returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \  
COP 0.21471 1.771 35.237 Energy 1318950016  
  
    shortRatio totalCash totalCashPerShare totalDebt totalRevenue \  
COP 1.79 659100064 5.072 20600999936 46660001792  
  
    trailingPE  
COP 26.756605
```

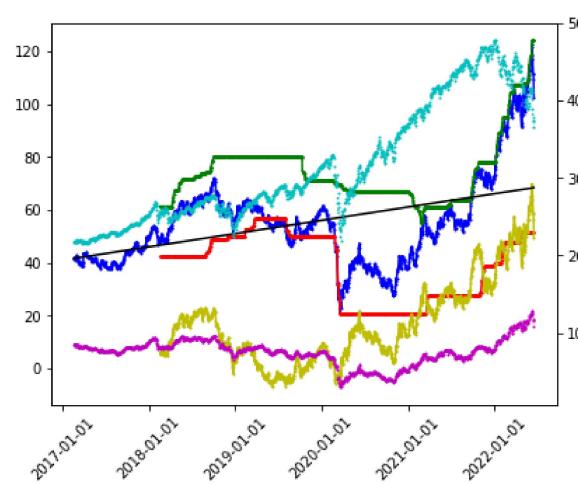
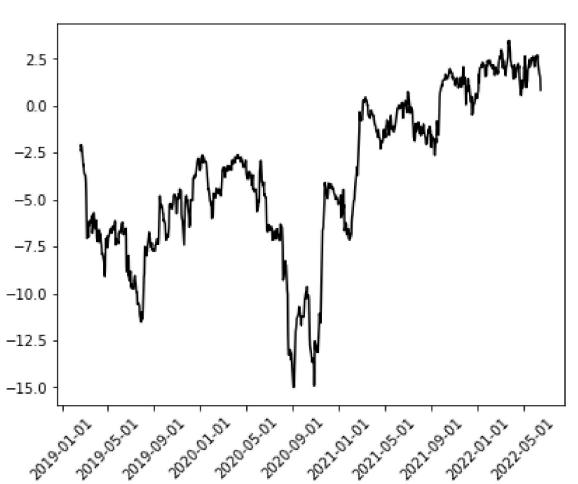
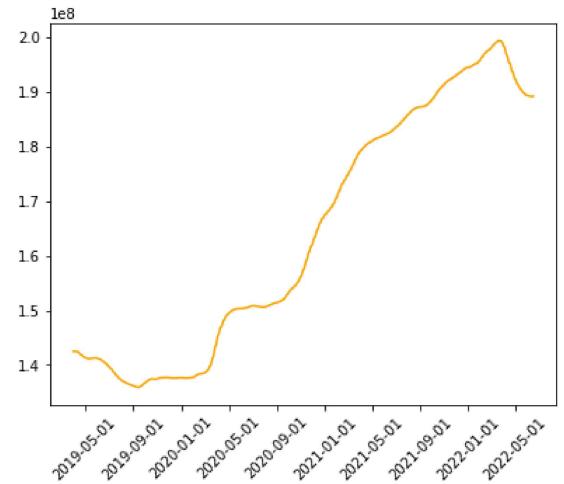
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSD	90d_lower	90d_upper
2022-06-16	102.419998	101.7508	112.619206	123.487613	104.448413	7.348641	89.751132	119.145694

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
COP	0.8692	102.419998	189223264.453125	0.77566	0.929388	0.48705

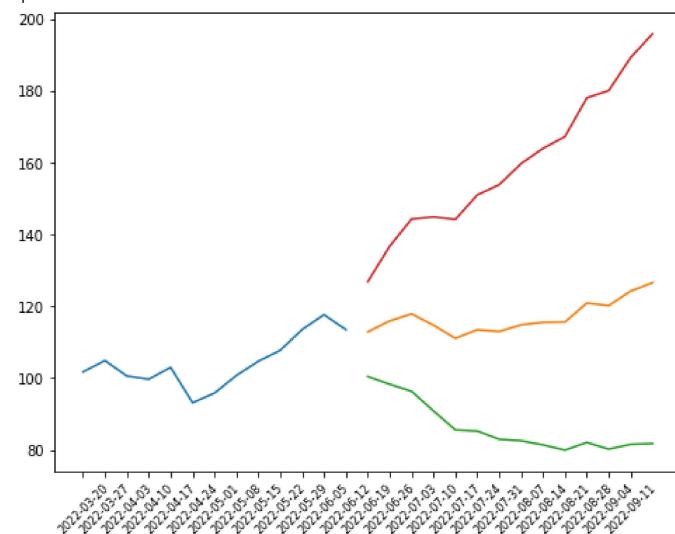
I axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

6/17/22, 10:15 AM

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -285.47003173828125
Index Volume Factor: 1.1872171829536644
Index Risk Trend Factor: -3.322122130654123



ets next 13 weeks
inner cv scores:
best model: ['add', 'add', False]
best inner cv score, sdev (11 folds): 143.25760529439555 169.46635721089507
test cv mean error, stdev (10 folds): 156.83364486058147 171.94040477575322
sell date: 2022-09-18
expected return: 0.23531551862796574
discounted return: 0.002274910768365501
quarter return: 1.2325116645701102



```
[ 'quarterly_balance_sheet', 2021-12-31 2021-09-30 2021-06-30 \
Capital Surplus 6.058100e+10 6.043100e+10 6.033700e+10
Total Liab 4.525500e+10 4.318900e+10 4.112700e+10
Total Stockholder Equity 4.540600e+10 4.411500e+10 4.427600e+10
Other Current Liab 4.390000e+09 3.763000e+09 2.094000e+09
Total Assets 9.066100e+10 8.730400e+10 8.540300e+10
Common Stock 2.100000e+07 2.100000e+07 2.100000e+07
Other Current Assets 1.348000e+09 1.696000e+09 7.800000e+08
Retained Earnings 4.067400e+10 3.830700e+10 3.711600e+10
Other Liab 1.402100e+10 1.399200e+10 1.417200e+10
Treasury Stock -5.587000e+10 -5.464400e+10 -5.319800e+10
Other Assets 2.036000e+09 2.376000e+09 2.501000e+09
Cash 5.028000e+09 9.833000e+09 6.608000e+09
Total Current Liabilities 1.202100e+10 1.044900e+10 8.150000e+09
Short Long Term Debt 9.200000e+08 9.200000e+08 1.205000e+09
Other Stockholder Equity -4.950000e+09 -5.123000e+09 -4.920000e+09
Property Plant Equipment 6.556000e+10 5.668900e+10 5.771700e+10
Total Current Assets 1.605000e+10 2.018100e+10 1.717200e+10
Long Term Investments 7.015000e+09 8.058000e+09 8.013000e+09
Net Tangible Assets 4.540600e+10 4.411500e+10 4.427600e+10
Short Term Investments 1.563000e+09 2.094000e+09 4.053000e+09
Net Receivables 6.670000e+09 5.465000e+09 4.524000e+09
Long Term Debt 1.775300e+10 1.789500e+10 1.793000e+10
Inventory 1.208000e+09 1.043000e+09 1.138000e+09
Accounts Payable 5.025000e+09 4.131000e+09 3.613000e+09
```

```
2021-03-31
```

```
Capital Surplus 6.027800e+10
Total Liab 4.053800e+10
Total Stockholder Equity 4.315500e+10
Other Current Liab 1.180000e+09
Total Assets 8.369300e+10
Common Stock 2.100000e+07
Other Current Assets 3.260000e+08
Retained Earnings 3.560800e+10
Other Liab 1.401600e+10
Treasury Stock -5.275200e+10
Other Assets 2.523000e+09
Cash 2.831000e+09
Total Current Liabilities 7.184000e+09
Short Long Term Debt 6.890000e+08
Other Stockholder Equity -5.080000e+09
Property Plant Equipment 5.827000e+10
Total Current Assets 1.461400e+10
Long Term Investments 8.286000e+09
Net Tangible Assets 4.315500e+10
Short Term Investments 5.668000e+09
Net Receivables 4.481000e+09
Long Term Debt 1.846500e+10
Inventory 1.098000e+09
Accounts Payable 3.779000e+09 ]
```

```
2021-12-31 2021-09-30 \
```

```
[ 'quarterly_cashflow', 2021-12-31 2021-09-30 \
Investments 2.450000e+08 1.544000e+09
Change To Liabilities 7.170000e+08 3.590000e+08
Total Cashflows From Investing Activities -8.595000e+09 5.320000e+08
Net Borrowings -1.420000e+08 -3.190000e+08
Total Cash From Financing Activities -2.031000e+09 -2.086000e+09
Change To Operating Activities 1.510000e+08 -4.120000e+08
Issuance Of Stock 1.180000e+08 2.700000e+07
Net Income 2.627000e+09 2.379000e+09
Change In Cash -4.789000e+09 3.231000e+09
Repurchase Of Stock -1.399000e+09 -1.243000e+09
Effect Of Exchange Rate -3.100000e+07 -1.200000e+07
Total Cash From Operating Activities 5.868000e+09 4.797000e+09
Depreciation 1.792000e+09 1.672000e+09
Other Cashflows From Investing Activities 5.280000e+08 -3.420000e+08
Dividends Paid -6.090000e+08 -5.790000e+08
Change To Inventory -1.470000e+08 7.600000e+07
Change To Account Receivables -8.810000e+08 -8.250000e+08
Other Cashflows From Financing Activities 1.000000e+06 2.800000e+07
Change To Netincome 1.076000e+09 4.400000e+07
Capital Expenditures -1.557000e+09 -1.302000e+09
```

```
2021-06-30 2021-03-31
```

```
Investments 1.801000e+09 -4.990000e+08
Change To Liabilities -1.010000e+08 4.240000e+08
Total Cashflows From Investing Activities 7.340000e+08 -1.215000e+09
Net Borrowings -1.800000e+07 -2.600000e+07
Total Cash From Financing Activities -1.203000e+09 -1.015000e+09
Change To Operating Activities -3.450000e+08 -4.300000e+07
Issuance Of Stock 2.700000e+07 2.700000e+07
Net Income 2.091000e+09 9.820000e+08
Change In Cash 3.793000e+08 -1.520000e+08
Repurchase Of Stock -6.060000e+08 -3.750000e+08
Effect Of Exchange Rate 1.100000e+07 -2.000000e+06
Total Cash From Operating Activities 4.251000e+09 2.080000e+09
```

```

Depreciation 1.868000e+09 1.886000e+09
Other Cashflows From Investing Activities 2.100000e+07 1.190000e+08
Dividends Paid -5.830000e+08 -5.880000e+08
Change To Inventory -3.800000e+07 -5.100000e+07
Change To Account Receivables -9.000000e+06 -7.850000e+08
Other Cashflows From Financing Activities 4.000000e+06 -2.600000e+07
Change To Netincome 8.100000e+07 -7.730000e+08
Capital Expenditures -1.248000e+09 -1.217000e+09 ]
[ 'quarterly_earnings', Revenue Earnings
Quarter

```

```

1Q2021 9948000000 982000000
2Q2021 9695000000 2091000000
3Q2021 11565000000 2379000000
4Q2021 15452000000 2627000000]

```

```
[ 'quarterly_financials', 2021-12-31 2021-09-30 \

```

```

Research Development None None
Effect Of Accounting Charges None None
Income Before Tax 4336000000.0 3582000000.0
Minority Interest None None
Net Income 2627000000.0 2379000000.0
Selling General Administrative 176000000.0 144000000.0
Gross Profit 7429000000.0 5997000000.0
Ebit 4802000000.0 3659000000.0
Operating Income 4802000000.0 3659000000.0
Other Operating Expenses 534000000.0 457000000.0
Interest Expense -219000000.0 -219000000.0
Extraordinary Items None None
Non Recurring None None
Other Items None None
Income Tax Expense 1709000000.0 1203000000.0
Total Revenue 15452000000.0 11565000000.0
Total Operating Expenses 10650000000.0 7906000000.0
Cost Of Revenue 8023000000.0 5568000000.0
Total Other Income Expense Net -466000000.0 -77000000.0
Discontinued Operations None None
Net Income From Continuing Ops 2627000000.0 2379000000.0
Net Income Applicable To Common Shares 2627000000.0 2379000000.0

```

```
2021-06-30 2021-03-31

```

```

Research Development None None
Effect Of Accounting Charges None None
Income Before Tax 3080000000.0 1714000000.0
Minority Interest None None
Net Income 2091000000.0 982000000.0
Selling General Administrative 156000000.0 274000000.0
Gross Profit 5318000000.0 4138000000.0
Ebit 2793000000.0 1483000000.0
Operating Income 2793000000.0 1483000000.0
Other Operating Expenses 445000000.0 415000000.0
Interest Expense -220000000.0 -226000000.0
Extraordinary Items None None
Non Recurring None None
Other Items None None
Income Tax Expense 989000000.0 732000000.0
Total Revenue 9695000000.0 9948000000.0
Total Operating Expenses 6902000000.0 8465000000.0
Cost Of Revenue 4377000000.0 5810000000.0
Total Other Income Expense Net 287000000.0 231000000.0
Discontinued Operations None None
Net Income From Continuing Ops 2091000000.0 982000000.0
Net Income Applicable To Common Shares 2091000000.0 982000000.0

```

```
[ 'mutualfund_holders', Holder Shares Date Reported % Out \

```

```

0 Vanguard Total Stock Market Index Fund 37482675 2021-12-30 0.0290
1 Vanguard 500 Index Fund 27932470 2021-12-30 0.0216
2 Select Sector SPDR Fund-Energy Select 17578768 2022-01-30 0.0136
3 JP Morgan Equity Income Fund 17507721 2021-12-30 0.0135
4 American Mutual Fund Inc 14946383 2022-01-30 0.0116
5 Dodge & Cox Stock Fund 14316858 2021-12-30 0.0111
6 Washington Mutual Investors Fund 14216422 2022-01-30 0.0110
7 SPDR S&P 500 ETF Trust 14014015 2022-01-30 0.0108
8 Fidelity 500 Index Fund 13507069 2022-02-27 0.0104
9 iShares Core S&P 500 ETF 10969668 2022-01-30 0.0085

```

```
Value

```

```

0 2705499481
1 2016165684
2 1557830420
3 1263707301
4 1324548461
5 1833390810
6 1259859317
7 1241922009
8 1281280565
9 972131978 ]
[ 'options', ('2022-08-19', '2023-01-20', '2024-01-19')] ]
[ 'sustainability', Value

```

```

2022-5
palmOil False
controversialWeapons False
gambling False
socialScore 9.71
nuclear False
furLeather False
alcoholic False
gmo False
catholic False
socialPercentile 0
peerCount 66
governanceScore 7.68
environmentPercentile 0
animalTesting False
tobacco False
totalEsg 34.92
highestControversy 2
esgPerformance LEAD_PERF
coal False
pesticides False
adult False
percentile 77.49
peerGroup Oil & Gas Producers
smallArms False
environmentScore 17.53
governancePercentile 0
militaryContract False]
symbol: HRB
sector: Consumer Cyclical
Index: SP400
vol_30d_2yr: 54246410.7421875
Sector 1YMF: 10.880002975463867
1YMF: 10.880002975463867
risk trend factor: 0.8254932586524946
    beta currentRatio dividendRate dividendYield ebitda ebitdaMargins \
HRB 0.77549 1.058 1.08 0.0334 775283968 0.29948

forwardPE grossMargins grossProfits heldPercentInstitutions \
HRB 11.05094 0.46994 1400058000 0.93728

industry marketCap operatingCashflow operatingMargins \
HRB Personal Services 5861442048 -1775000 0.24504

payoutRatio pegRatio priceToBook priceToSalesTrailing12Months \
HRB 0.3344 0.92 379.25 2.264185

profitMargins quickRatio revenueGrowth revenuePerShare sector \
HRB 0.19834 0.844 0.119 14.768 Consumer Cyclical

sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
HRB 175628992 6.28 336249984 2.044 2666034944

totalRevenue trailingPE
HRB 2588764928 13.566667

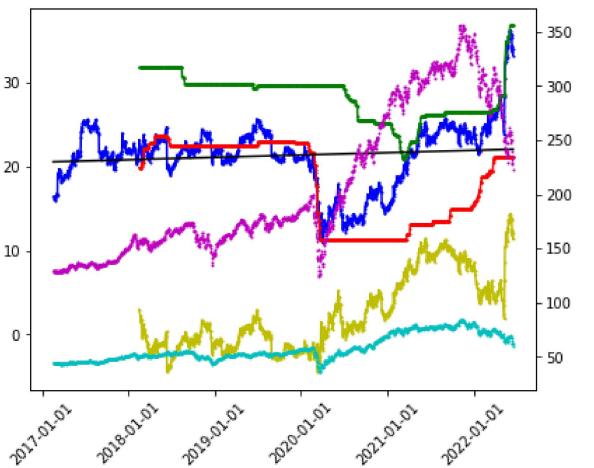
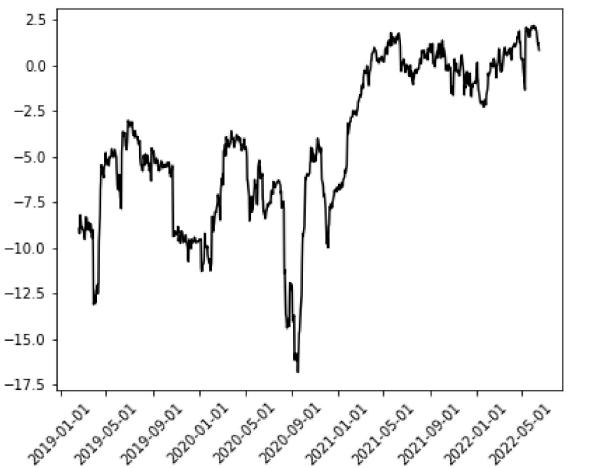
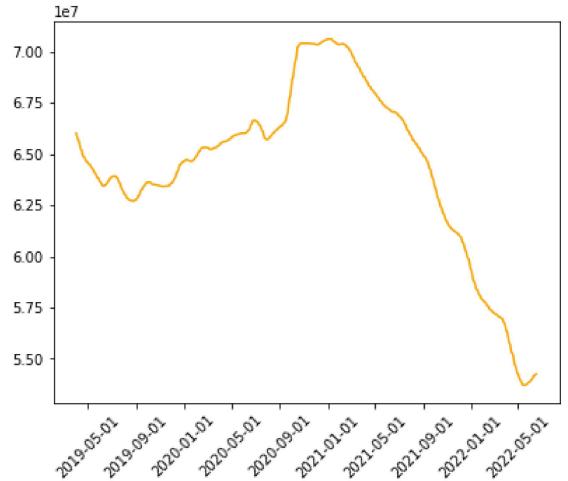
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDDev	90d_lower	90d_upper
2022-06-16	33.27	32.463712	34.639683	36.815653	29.59127	4.038276	21.514719	37.667821

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
HRB	1.002949	33.27	54246410.742188	0.850294	0.68658	0.435784

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

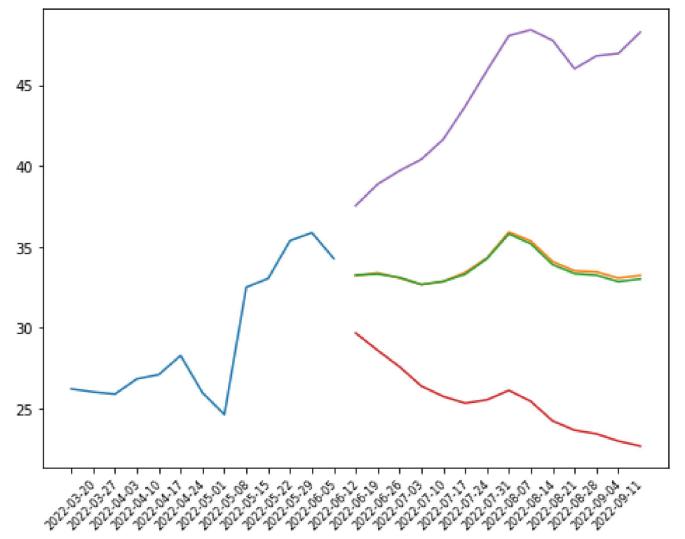
Sector 1YMF: -369.34999084472656
Sector Volume Factor: 1.2963402483527684
Sector Risk Trend Factor: -4.1537329629948685
Index 1YMF: -70.88999938964844
Index Volume Factor: 0.5662453634524328
Index Risk Trend Factor: -4.411325496943257



```

ets next 13 weeks
inner cv scores:
best model: ['mul', 'mul', True]
best inner cv score, sdev (11 folds): 7.876975207816215 7.1666374330399965
test cv mean error, stdev (10 folds): 8.085382812116858 7.484583508127284
sell date: 2022-08-07
expected return: 0.07922483240376207
discounted return: 0.0014960794954594903
quarter return: 1.1474435369623213

```



```
[ 'quarterly_balance_sheet', 2021-12-31 2021-09-30 2021-04-30 \
Intangible Assets 3.345570e+08 3.374510e+08 3.601480e+08
Capital Surplus 7.706610e+08 7.706830e+08 7.832920e+08
Total Liab 3.472710e+09 3.352499e+09 3.301245e+09
Total Stockholder Equity -3.726550e+08 1.552800e+07 3.524010e+08
Other Current Liab 2.636960e+08 3.421690e+08 4.931200e+08
Total Assets 3.100055e+09 3.368027e+09 3.653646e+09
Common Stock 2.033000e+06 2.099000e+06 2.167000e+06
Other Current Assets 1.236860e+08 1.390670e+08 1.286690e+08
Retained Earnings -4.668560e+08 -7.475700e+07 2.485060e+08
Other Liab 3.246140e+08 3.938340e+08 4.055010e+08
Good Will 7.591830e+08 7.494090e+08 7.576590e+08
Treasury Stock -6.784930e+08 -6.824970e+08 -6.815640e+08
Other Assets 2.297300e+08 2.336890e+08 2.503790e+08
Cash 3.362500e+08 8.917390e+08 9.342510e+08
Total Current Liabilities 1.171440e+09 7.529690e+08 1.163079e+09
Deferred Long Term Asset Charges 1.796260e+08 1.789460e+08 1.828480e+08
Short Long Term Debt 4.993950e+08 NaN NaN
Other Stockholder Equity -9.433000e+06 -1.108900e+07 4.786000e+06
Property Plant Equipment 5.369810e+08 5.517300e+08 5.857360e+08
Total Current Assets 1.239604e+09 1.495748e+09 1.699724e+09
Net Tangible Assets -1.466395e+09 -1.071332e+09 -7.654060e+08
Net Receivables 6.528840e+08 3.952280e+08 5.312420e+08
Long Term Debt 1.760830e+09 1.984512e+09 1.490039e+09
Accounts Payable 1.558410e+08 1.548050e+08 1.896840e+08
```

```
2021-01-31
Intangible Assets 3.812640e+08
Capital Surplus 7.784950e+08
Total Liab 3.702943e+09
Total Stockholder Equity -5.345800e+08
Other Current Liab 2.313770e+08
Total Assets 3.168363e+09
Common Stock 2.187000e+06
Other Current Assets 1.811590e+08
Retained Earnings -6.165180e+08
Other Liab 3.965030e+08
Good Will 7.456160e+08
Treasury Stock -6.987440e+08
Other Assets 2.388310e+08
Cash 2.802490e+08
Total Current Liabilities 6.914830e+08
Deferred Long Term Asset Charges 1.795980e+08
Short Long Term Debt NaN
Other Stockholder Equity -1.169300e+07
Property Plant Equipment 5.820100e+08
Total Current Assets 1.220642e+09
Net Tangible Assets -1.661460e+09
Net Receivables 5.630890e+08
Long Term Debt 2.369574e+09
Accounts Payable 1.553800e+08 ]
```

```
[ 'quarterly_cashflow', 2021-12-31 2021-09-30 \
Change To Liabilities -10603000.0 -162205000.0
Total Cashflows From Investing Activities -37991000.0 -19453000.0
Net Borrowings 275000000.0 275000000.0
Total Cash From Financing Activities 67439000.0 -217322000.0
Change To Operating Activities -58473000.0 7172000.0
Issuance Of Stock 682000.0 3385000.0
Net Income -190605000.0 -151601000.0
Change In Cash -570870000.0 -553358000.0
Repurchase Of Stock -158789000.0 -16580000.0
Effect Of Exchange Rate 629000.0 -3959000.0
Total Cash From Operating Activities -600947000.0 -312624000.0
Depreciation 35631000.0 35715000.0
Other Cashflows From Investing Activities 7460000.0 2067000.0
Dividends Paid -47942000.0 -48996000.0
Change To Account Receivables -251984000.0 35913000.0
Other Cashflows From Financing Activities -1512000.0 -5911000.0
Change To Netincome 49407000.0 -4850000.0
Capital Expenditures -23751000.0 -15620000.0
```

```
2021-04-30 2021-01-31
Change To Liabilities 2.120270e+08 121208000.0
Total Cashflows From Investing Activities 2.858900e+07 -50680000.0
Net Borrowings -8.800000e+08 810000000.0
Total Cash From Financing Activities -9.659980e+08 763120000.0
Change To Operating Activities 1.688400e+07 -55690000.0
Issuance Of Stock 1.000000e+03 1006000.0
Net Income 9.492520e+08 -232994000.0
Change In Cash 6.015120e+08 74084000.0
Repurchase Of Stock -3.813600e+07 -4000.0
Effect Of Exchange Rate 4.314000e+06 7584000.0
Total Cash From Operating Activities 1.534607e+09 -645940000.0
Depreciation 3.968900e+07 39856000.0
Other Cashflows From Investing Activities 1.497400e+07 -6854000.0
Dividends Paid -4.718100e+07 -47689000.0
```

```

Change To Account Receivables      2.873740e+08 -489891000.0
Other Cashflows From Financing Activities -6.820000e+05 -193000.0
Change To Netincome                7.261100e+07 -20840000.0
Capital Expenditures              -4.796000e+06 -21412000.0 ]
[ 'quarterly_earnings',           Revenue   Earnings
Quarter

```

```

1Q2021    308227000 -232994000
2Q2021    2328180000  949252000
3Q2021    192624000 -151601000
4Q2021    158816000 -190605000]
[ 'quarterly_financials',

```

```
2021-12-31 2021-09-30 \
```

```

Research Development             None     None
Effect Of Accounting Charges   None     None
Income Before Tax               -298918000.0 -197318000.0
Minority Interest                None     None
Net Income                      -190605000.0 -151601000.0
Selling General Administrative  146793000.0 125864000.0
Gross Profit                     -130507000.0 -48908000.0
Ebit                            -277300000.0 -174772000.0
Operating Income                 -277300000.0 -174772000.0
Other Operating Expenses         None     None
Interest Expense                 -23085000.0 -22830000.0
Extraordinary Items              None     None
Non Recurring                   None     None
Other Items                      None     None
Income Tax Expense               -109845000.0 -47373000.0
Total Revenue                    158816000.0 192624000.0
Total Operating Expenses         436116000.0 367396000.0
Cost Of Revenue                  289323000.0 241532000.0
Total Other Income Expense Net -21618000.0 -22546000.0
Discontinued Operations          -1532000.0 -1656000.0
Net Income From Continuing Ops -189073000.0 -149945000.0
Net Income Applicable To Common Shares -190815000.0 -151840000.0

```

```
2021-04-30 2021-01-31
```

```

Research Development             None     None
Effect Of Accounting Charges   None     None
Income Before Tax               1065221000.0 -283500000.0
Minority Interest                None     None
Net Income                      949252000.0 -232994000.0
Selling General Administrative  340900000.0 191488000.0
Gross Profit                     1426452000.0 -72046000.0
Ebit                            1085552000.0 -263534000.0
Operating Income                 1085552000.0 -263534000.0
Other Operating Expenses         None     None
Interest Expense                 -23562000.0 -22333000.0
Extraordinary Items              None     None
Non Recurring                   None     None
Other Items                      None     None
Income Tax Expense               114254000.0 -51669000.0
Total Revenue                    2328180000.0 308227000.0
Total Operating Expenses         1242628000.0 571761000.0
Cost Of Revenue                  901728000.0 380273000.0
Total Other Income Expense Net -20331000.0 -19966000.0
Discontinued Operations          -1715000.0 -1163000.0
Net Income From Continuing Ops 950967000.0 -231831000.0
Net Income Applicable To Common Shares 947431000.0 -233204000.0 ]

```

```
[ 'mutualfund_holders',           Holder   Shares Date Reported \

```

```

0      Vanguard Total Stock Market Index Fund 4993851 2021-12-30
1      iShares Core S&P Midcap ETF 4885128 2022-01-30
2      Vanguard Small-Cap Index Fund 4419687 2021-12-30
3      Vanguard Fenway Funds-Equity Income Fund 3882113 2021-12-30
4      iShares Select Dividend ETF 3817819 2022-01-30
5  Capitol Ser Tr-Fuller & Thaler Behavioral Smal... 3398675 2022-03-30
6      Vanguard Small Cap Value Index Fund 2804040 2021-12-30
7      Vanguard Extended Market Index Fund 2336271 2021-12-30
8      Royce Special Equity Fund 1540000 2021-12-30
9      Fidelity Select Portfolios-IT Services 1519900 2022-02-27

```

```
% Out  Value

```

```

0  0.0313 117655129
1  0.0306 111674026
2  0.0277 104127825
3  0.0243 91462582
4  0.0239 87275342
5  0.0213 88501497
6  0.0176 66063182
7  0.0146 55042544
8  0.0096 36282400
9  0.0095 37708719 ]
[ 'options', ('2022-07-15', '2023-01-20', '2024-01-19')]
symbol: SM
sector: Energy
Index: SP600
vol_30d_2yr: 85523868.75
Sector 1YMF: 17.739999771118164

```

```

1YMF: 17.739999771118164
risk trend factor: 0.7763675270964514
    beta currentRatio debtToEquity dividendRate dividendYield      ebitda \
SM 5.179219      0.717     93.916      0.02      0.0004 1315937024

    ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
SM 0.45427 5.310769 570353344 0.8671 2136878000

    heldPercentInstitutions industry marketCap operatingCashflow \
SM 0.88365 Oil & Gas E&P 6310117888 1396240000

    operatingMargins payoutRatio pegRatio priceToBook \
SM 0.18012 0.007 0.17 2.983406

    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
SM 2.178288 0.11608 0.7 0.06264

    returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \
SM 0.17312 0.931 23.974 Energy 121864000

    shortRatio totalCash totalCashPerShare totalDebt totalRevenue trailingPE
SM 1.89 419887008 3.446 1986428032 2896824064 19.444235

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper

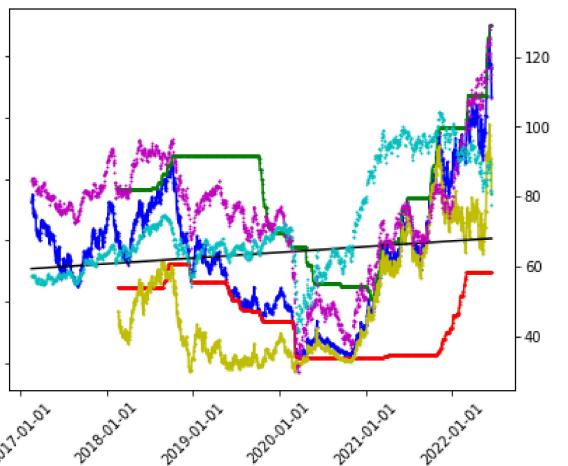
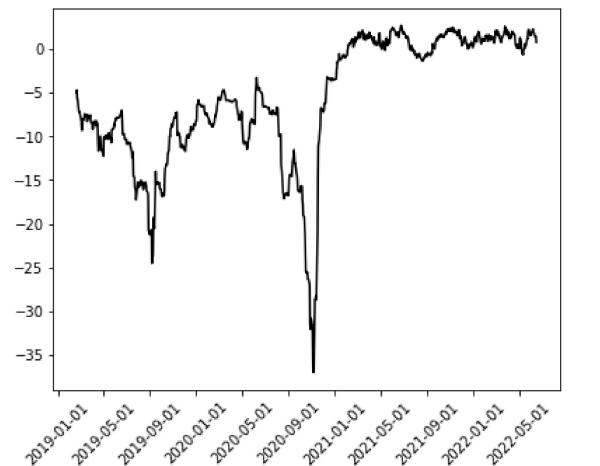
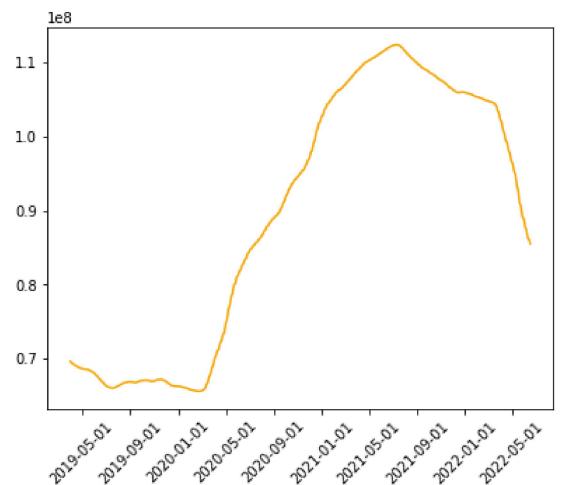
```

2022-06-16 43.299999 35.804937 46.433175 57.061412 41.064762 5.410478 30.243807 51.885717

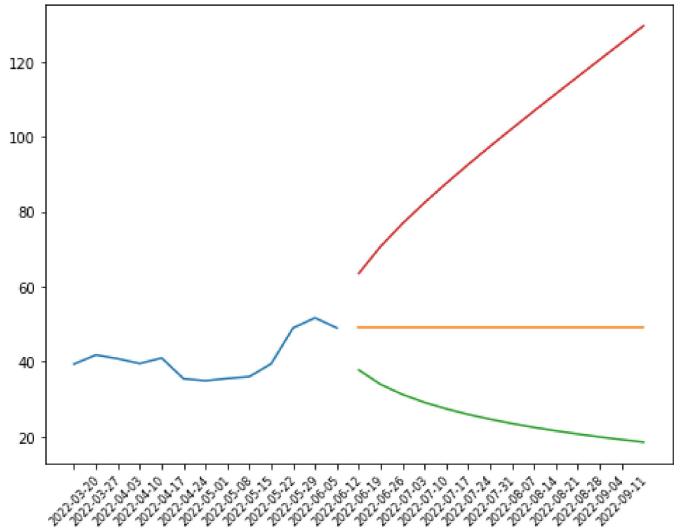
volume	factor	latest_p	vol	30d	2yr	pct	2yr	adf	hurst
SM	0.613435	43.299999	85523868.75	0.782398	0.889778	0.475064			

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -79.04000854492188
Index Volume Factor: 1.243664249470528
Index Risk Trend Factor: -4.590013818867828



ets next 13 weeks
inner cv scores:
best model: [None, None]
best inner cv score, sdev (11 folds): 63.929367331236 97.81975162654231
test cv mean error, stdev (10 folds): 70.16542781018352 100.48781635520929
sell date: 2022-06-19
expected return: 0.13118389304907963
discounted return: 0.06357129194477595
quarter return: 290.0866736776227



```
['options', ('2022-08-19', '2023-01-20', '2024-01-19')]
symbol: DVN
sector: Energy
Index: SP500
vol_30d_2yr: 237831403.90625
Sector 1YMF: 20.21000099182129
1YMF: 20.21000099182129
risk trend factor: 0.7690258370233172
    beta currentRatio debtToEquity dividendRate dividendYield \
DVN 2.588475      1.325      71.489      5.08      0.0742
```

```
earningsGrowth      ebitda ebitdaMargins forwardPE freeCashflow \
DVN      3.625  6653000192      0.4454  6.462943  3098249984
```

```
grossMargins grossProfits heldPercentInstitutions      industry \
DVN      0.58211  7414000000      0.84985  Oil & Gas E&P
```

```
marketCap operatingCashflow operatingMargins payoutRatio pegRatio \
DVN  39712198656      6144000000      0.29732      0.4991      0.35
```

```
priceToBook priceToSalesTrailing12Months profitMargins quickRatio \
DVN  4.274652      2.658646      0.24027      1.188
```

```
returnOnAssets returnOnEquity revenueGrowth revenuePerShare sector \
DVN      0.13144      0.4031      0.74      22.47  Energy
```

```
sharesOutstanding shortRatio      totalCash totalCashPerShare      totalDebt \
DVN      660000000      1.41  2459000064      3.726  6744999936
```

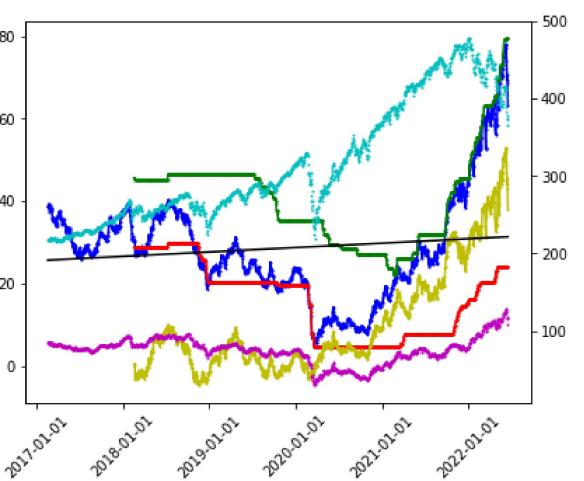
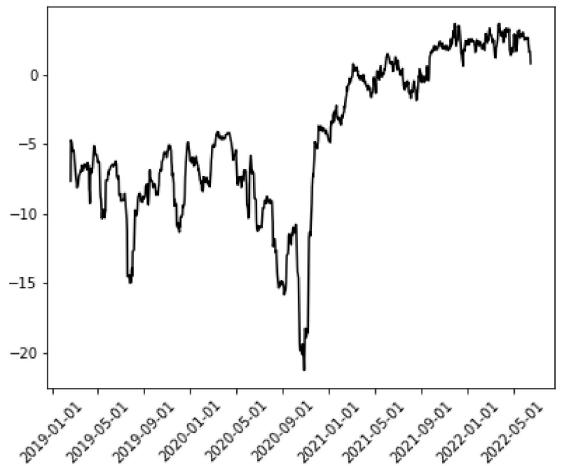
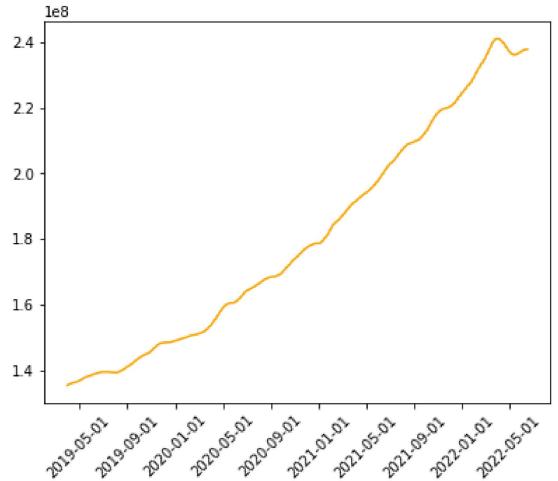
```
totalRevenue trailingPE
DVN  14936999936  11.295287
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	63.27	65.653	73.105238	80.557476	65.763333	6.439721	52.883892	78.642775

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
DVN	1.026625	63.27	237831403.90625	0.774941	0.955415	0.547561

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

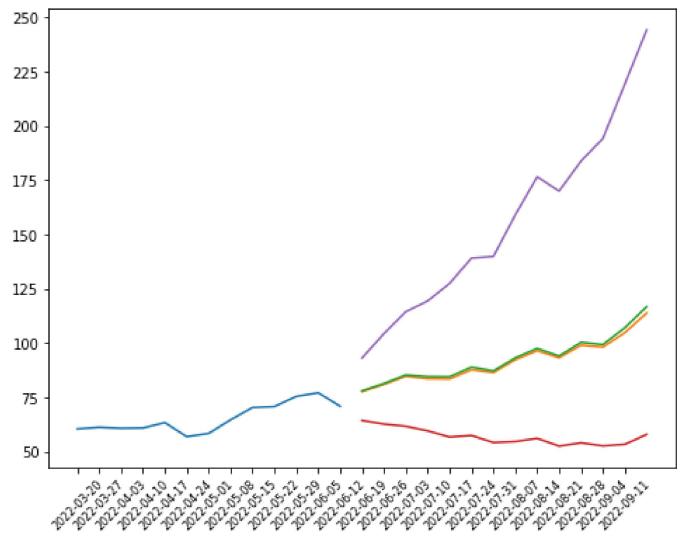
Sector 1YMF: 14.330001831054688
 Sector Volume Factor: 0.8279694389405757
 Sector Risk Trend Factor: 0.4625564970394849
 Index 1YMF: -285.47003173828125
 Index Volume Factor: 1.1872171829536644
 Index Risk Trend Factor: -3.322122130654123



```

ets next 13 weeks
inner cv scores:
best model: ['mul', 'mul', False]
best inner cv score, sdev (11 folds): 83.12660658892773 137.91142109736185
test cv mean error, stdev (10 folds): 90.96221672637152 142.28897168629175
sell date: 2022-09-18
expected return: 0.797646234364674
discounted return: 0.006326142840587856
quarter return: 1.786345557207148

```



6/17/22, 10:15 AM

AnalyzeSP1500

```
['options', ('2022-07-15', '2023-01-20', '2024-01-19')]  
['sustainability',  
 2022-5  
  palmOil False  
  controversialWeapons False  
  gambling False  
  socialScore 8.78  
  nuclear False  
  furLeather False  
  alcoholic False  
  gmo False  
  catholic False  
  socialPercentile None  
  peerCount 66  
  governanceScore 7.86  
  environmentPercentile None  
  animalTesting False  
  tobacco False  
  totalEsg 34.39  
  highestControversy 2  
  esgPerformance OUT_PERF  
  coal False  
  pesticides False  
  adult False  
  percentile 76.03  
  peerGroup Oil & Gas Producers  
  smallArms False  
  environmentScore 17.75  
  governancePercentile None  
  militaryContract False]  
symbol: ROG  
sector: error  
sector: error  
Index: SP600  
vol_30d_2yr: 3248152.734375  
Sector 1YMF: 16.089935302734375  
1YMF: 16.089935302734375  
risk trend factor: 0.7290407776656204  
Empty DataFrame  
Columns: []  
Index: [ROG]
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	257.079987	254.024813	260.133967	266.243121	267.796825	6.249567	255.297691	280.295958

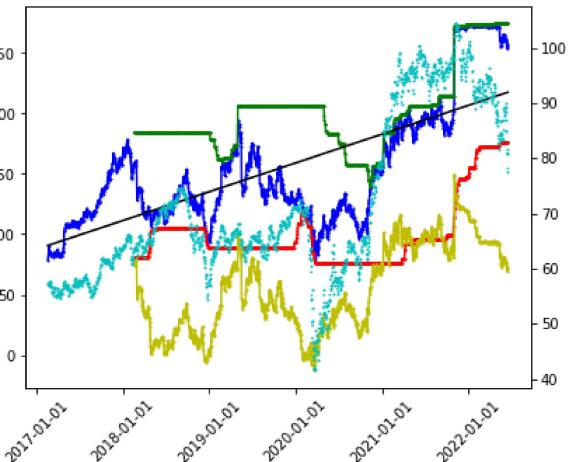
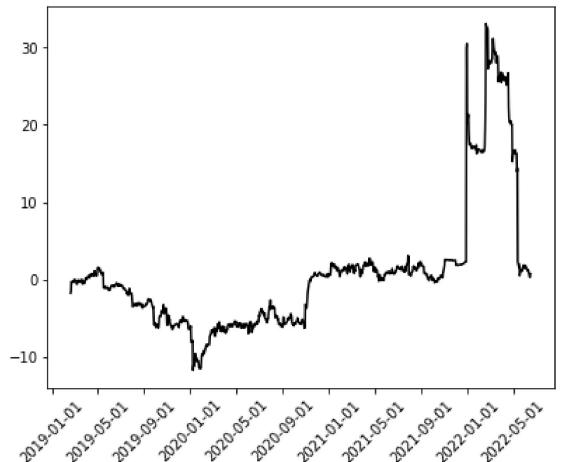
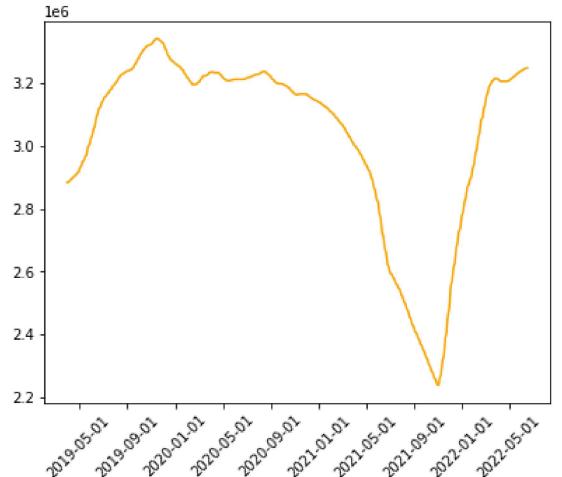
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
ROG	0.994011	257.079987	3248152.734375	0.902528	0.707598	0.478685

	I axis	r axis
blue	symbol	magenta sector
green	trailing_1yr_max	cyan index
red	trailing_1yr_min	
orange	30d_vol_2yr	
black	risk_trend_factor/linear	
yellow	supply_trend_1yr	

Index 1YMF: -79.04000854492188

Index Volume Factor: 1.243664249470528

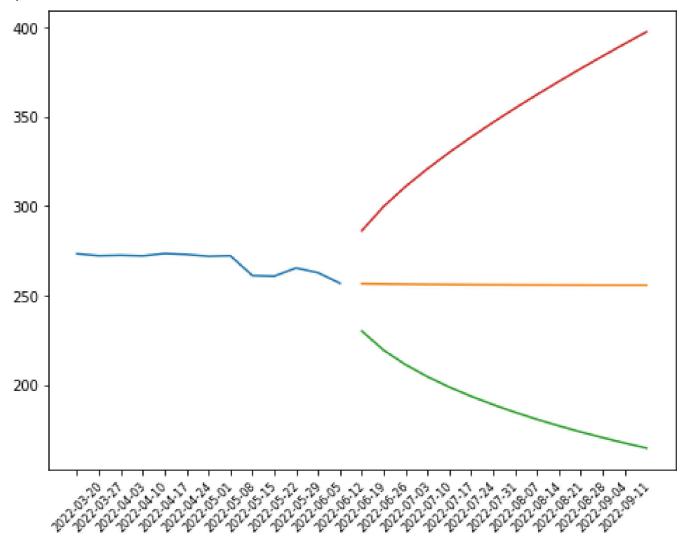
Index Risk Trend Factor: -4.590013818867828



```

ets next 13 weeks
inner cv scores:
best model: [None, 'add', True]
best inner cv score, sdev (11 folds): 850.4186272902851 1192.0450461734074
test cv mean error, stdev (10 folds): 929.9643875509277 1222.0743546869942
sell date: 2022-06-19
expected return: -0.0017051801509878077
discounted return: -0.0008529538406210069
quarter return: 0.9244972166894726

```



```

['options', ('2022-06-17',)]
symbol: SJI
sector: error
sector: error
Index: SP600
vol_30d_2yr: 26835210.15625
Sector 1YMF: 1.3999958038330078
1YMF: 1.3999958038330078
risk trend factor: 0.6666639418858753
Empty DataFrame
Columns: []
Index: [SJI]

```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSD	90d_lower	90d_upper
2022-06-16	33.759998	33.569809	34.296825	35.023842	34.249841	0.377921	33.494	35.005683

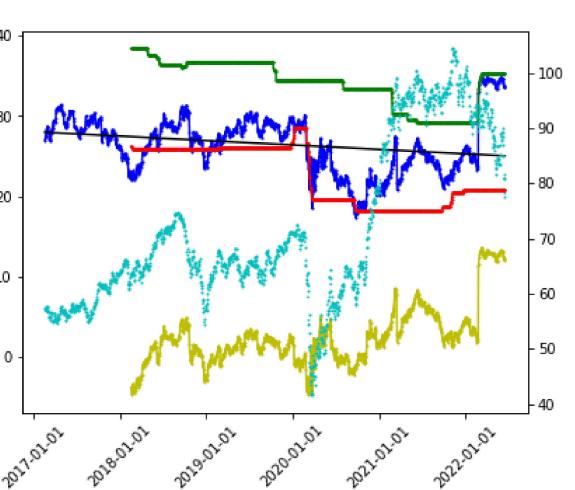
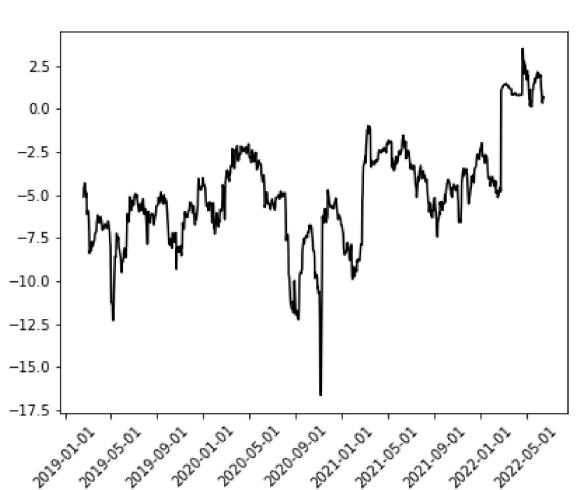
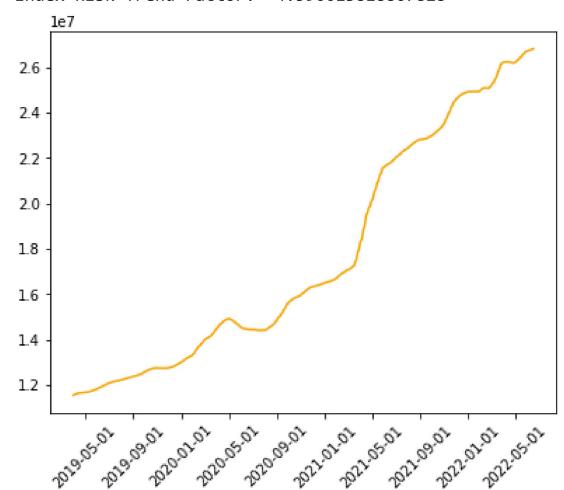
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
SJI	0.714807	33.759998	26835210.15625	0.908665	0.156179	0.415159

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

Index 1YMF: -79.04000854492188

Index Volume Factor: 1.243664249470528

Index Risk Trend Factor: -4.590013818867828



ets next 13 weeks

inner cv scores:

best model: ['add', 'mul', True]

best inner cv score, sdev (11 folds): 8.57891461718493 6.743172921267984

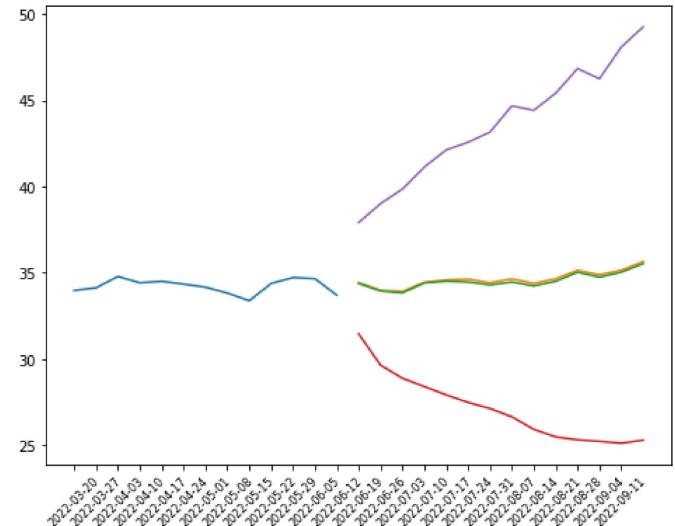
test cv mean error, stdev (10 folds): 9.098370749065896 6.859244780807526

sell date: 2022-09-18

expected return: 0.05609237205772791

discounted return: 0.0005870072213238764

quarter return: 1.055472801901096



```
[ 'options', ('2022-07-15',) ]
symbol: APA
sector: Energy
Index: SP500
vol_30d_2yr: 204947064.2578125
Sector 1YMF: 10.489994049072266
1YMF: 10.489994049072266
risk trend factor: 0.6626653718064264
    beta currentRatio debtToEquity dividendRate dividendYield \
APA 4.125226      1.227     704.108      0.5      0.012

earningsGrowth      ebitda ebitdaMargins forwardPE freeCashflow \
APA      4.324 4982000128      0.56569 4.022178 2424875008

grossMargins grossProfits heldPercentInstitutions      industry \
APA      0.67015 5080000000      0.86629 Oil & Gas E&P

marketCap operatingCashflow operatingMargins payoutRatio pegRatio \
APA 13495457792      3716000000      0.40218      0.0339      0.17

priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
APA      1.532356      0.28023      0.882      0.17293

returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \
APA      4.69732      0.405      24.063 Energy      338232000

shortRatio totalCash totalCashPerShare totalDebt totalRevenue \
APA      0.82 234000000      0.692 5999000064 8807000064

trailingPE
APA 5.931322
```

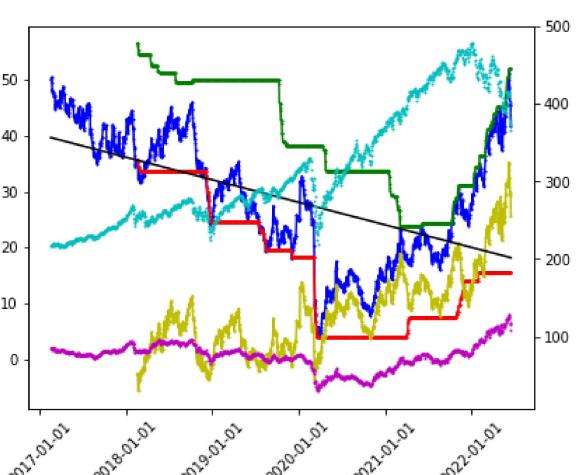
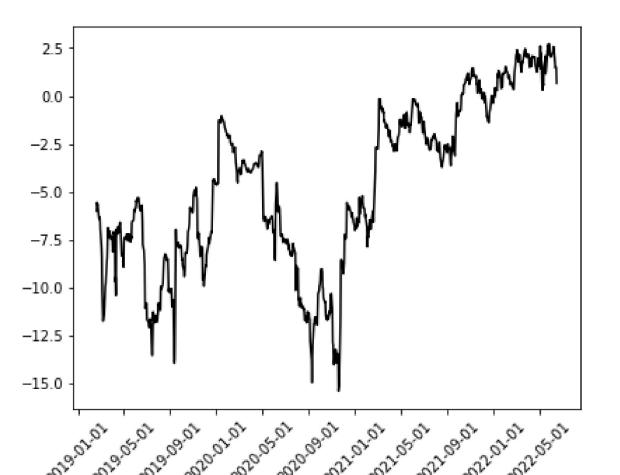
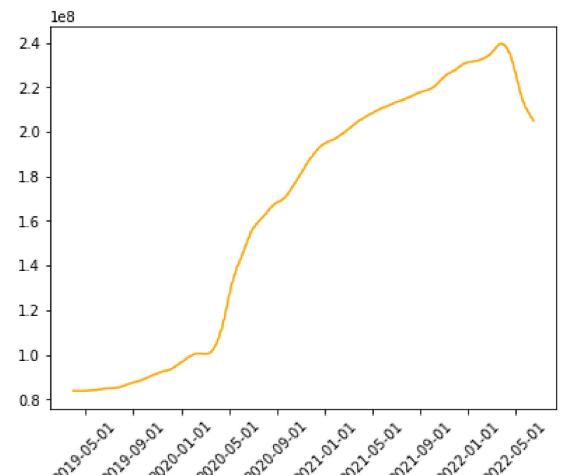
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDDev	90d_lower	90d_upper
2022-06-16	41.759998	40.031775	46.123016	52.214257	42.944286	3.29672	36.350846	49.537726

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
APA	0.960568	41.759998	204947064.257812	0.771011	0.332977	0.446771

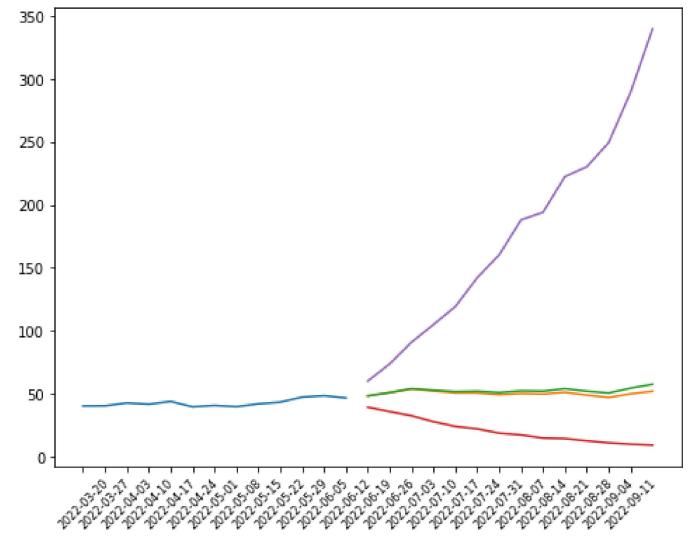
l axis r axis
legend **legend**

blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -285.47003173828125
Index Volume Factor: 1.1872171829536644
Index Risk Trend Factor: -3.322122130654123



```
ets next 13 weeks
inner cv scores:
best model: ['mul', 'mul', True]
best inner cv score, sdev (11 folds): 36.85290742437288 39.68174022446753
test cv mean error, stdev (10 folds): 40.3098803558175 40.00809135666297
sell date: 2022-07-03
expected return: 0.288656410404112
discounted return: 0.01597628599654799
quarter return: 4.298219066376698
```



```

['options', ('2022-07-15', '2023-01-20', '2024-01-19')]
[sustainability] Value
2021-3
palmOil False
controversialWeapons False
gambling False
socialScore 8.88
nuclear False
furLeather False
alcoholic False
gmo False
catholic False
socialPercentile None
peerCount 71
governanceScore 7.96
environmentPercentile None
animalTesting False
tobacco False
totalEsg 38.81
highestControversy 2
esgPerformance OUT_PERF
coal False
pesticides False
adult False
percentile 82.83
peerGroup Oil & Gas Producers
smallArms False
environmentScore 21.98
governancePercentile None
militaryContract False]
symbol: MPC
sector: Energy
Index: SP500
vol_30d_2yr: 141887166.2109375
Sector 1YMF: 21.600013732910156
1YMF: 21.600013732910156
risk trend factor: 0.6589388205393177
    beta currentRatio debtToEquity dividendRate dividendYield      ebitda \
MPC 1.75499     1.449     89.568      2.32      0.0252 8572000256

      ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
MPC 0.06306 11.425641 18097874944 0.08778 10443000000

      heldPercentInstitutions industry marketCap \
MPC 0.79737 Oil & Gas Refining & Marketing 48213475328

      operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
MPC 6418999808 0.0386 0.5472 0.35 2.026145

      priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
MPC 0.354712 0.07964 1.045 0.03693

      returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \
MPC 0.12817 0.679 222.006 Energy 540995008

      shortRatio totalCash totalCashPerShare totalDebt totalRevenue \
MPC 2.78 10597000192 19.588 28034000896 135922999296

      trailingPE
MPC 5.082117

      Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper

```

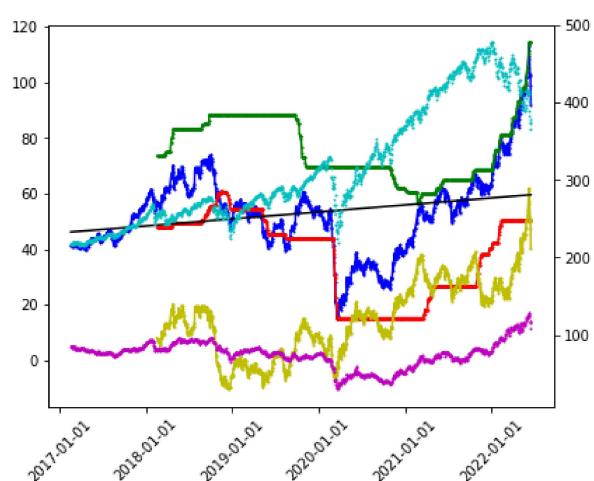
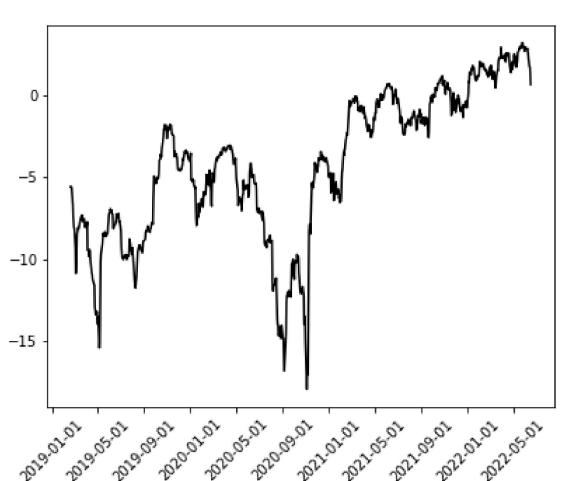
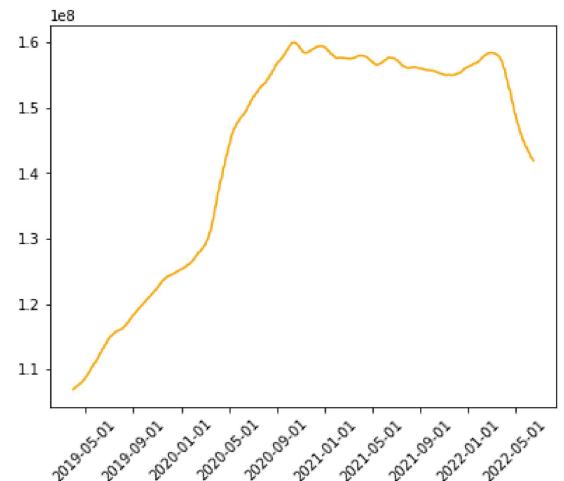
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	91.980003	91.102268	102.463968	113.825668	92.242475	8.974023	74.29443	110.190521

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
MPC	1.076525	91.980003	141887166.210938	0.745187	0.710335 0.51907

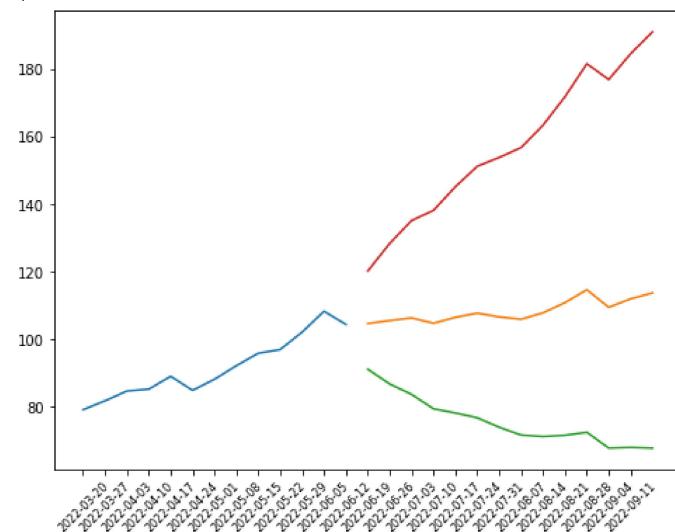
I axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

6/17/22, 10:15 AM

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -285.47003173828125
Index Volume Factor: 1.1872171829536644
Index Risk Trend Factor: -3.322122130654123



ets next 13 weeks
inner cv scores:
best model: ['add', 'add', False]
best inner cv score, sdev (11 folds): 131.0795318352937 179.9759321483381
test cv mean error, stdev (10 folds): 136.70941679332753 187.83455254633932
sell date: 2022-08-28
expected return: 0.2450897103588813
discounted return: 0.003049189124186169
quarter return: 1.323260252034655



```

['options', ('2022-07-15', '2022-09-16', '2023-01-20', '2024-01-19')]
['sustainability', value
2022-5
palmOil False
controversialWeapons False
gambling False
socialScore 7.01
nuclear False
furLeather False
alcoholic False
gmo False
catholic False
socialPercentile None
peerCount 39
governanceScore 5.87
environmentPercentile None
animalTesting False
tobacco False
totalEsg 28.78
highestControversy 3
esgPerformance AVG_PERF
coal False
pesticides False
adult False
percentile 57.14
peerGroup Refiners & Pipelines
smallArms False
environmentScore 15.91
governancePercentile None
militaryContract False]
symbol: DINO
sector: Energy
Index: SP400
vol_30d_2yr: 51415267.1875
Sector 1YMF: 14.680000305175781
1YMF: 14.680000305175781
risk trend factor: 0.6220339514544181
    beta currentRatio debtToEquity dividendRate dividendYield \
DINO 1.54401 1.728 43.018 1.6 0.0278

    earningsGrowth ebitda ebitdaMargins forwardPE freeCashflow \
DINO 0 1260462976 0.05641 10.206038 -1079519232

    grossMargins grossProfits heldPercentInstitutions \
DINO 0.0784 1615735000 0.62669

    industry marketCap operatingCashflow \
DINO Oil & Gas Refining & Marketing 12826910720 805392000

    operatingMargins payoutRatio pegRatio priceToBook \
DINO 0.03909 0.1032 0.35 1.580395

    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
DINO 0.574075 0.02551 0.791 0.03679

    returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \
DINO 0.09048 1.128 134.828 Energy 223232000

    shortRatio totalCash totalCashPerShare totalDebt totalRevenue \
DINO 3.27 592278016 2.653 3818710016 22343598080

    trailingPE
DINO 16.929876

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper
2022-06-16 47.77 43.583972 51.079524 58.575075 43.652222 6.256969 31.138285 56.166159

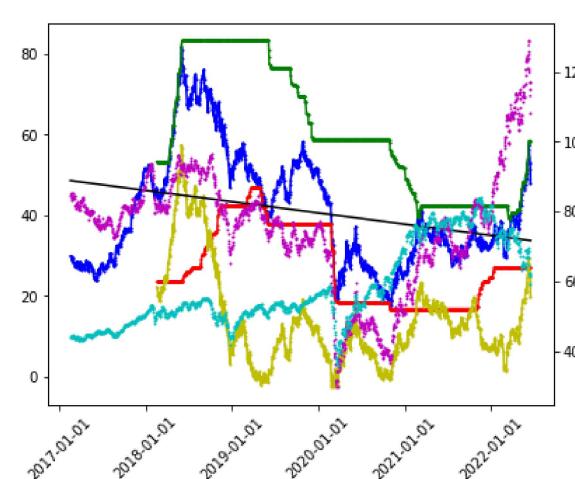
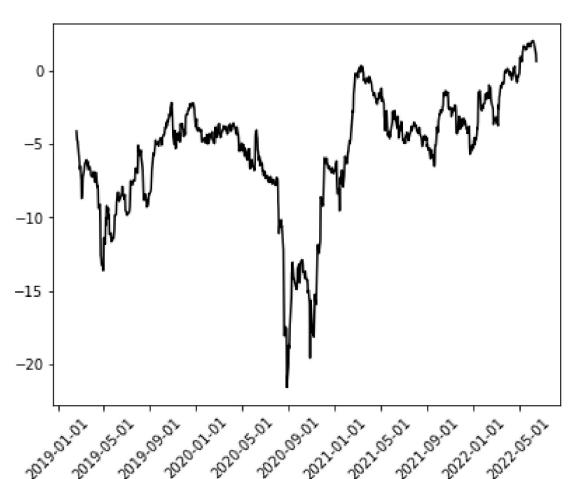
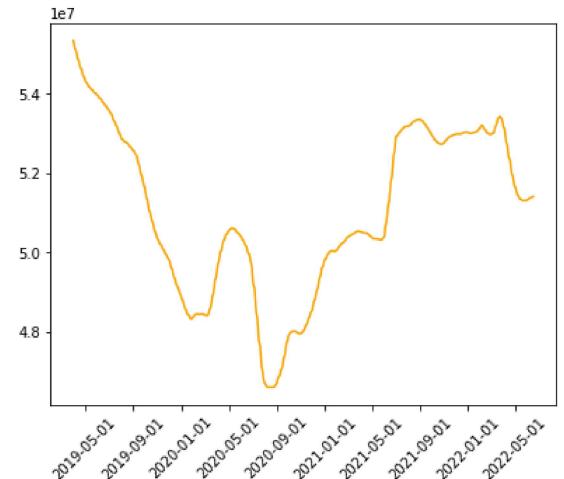
```

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
DINO	1.003531	47.77	51415267.1875	0.742624	0.504978	0.561898

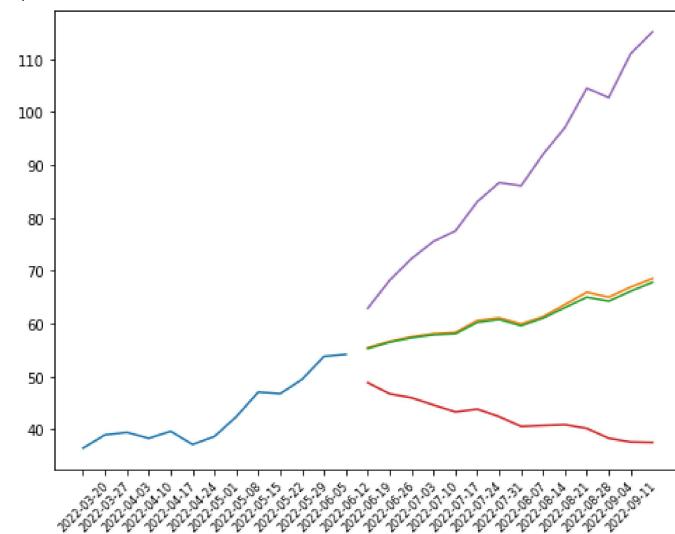
	l axis	r axis
blue	symbol	magenta sector
green	trailing_1yr_max	cyan index
red	trailing_1yr_min	
orange	30d_vol_2yr	
black	risk_trend_factor/linear	
yellow	supply_trend_1yr	

6/17/22, 10:15 AM

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -70.88999938964844
Index Volume Factor: 0.5662453634524328
Index Risk Trend Factor: -4.411325496943257



ets next 13 weeks
inner cv scores:
best model: ['mul', 'mul', False]
best inner cv score, sdev (11 folds): 72.576460284287 85.73941116506437
test cv mean error, stdev (10 folds): 78.90488809801519 87.44049172644745
sell date: 2022-09-18
expected return: 0.4346881252397488
discounted return: 0.003888697258628948
quarter return: 1.4291306687260636



```

symbol: MRO
sector: Energy
Index: SP500
vol_30d_2yr: 490913172.265625
Sector 1YMF: 6.459999084472656
1YMF: 6.459999084472656
risk trend factor: 0.6217515185815937
    beta currentRatio debtToEquity dividendRate dividendYield \
MRO 2.570326      1.103     36.547      0.32      0.0114

    earningsGrowth      ebitda ebitdaMargins forwardPE freeCashflow \
MRO 13.833 3833999872      0.61789 5.767605 1898625024

    grossMargins grossProfits heldPercentInstitutions      industry \
MRO 0.78646 4355000000      0.80251 Oil & Gas E&P

    marketCap operatingCashflow operatingMargins payoutRatio pegRatio \
MRO 17387968512      3684000000      0.28316      0.0769      0.54

    priceToBook priceToSalesTrailing12Months profitMargins quickRatio \
MRO 1.549962      2.802251      0.34698      1.051

    returnOnAssets returnOnEquity revenueGrowth revenuePerShare sector \
MRO 0.06065      0.1954      0.499      8.035 Energy

    sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
MRO 707691008      0.85 682000000      0.964 4153999872

    totalRevenue trailingPE
MRO 6205000192      8.825431

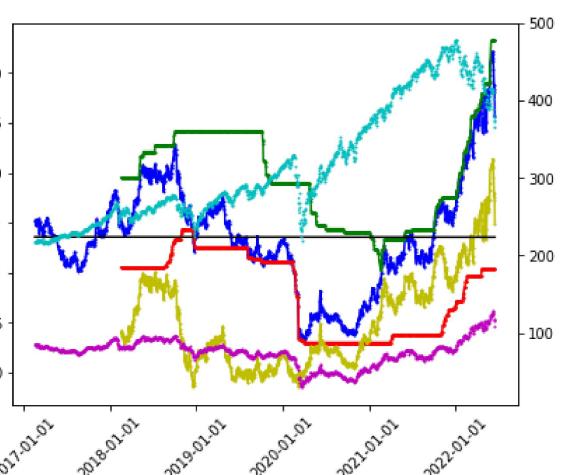
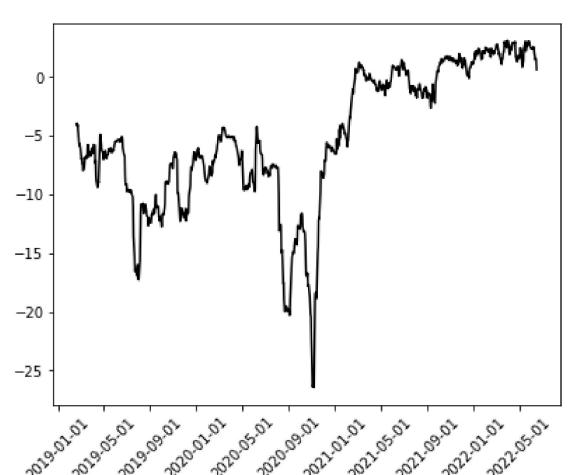
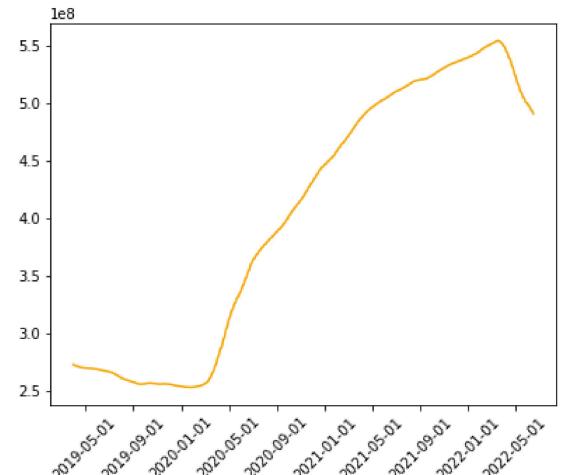
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	25.66	25.772469	29.609365	33.446261	26.939592	2.398748	22.142097	31.737087

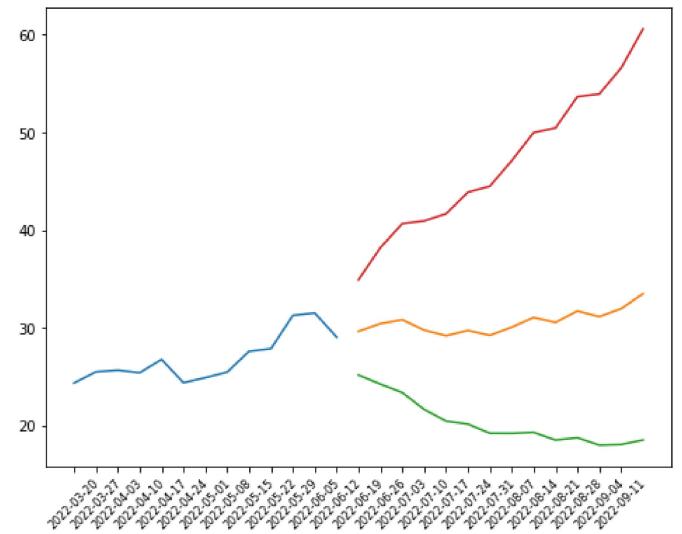
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
MRO	0.917749	25.66	490913172.265625	0.743138	0.862619	0.540113

l axis	r axis
legend	legend
blue symbol	magenta sector
green trailing_1yr_max	cyan index
red trailing_1yr_min	
orange 30d_vol_2yr	
black risk_trend_factor/linear	
yellow supply_trend_1yr	

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -285.47003173828125
Index Volume Factor: 1.1872171829536644
Index Risk Trend Factor: -3.322122130654123



```
ets next 13 weeks
inner cv scores:
best model: ['add', 'add', False]
best inner cv score, sdev (11 folds): 12.255532988040612 17.95164962742751
test cv mean error, stdev (10 folds): 13.299976731493661 18.506446200693375
sell date: 2022-09-18
expected return: 0.304604780251799
discounted return: 0.002863232581788777
quarter return: 1.3008800580845001
```



```
['options', ('2022-07-15', '2022-09-16', '2023-01-20', '2024-01-19')]
['sustainability', Value]
```

```
2022-5
palmOil False
controversialWeapons False
gambling False
socialScore 10.01
nuclear False
furLeather False
alcoholic False
gmo False
catholic False
socialPercentile None
peerCount 66
governanceScore 8.13
environmentPercentile None
animalTesting False
tobacco False
totalEsg 42.05
highestControversy 2
esgPerformance LEAD_PERF
coal False
pesticides False
adult False
percentile 90.8
peerGroup Oil & Gas Producers
smallArms False
environmentScore 23.91
governancePercentile None
militaryContract False]
```

```
symbol: MTDR
sector: Energy
Index: SP400
vol_30d_2yr: 48834102.9296875
Sector 1YMF: 14.820003509521484
1YMF: 14.820003509521484
risk trend factor: 0.6159603081184883
```

```
beta currentRatio debtToEquity dividendRate dividendYield \
MTDR 3.830762 0.997 64.085 0.2 0.003
```

```
earningsGrowth ebitda ebitdaMargins forwardPE freeCashflow \
MTDR 2.392 1377725952 0.67726 6.607179 33695376
```

```
grossMargins grossProfits heldPercentInstitutions industry \
MTDR 0.85318 1462239000 0.94319 Oil & Gas E&P
```

```
marketCap operatingCashflow operatingMargins payoutRatio pegRatio \
MTDR 7609612288 1212914048 0.49636 0.0245 0.57
```

```
priceToBook priceToSalesTrailing12Months profitMargins quickRatio \
MTDR 3.590058 3.740739 0.35956 0.801
```

```
returnOnAssets returnOnEquity revenueGrowth revenuePerShare sector \
MTDR 0.15195 0.40598 0.966 17.345 Energy
```

```
sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
MTDR 118125000 4.68 63001000 0.533 1497975040
```

```
totalRevenue trailingPE
MTDR 2034253952 10.514118
```

```
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper
```

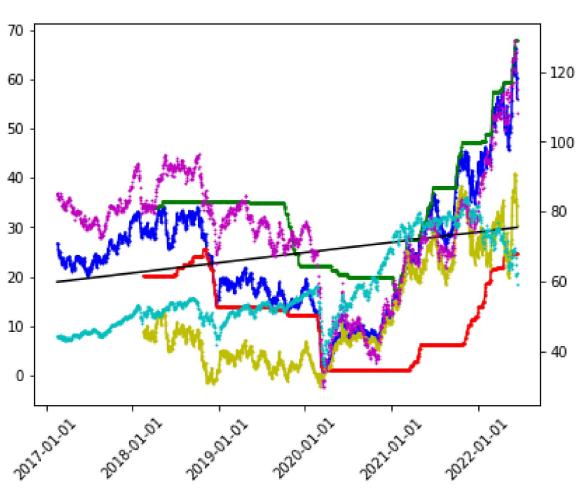
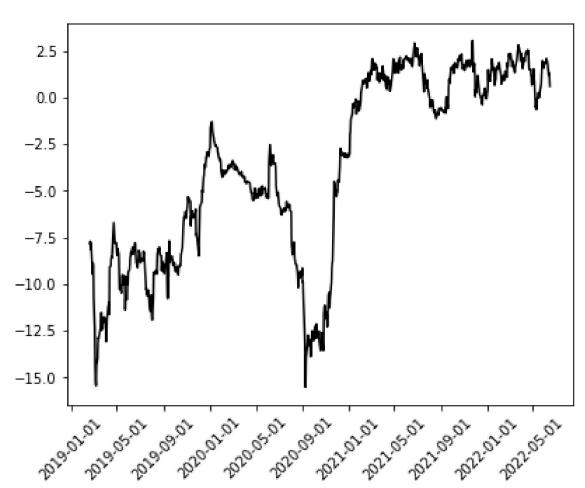
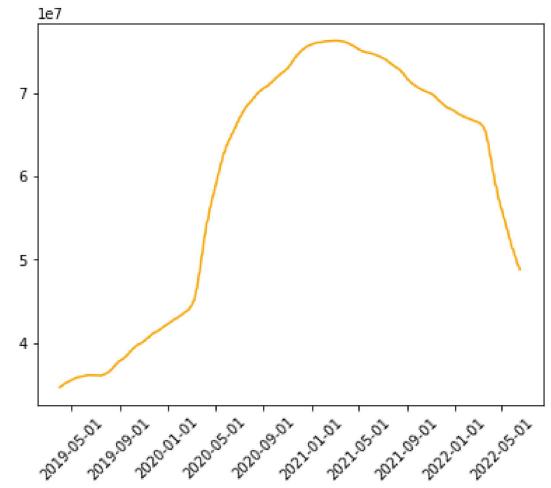
```
2022-06-16 56.040001 48.109737 59.192857 70.275978 55.063175 5.230673 44.601828 65.524522
```

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
MTDR	0.642698	56.040001	48834102.929688	0.809075	0.921632	0.464965

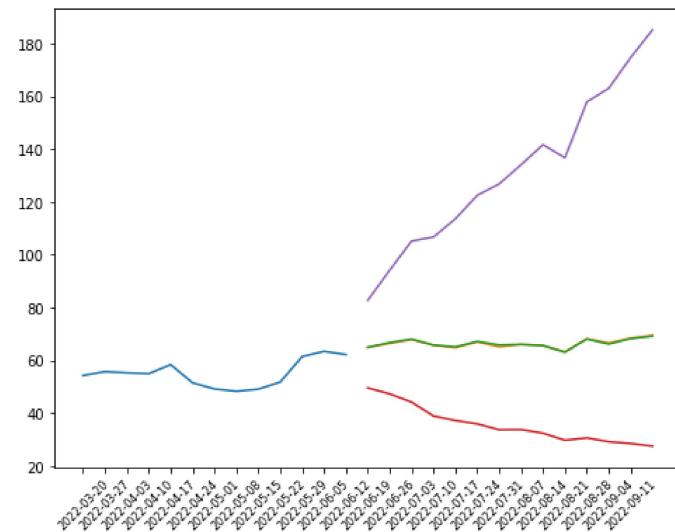
I axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

6/17/22, 10:15 AM

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -70.88999938964844
Index Volume Factor: 0.5662453634524328
Index Risk Trend Factor: -4.411325496943257



ets next 13 weeks
inner cv scores:
best model: ['mul', None]
best inner cv score, sdev (11 folds): 57.85716415916249 62.82249472903784
test cv mean error, stdev (10 folds): 63.3976024234568 63.27460239490576
sell date: 2022-09-18
expected return: 0.23860812589271907
discounted return: 0.002303598355273051
quarter return: 1.235761427899895



AnalyzeSP1500

```
[‘options’, (‘2022-06-17’, ‘2022-07-15’, ‘2023-01-20’)]
symbol: ROCC
sector: Energy
Index: SP600
vol_30d_2yr: 12003625.0
Sector 1YMF: 14.429996490478516
1YMF: 14.429996490478516
risk trend factor: 0.6123746319405766
    beta currentRatio debtToEquity      ebitda ebitdaMargins forwardPE \
ROCC  2.866152      0.497     80.978   323780000      0.45632  4.088899

    freeCashflow grossMargins grossProfits heldPercentInstitutions \
ROCC  111158752      0.9232   508729000      0.83063

    industry marketCap operatingCashflow operatingMargins \
ROCC  Oil & Gas E&P 1051397696      390172992      0.23271

    payoutRatio pegRatio priceToBook priceToSalesTrailing12Months \
ROCC      0      0.14     3.345455      1.4818

    profitMargins quickRatio returnOnAssets returnOnEquity revenueGrowth \
ROCC  0.06175      0.404     0.08139     0.19205      1.903

    revenuePerShare sector sharesOutstanding shortRatio totalCash \
ROCC      39.08 Energy      21163400      2.3   6358000

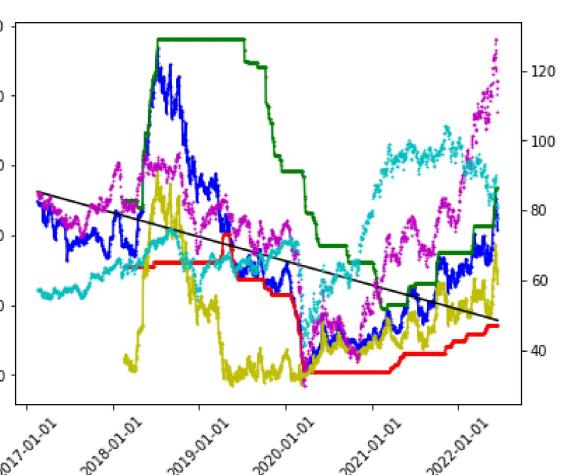
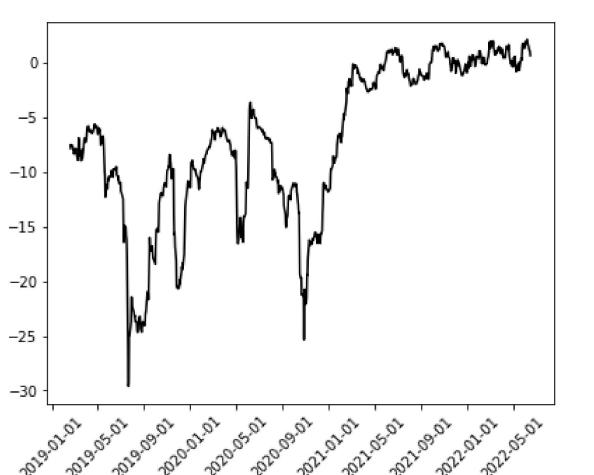
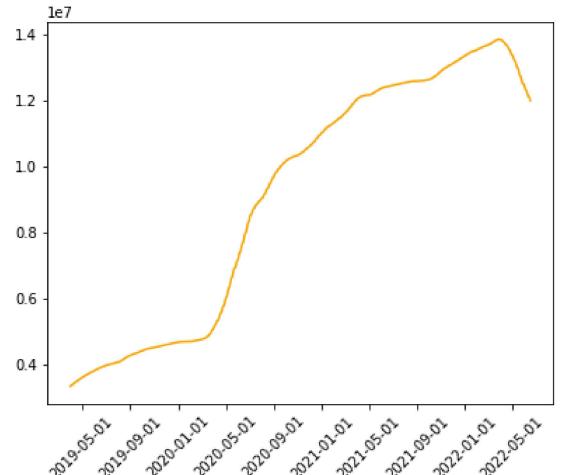
    totalCashPerShare totalDebt totalRevenue trailingPE
ROCC      0.3  525808992  709540992  21.113474
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSD	90d_lower	90d_upper
2022-06-16	41.779999	31.141411	43.043286	54.945161	37.837937	5.399882	27.038173	48.637701

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
ROCC	1.057805	41.779999	12003625.0	0.749947	0.601456	0.578912

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

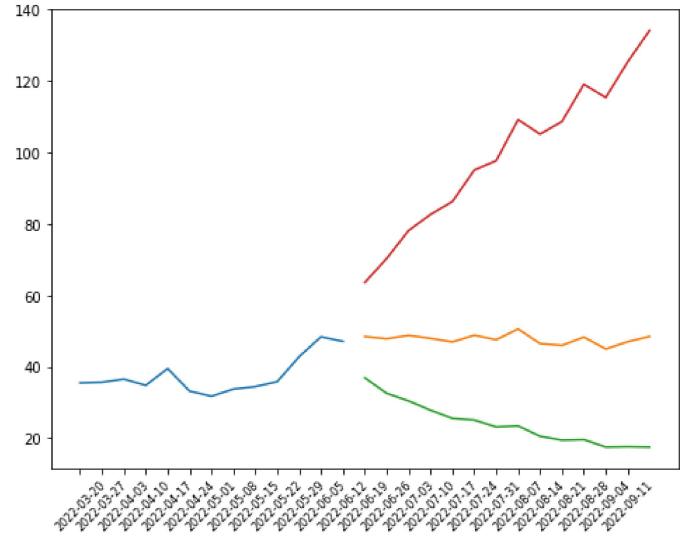
Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -79.04000854492188
Index Volume Factor: 1.243664249470528
Index Risk Trend Factor: -4.590013818867828



```

ets next 13 weeks
inner cv scores:
best model: ['add', None]
best inner cv score, sdev (11 folds): 101.39949811580854 132.16950523588272
test cv mean error, stdev (10 folds): 108.73062213924891 136.47145070932157
sell date: 2022-08-07
expected return: 0.2110879822667285
discounted return: 0.003762336641273789
quarter return: 1.4126755527677608

```



```

['options', ('2022-07-15', '2022-12-16')]
symbol: VLO
sector: Energy
Index: SP500
vol_30d_2yr: 90493904.4921875
Sector 1YMF: 28.05999755859375
1YMF: 28.05999755859375
risk trend factor: 0.5600798086468606
    beta currentRatio debtToEquity dividendRate dividendYield \
VLO 1.762704      1.178      64.483      3.92      0.0306

```

```

        ebitda ebitdaMargins forwardPE freeCashflow grossMargins \
VLO 6672999936      0.05306 10.321334 4647625216      0.05998

```

```

grossProfits heldPercentInstitutions           industry \
VLO 5487000000      0.80541 Oil & Gas Refining & Marketing

```

```

marketCap operatingCashflow operatingMargins payoutRatio pegRatio \
VLO 47975763968      6498999808      0.0341      0.6312      0.36

```

```

priceToBook priceToSalesTrailing12Months profitMargins quickRatio \
VLO 2.549113          0.381472      0.02019      0.7

```

```

returnOnAssets returnOnEquity revenueGrowth revenuePerShare sector \
VLO 0.04701      0.14702      0.886      308.815 Energy

```

```

sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
VLO 408096000      1.46 2638000128      6.464 13160999936

```

```

totalRevenue trailingPE
VLO 125765001216 18.924662

```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSD	90d_lower	90d_upper
2022-06-16	118.739998	117.280841	131.546349	145.811857	115.991905	14.921167	86.14957	145.83424

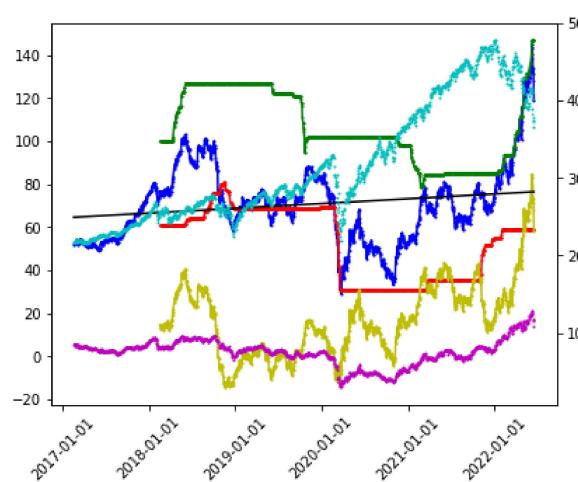
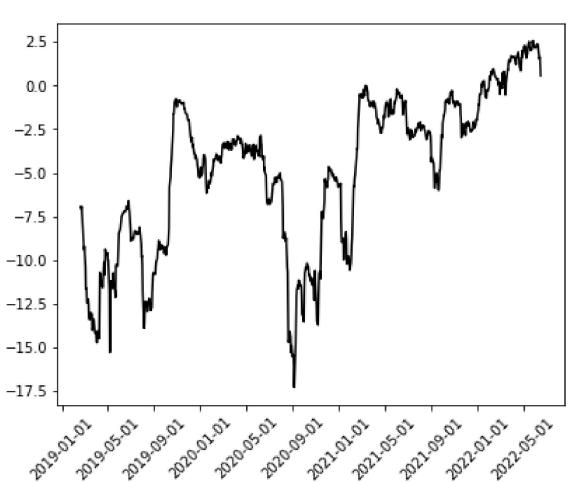
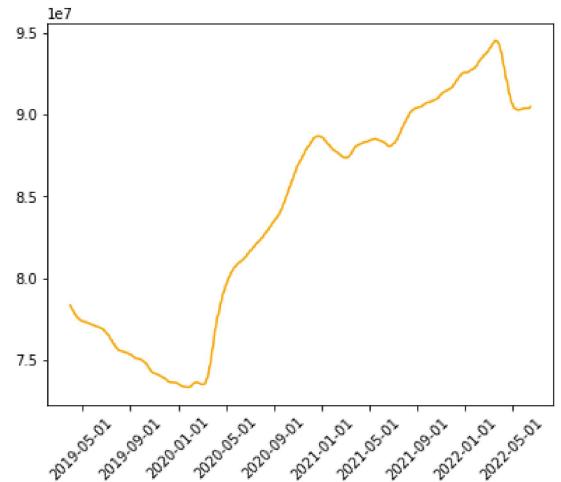
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
---------------	----------	-------------	---------	-----	-------

VLO	1.276553	118.739998	90493904.492188	0.747957	0.703807	0.534876
-----	----------	------------	-----------------	----------	----------	----------

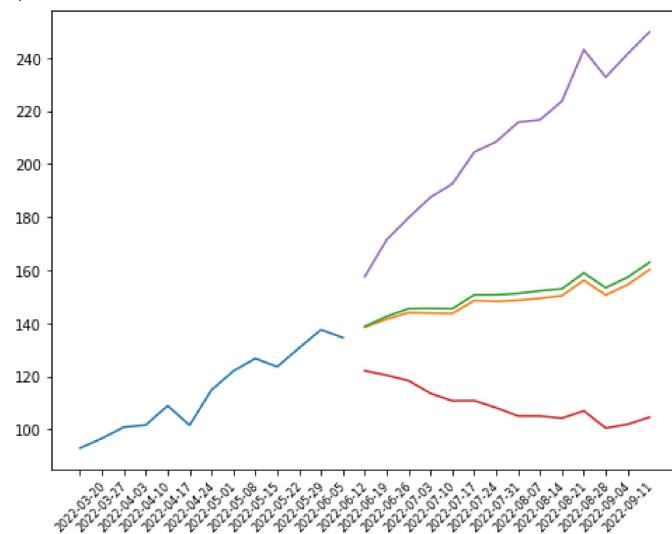
l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

6/17/22, 10:15 AM

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -285.47003173828125
Index Volume Factor: 1.1872171829536644
Index Risk Trend Factor: -3.322122130654123



ets next 13 weeks
inner cv scores:
best model: ['mul', 'add', False]
best inner cv score, sdev (11 folds): 270.7288036125925 325.1657047316831
test cv mean error, stdev (10 folds): 289.08789990695357 335.55683349127474
sell date: 2022-09-18
expected return: 0.3490525834545268
discounted return: 0.0032245701000064297
quarter return: 1.3447164509936733



6/17/22, 10:15 AM

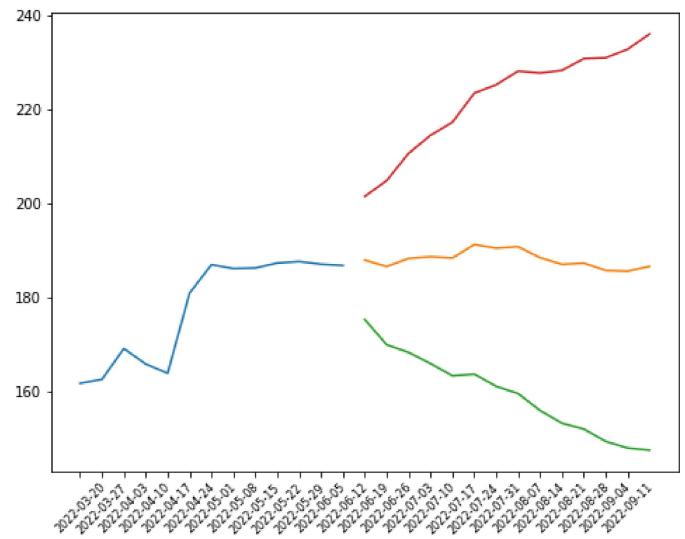
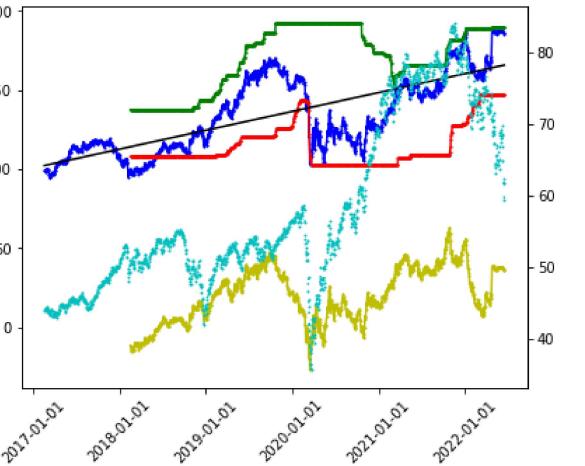
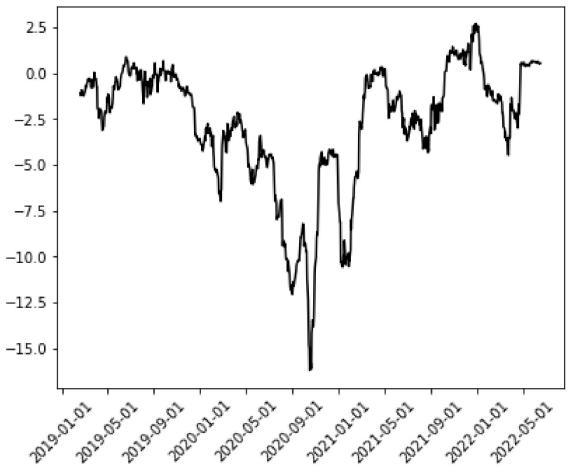
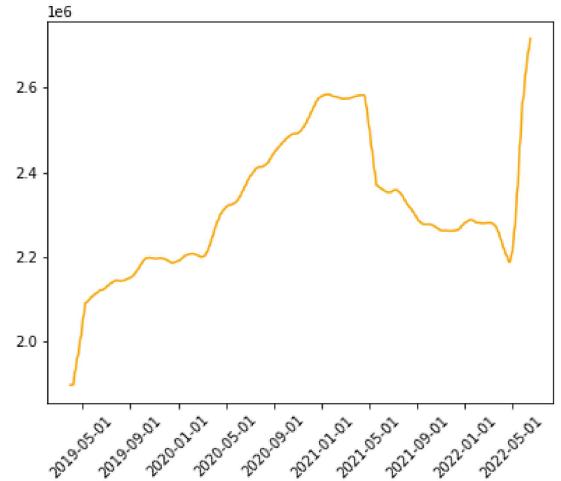
AnalyzeSP1500

```
['options', ('2022-06-17', '2023-01-20', '2024-01-19')]  
[ 'sustainability',  
  2022-5  
  palmOil          False  
  controversialWeapons  False  
  gambling          False  
  socialScore        7.23  
  nuclear            False  
  furLeather         False  
  alcoholic          False  
  gmo                False  
  catholic           False  
  socialPercentile   None  
  peerCount          39  
  governanceScore    4.98  
  environmentPercentile  None  
  animalTesting      False  
  tobacco             False  
  totalEsg           30.94  
  highestControversy 3  
  esgPerformance    OUT_PERF  
  coal               False  
  pesticides          False  
  adult               False  
  percentile          65.34  
  peerGroup           Refiners & Pipelines  
  smallArms           False  
  environmentScore   18.74  
  governancePercentile  None  
  militaryContract   False]  
symbol: PSB  
sector: error  
sector: error  
Index: SP400  
vol_30d_2yr: 2715957.6171875  
Sector 1YMF: 12.310012817382812  
1YMF: 12.310012817382812  
risk trend factor: 0.5525140705493028  
Empty DataFrame  
Columns: []  
Index: [PSB]
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSD	90d_lower	90d_upper
2022-06-16	185.740005	185.754726	186.945397	188.136069	178.58127	10.681952	157.217366	199.945174

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
PSB	2.625777	185.740005	2715957.617188	0.949237	0.808632	0.476969

	I axis	r axis
blue	legend	legend
green	symbol	magenta
red	trailing_1yr_max	sector
orange	trailing_1yr_min	cyan
black	30d_vol_2yr	index
yellow	risk_trend_factor/linear	
Index 1YMF:	-70.88999938964844	
Index Volume Factor:	0.5662453634524328	
Index Risk Trend Factor:	-4.411325496943257	



```
symbol: CIVI
sector: Energy
Index: SP600
vol_30d_2yr: 11253325.390625
Sector 1YMF: 14.15999984741211
1YMF: 14.15999984741211
risk trend factor: 0.4785399779962
    beta currentRatio debtToEquity dividendRate dividendYield      ebitda \
CIVI  1.69646       0.505     11.399      1.85      0.0222  910931008
          ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
CIVI      0.54408   5.807773   855249152     0.79951   731177000
          heldPercentInstitutions      industry      marketCap operatingCashflow \
CIVI      1.04378   Oil & Gas E&P   7110930432      764176000
          operatingMargins payoutRatio pegRatio priceToBook \
CIVI      0.26443     0.2792      0.4     1.532868
          priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
CIVI      4.247195     0.16167     0.477     0.06714
          returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \
CIVI      0.09524     10.028     31.498   Energy     84967504
          shortRatio totalCash totalCashPerShare totalDebt totalRevenue \
CIVI      6.57  154348992      1.817  528631008   1674264960
          trailingPE
CIVI  16.671316
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	66.389999	60.798991	74.142698	87.486406	65.525238	7.696477	50.132283	80.918193

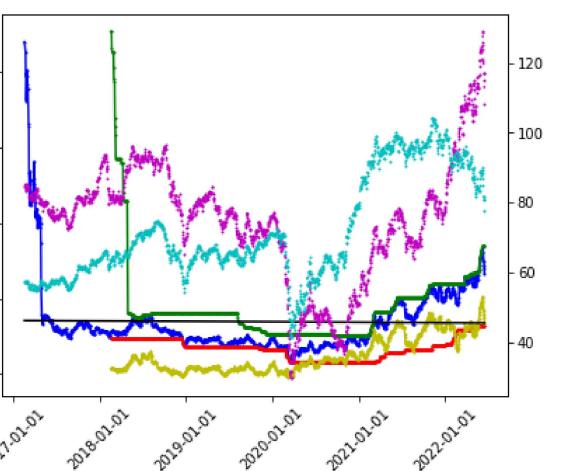
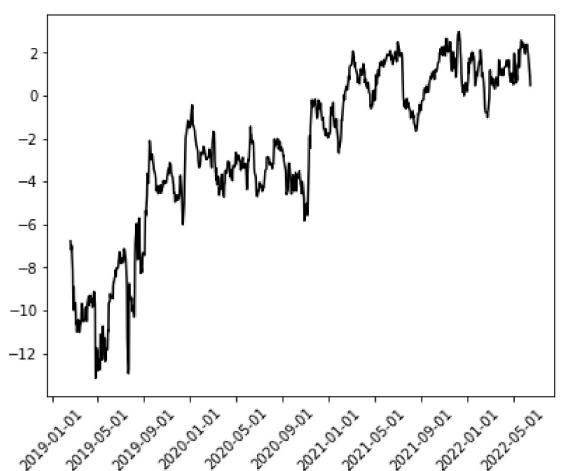
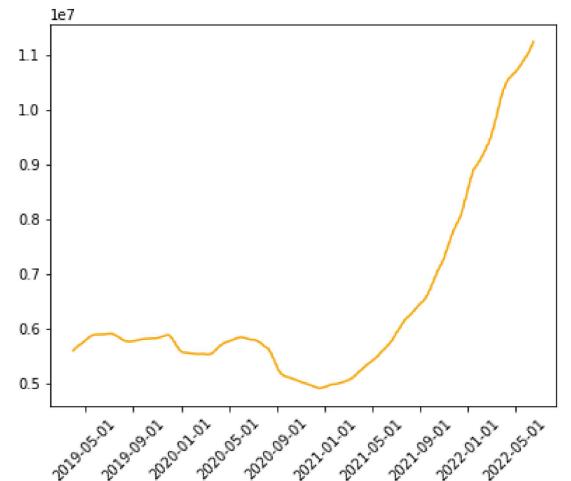
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
CIVI	1.620286	66.389999	11253325.390625	0.740317	0.000353	0.475979

ADFFuller H0 rejected @ .05, Mean Reverting TS
Month Mean Reverting buy signal

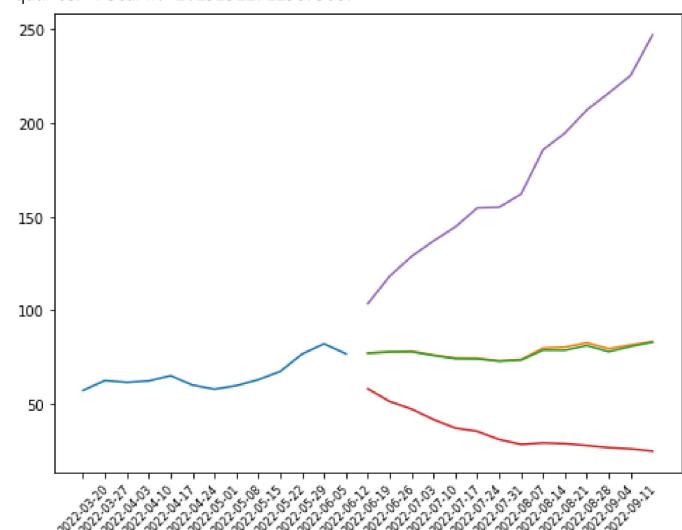
I axis r axis

legend	legend
blue symbol	magenta sector
green trailing_1yr_max	cyan index
red trailing_1yr_min	
orange 30d_vol_2yr	
black risk_trend_factor/linear	
yellow supply_trend_1yr	

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -79.04000854492188
Index Volume Factor: 1.243664249470528
Index Risk Trend Factor: -4.590013818867828



ets next 13 weeks
inner cv scores:
best model: ['add', 'mul', False]
best inner cv score, sdev (11 folds): 51.55359316545473 47.00561058314788
test cv mean error, stdev (10 folds): 55.55115663379006 47.4836507101994
sell date: 2022-09-18
expected return: 0.25538920657316877
discounted return: 0.002448645189316645
quarter return: 1.2523227125875087



```
[options, ('2022-07-15', '2022-12-16')]
symbol: WRB
sector: Financial Services
Index: SP500
vol_30d_2yr: 24747816.40625
Sector 1YMF: 2.736675262451172
1YMF: 2.736675262451172
risk trend factor: 0.37904083099097574
    beta currentRatio debtToEquity dividendRate dividendYield \
WRB 0.741517 0.453 44.413 0.35 0.0049

earningsGrowth ebitda ebitdaMargins forwardPE freeCashflow \
WRB 1.585 1969144064 0.19279 15.017057 2491864832

grossMargins grossProfits heldPercentInstitutions \
WRB 0.44661 4029355000 0.69611

industry marketCap operatingCashflow \
WRB Insurance-Property & Casualty 18677542912 2350679040

operatingMargins payoutRatio pegRatio priceToBook \
WRB 0.18096 0.07 1.94 2.720776

priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
WRB 1.828621 0.13546 0.278 0.03724

returnOnEquity revenueGrowth revenuePerShare sector \
WRB 0.20909 0.352 36.85 Financial Services

sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
WRB 265192992 1.22 3303750912 12.458 3059073024

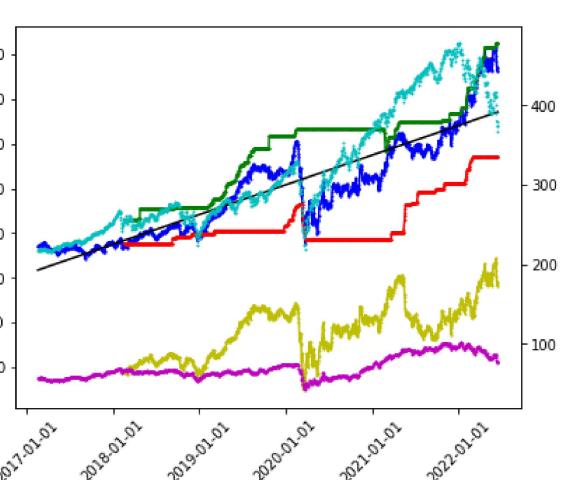
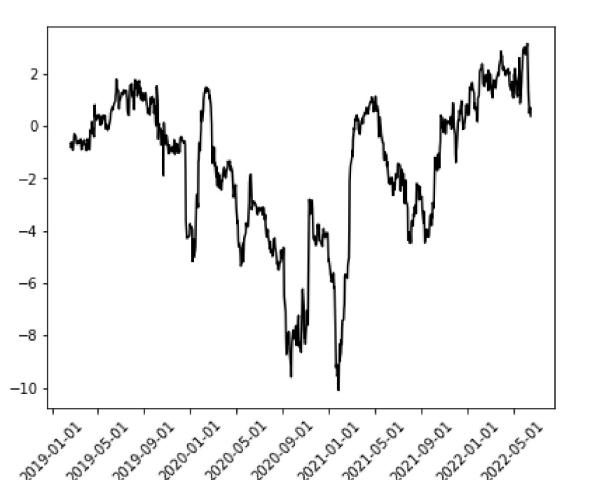
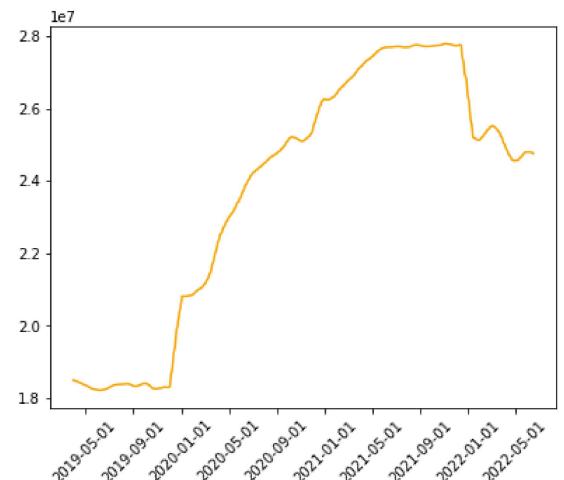
totalRevenue trailingPE
WRB 10214005760 14.222536
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	66.300003	65.216512	68.971905	72.727298	67.901429	1.790878	64.319673	71.483184

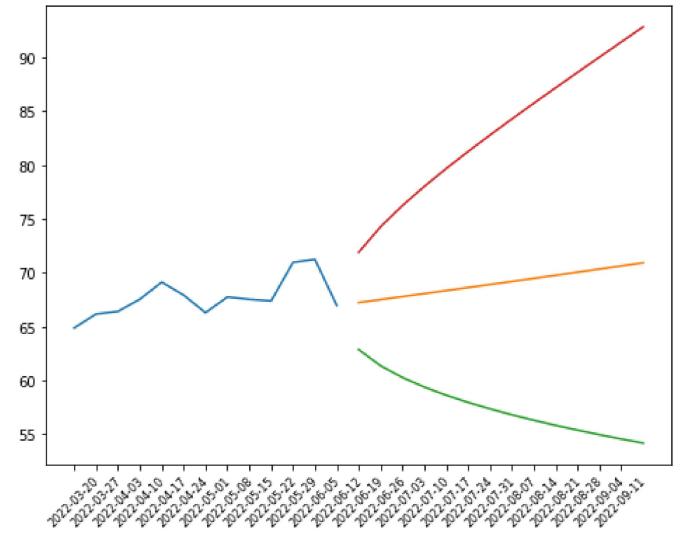
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
WRB	1.151774	66.300003	24747816.40625	0.831215	0.938034 0.452933

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

Sector 1YMF: -73.55999755859375
Sector Volume Factor: 1.2176833027526361
Sector Risk Trend Factor: -3.976216084248311
Index 1YMF: -285.47003173828125
Index Volume Factor: 1.1872171829536644
Index Risk Trend Factor: -3.322122130654123



```
ets next 13 weeks
inner cv scores:
best model: [None, 'add', False]
best inner cv score, sdev (11 folds): 30.198218960642738 55.956222246869544
test cv mean error, stdev (10 folds): 32.81659318427742 58.0413126000435
sell date: 2022-09-18
expected return: 0.06968434856517591
discounted return: 0.0007246022212197278
quarter return: 1.068909814139557
```



```

['options', ('2022-07-15',)]
['sustainability',           Value
2022-5
palmOil          False
controversialWeapons False
gambling          False
socialScore       7.83
nuclear           False
furLeather        False
alcoholic          False
gmo                False
catholic           False
socialPercentile  None
peerCount          96
governanceScore   12.16
environmentPercentile None
animalTesting     False
tobacco            False
totalEsg           21.95
highestControversy 1
esgPerformance    AVG_PERF
coal               False
pesticides         False
adult              False
percentile         31.22
peerGroup          Insurance
smallArms          False
environmentScore   1.95
governancePercentile None
militaryContract  False]
symbol: PDCE
sector: Energy
Index: SP400
vol_30d_2yr: 24816581.0546875
Sector 1YMF: 9.250007629394531
1YMF: 9.250007629394531
risk trend factor: 0.3476139578063814
    beta currentRatio debtToEquity dividendRate dividendYield \
PDCE  2.747277      0.575      34.654      1.4      0.0164

    ebitda ebitdaMargins forwardPE freeCashflow grossMargins \
PDCE  1255468032      0.45227    4.092647    598676224    0.89205

    grossProfits heldPercentInstitutions industry marketCap \
PDCE  2111095000      0.97868    Oil & Gas E&P  8288278016

    operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
PDCE  1683784960      0.21746      0.1225      0.17      2.888328

    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
PDCE  2.985751      0.1799      0.555      0.06877

    returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \
PDCE  0.18662      0.877      28.416    Energy      99272704

    shortRatio totalCash totalCashPerShare totalDebt totalRevenue \
PDCE  6.72      171156992      1.794      958110016    2775943936

    trailingPE
PDCE  16.581926

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper
2022-06-16 72.650002 63.339915 77.245238 91.150561 73.864444 5.654845 62.554753 85.174135

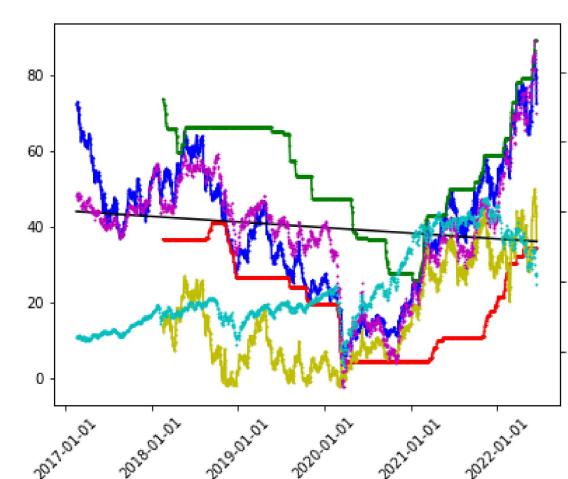
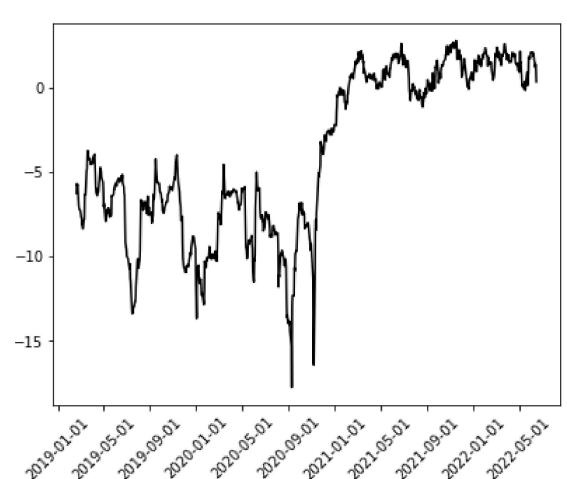
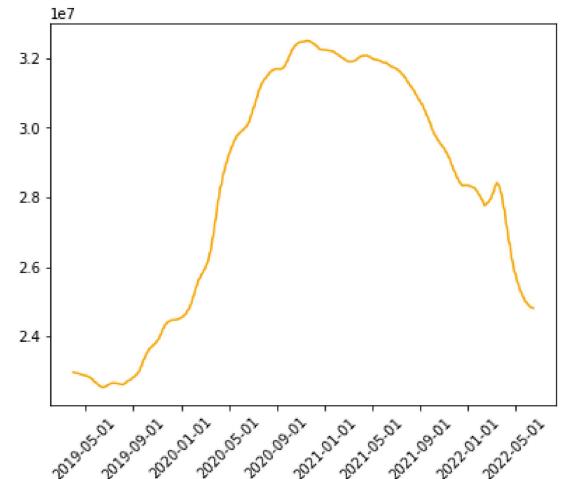
volume_factor latest_p vol_30d_2yr pct_2yr adf hurst
PDCE  1.200705 72.650002 24816581.054688 0.789239 0.542285 0.491711

```

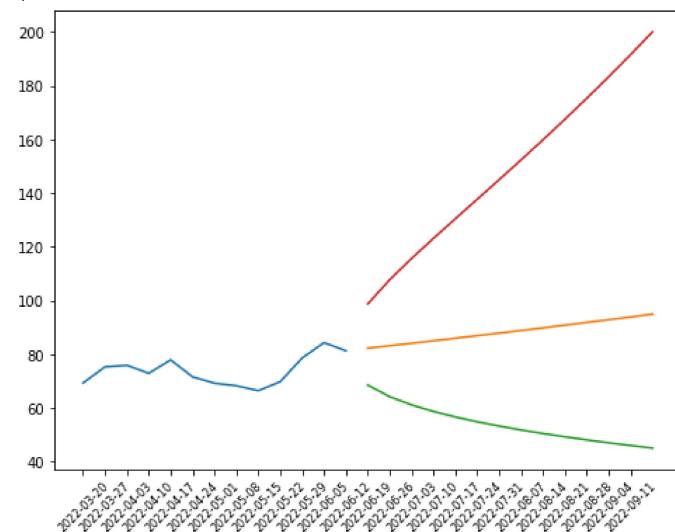
	I axis	r axis
legend	legend	legend
blue symbol	magenta sector	
green trailing_1yr_max	cyan index	
red trailing_1yr_min		
orange 30d_vol_2yr		
black risk_trend_factor/linear		
yellow supply_trend_1yr		

6/17/22, 10:15 AM

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -70.88999938964844
Index Volume Factor: 0.5662453634524328
Index Risk Trend Factor: -4.411325496943257



ets next 13 weeks
inner cv scores:
best model: [None, 'add', False]
best inner cv score, sdev (11 folds): 72.43226004354307 70.42731668177287
test cv mean error, stdev (10 folds): 73.99424076218664 73.68292785077412
sell date: 2022-09-18
expected return: 0.3062429711575351
discounted return: 0.002876764978065882
quarter return: 1.3024959962913203



```
[options, ('2022-07-15', '2022-12-16')]
symbol: FANG
sector: Energy
Index: SP500
vol_30d_2yr: 60309967.578125
Sector 1YMF: 12.949966430664062
1YMF: 12.949966430664062
risk trend factor: 0.30484852653737765
    beta currentRatio debtToEquity dividendRate dividendYield \
FANG 2.181941      0.72      42.218      2.8      0.0209

    earningsGrowth      ebitda ebitdaMargins forwardPE freeCashflow \
FANG      2.278 5041999872      0.65762 5.376768      953625024

    grossMargins grossProfits heldPercentInstitutions      industry \
FANG      0.86683 5577000000      0.91744 Oil & Gas E&P

    marketCap operatingCashflow operatingMargins payoutRatio pegRatio \
FANG 22026260480      4572000256      0.48611      0.1272      0.35

    priceToBook priceToSalesTrailing12Months profitMargins quickRatio \
FANG 1.747781      2.872866      0.35751      0.656

    returnOnAssets returnOnEquity revenueGrowth revenuePerShare sector \
FANG 0.10278      0.22396      1.034      42.596 Energy

    sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
FANG 175592000      2.63 149000000      0.839 5848000000

    totalRevenue trailingPE
FANG 7666999808      8.273861
```

	Adj	Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	133.679993	126.158293	146.608572	167.058851	139.299841	9.296925	120.705991	157.893691	

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
FANG	1.031604	133.679993	60309967.578125	0.793954	0.668762	0.470333

l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

Sector 1YMF: 14.330001831054688

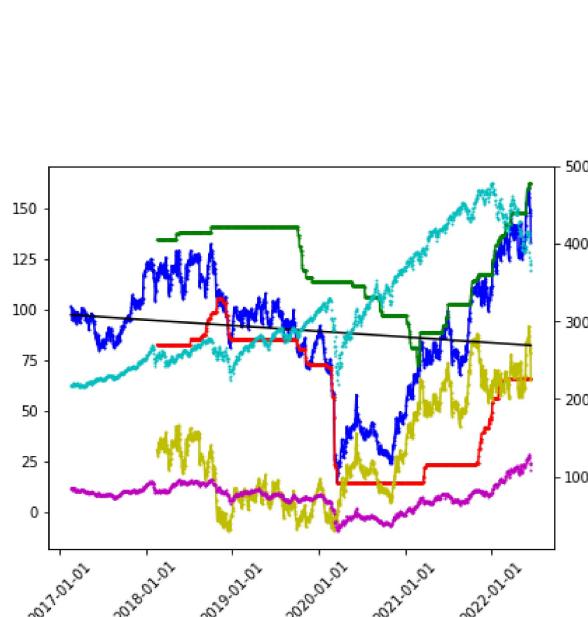
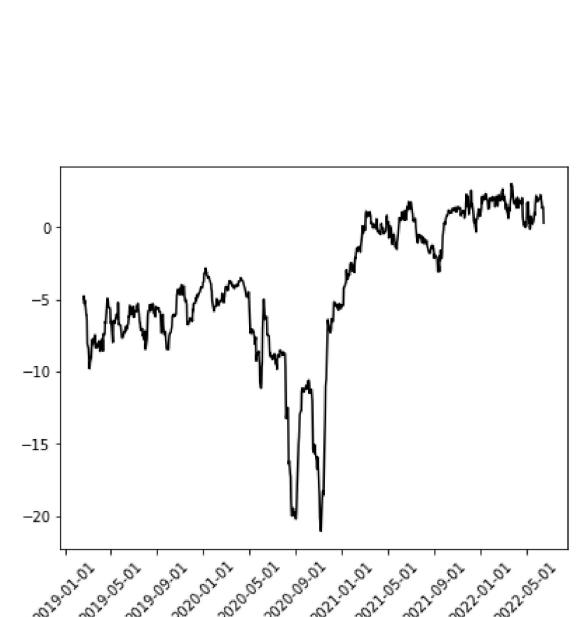
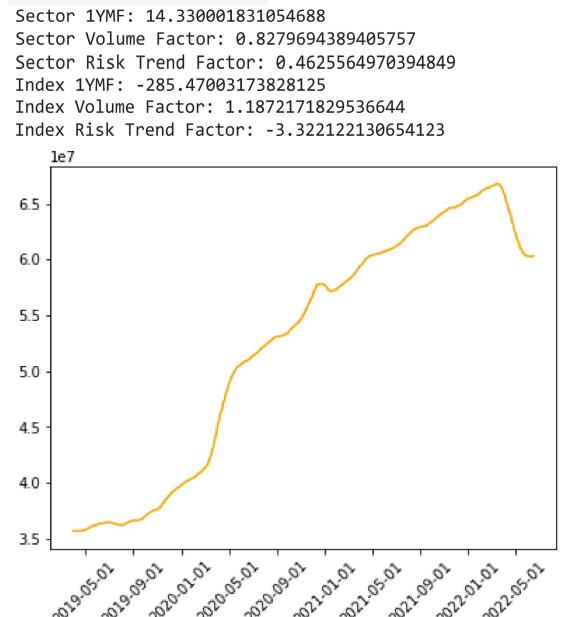
Sector Volume Factor: 0.8279694389405757

Sector Risk Trend Factor: 0.4625564970394849

Index 1YMF: -285.47003173828125

Index Volume Factor: 1.1872171829536644

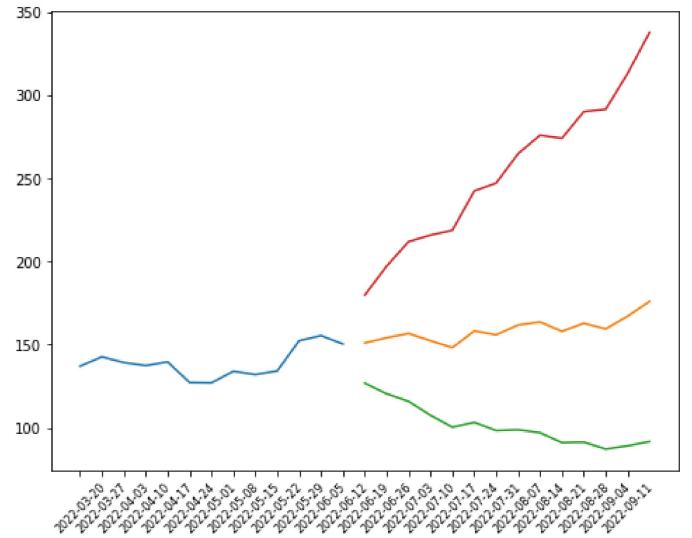
Index Risk Trend Factor: -3.322122130654123



```

ets next 13 weeks
inner cv scores:
best model: ['add', None]
best inner cv score, sdev (11 folds): 457.4652274706103 453.0765976406002
test cv mean error, stdev (10 folds): 492.34353754116444 460.8957296259948
sell date: 2022-09-18
expected return: 0.31657770133492685
discounted return: 0.0029617506689827433
quarter return: 1.312689841319238

```



```

['options', ('2022-06-17', '2023-01-20', '2024-01-19')]
symbol: MANT
sector: Technology
Index: SP600
vol_30d_2yr: 4412490.234375
Sector 1YMF: 5.340003967285156
1YMF: 5.340003967285156
risk trend factor: 0.303581737515056
    beta currentRatio debtToEquity dividendRate dividendYield \
MANT 0.737745      1.584     23.665      1.64      0.02
earningsGrowth      ebitda ebitdaMargins forwardPE freeCashflow \
MANT -0.07 264191008      0.10344   25.047745     89507376
grossMargins grossProfits heldPercentInstitutions      industry \
MANT 0.14856 379411000      0.71066 Software--Application
marketCap operatingCashflow operatingMargins payoutRatio pegRatio \
MANT 3867116288      212171008      0.07374     0.4669      4.97
priceToBook priceToSalesTrailing12Months profitMargins quickRatio \
MANT 2.299301      1.514167      0.05365      1.462
returnOnAssets returnOnEquity revenueGrowth revenuePerShare      sector \
MANT 0.0485      0.08419      -0.007      62.85 Technology
sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
MANT 39355500      2.93 53374000      1.308 396480000
totalRevenue trailingPE
MANT 2553956096 28.230194
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper

```

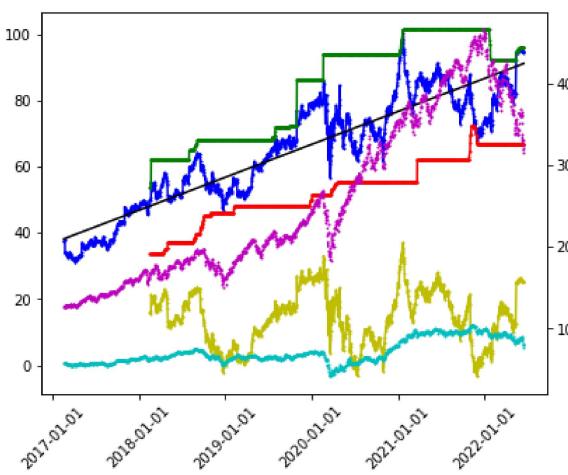
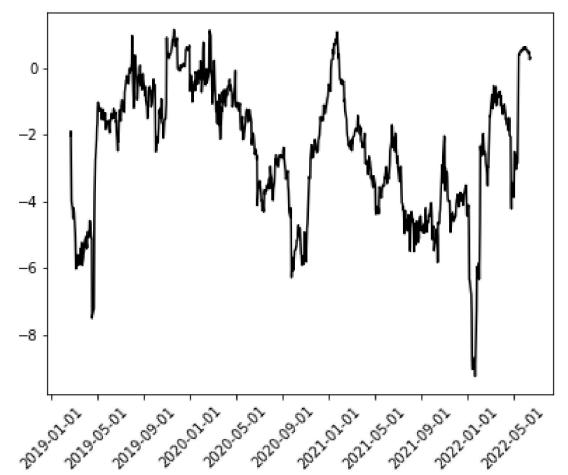
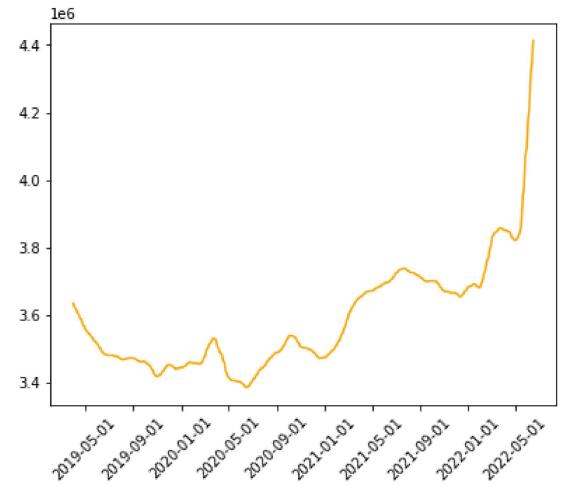
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	94.690002	94.152858	94.93635	95.719841	88.07254	5.500129	77.072281	99.072798

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
MANT	2.896006	94.690002	4412490.234375	0.831136	0.565273	0.363266

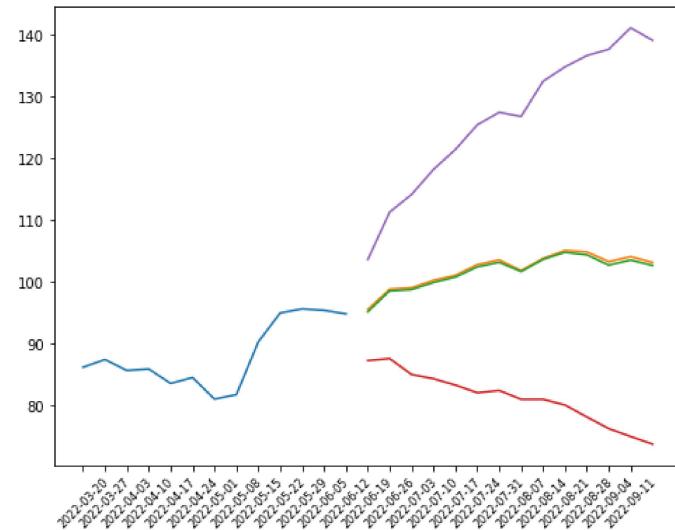
l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		

6/17/22, 10:15 AM

Sector 1YMF: -374.97998046875
Sector Volume Factor: 1.137256537526499
Sector Risk Trend Factor: -4.4188079801718425
Index 1YMF: -79.04000854492188
Index Volume Factor: 1.243664249470528
Index Risk Trend Factor: -4.590013818867828



ets next 13 weeks
inner cv scores:
best model: ['mul', 'mul', False]
best inner cv score, sdev (11 folds): 58.17583490436807 23.523585497775894
test cv mean error, stdev (10 folds): 55.63890437961787 23.192637782737986
sell date: 2022-08-21
expected return: 0.10862475555817906
discounted return: 0.0015877250755631511
quarter return: 1.1571439643699222



```
[ 'options', ('2022-08-19',) ]
symbol: FCN
sector: Industrials
Index: SP400
vol_30d_2yr: 6861602.34375
Sector 1YMF: 5.3899993896484375
1YMF: 5.3899993896484375
risk trend factor: 0.2867020486544266
    beta currentRatio debtToEquity earningsGrowth ebitda \
FCN 0.449509      2.395     36.191      -0.098 347764992

    ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
FCN 0.1236 22.009373 171587632 0.31042 860715000

    heldPercentInstitutions industry marketCap \
FCN 1.07223 Consulting Services 5637372416

    operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
FCN 318288992 0.1075 0 3.02 3.541487

    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
FCN 2.00364 0.08167 2.147 0.06601

    returnOnEquity revenueGrowth revenuePerShare sector \
FCN 0.15126 0.054 83.929 Industrials

    sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
FCN 34288500 6.4 271143008 7.866 587020992

    totalRevenue trailingPE
FCN 2813564928 23.000841
```

	Adj	Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-16	162.949997	159.096915	165.289047	171.48118	162.142381	5.101274	151.939833	172.344928	

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
FCN	0.661624	162.949997	6861602.34375	0.874839	0.916688	0.405187

I axis r axis
legend **legend**
 blue symbol magenta sector
 green trailing_1yr_max cyan index

red trailing_1yr_min

orange 30d_vol_2yr

black risk_trend_factor/linear

yellow supply_trend_1yr

Sector 1YMF: -141.6699981689453

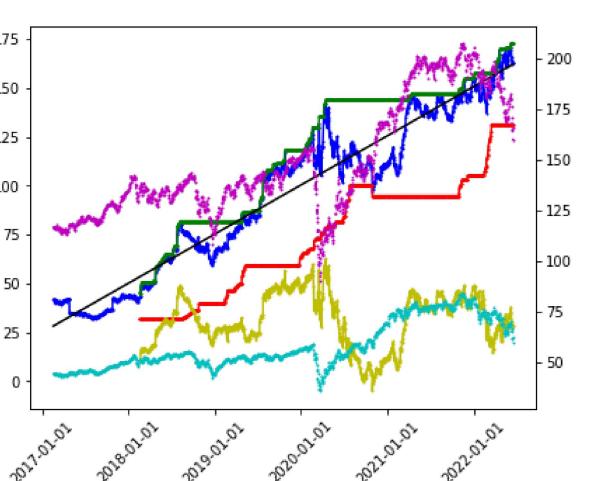
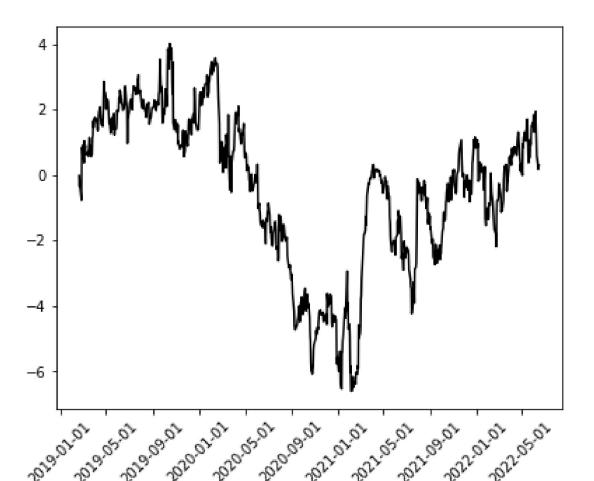
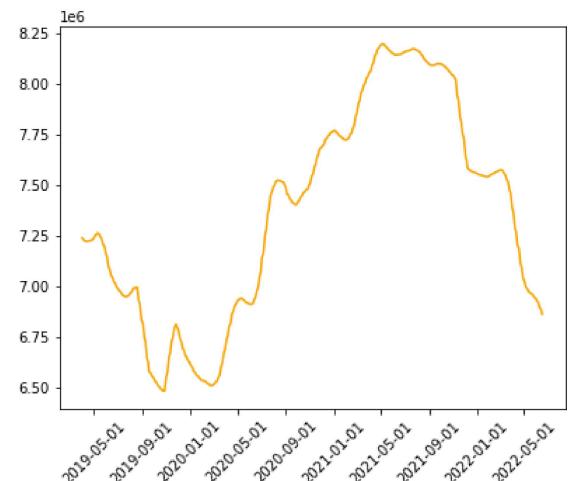
Sector Volume Factor: 0.8731518814579678

Sector Risk Trend Factor: -4.0477142333984375

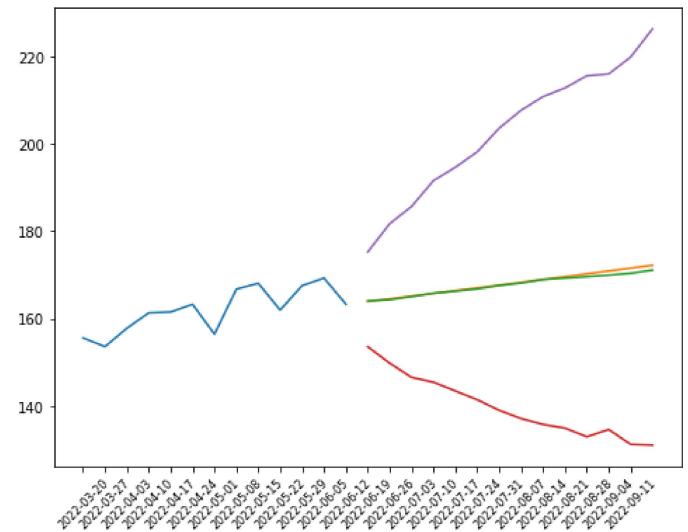
Index 1YMF: -70.88999938964844

Index Volume Factor: 0.5662453634524328

Index Risk Trend Factor: -4.411325496943257



```
ets next 13 weeks
inner cv scores:
best model: [None, 'mul', False]
best inner cv score, sdev (11 folds): 118.0983398047112 50.90102071587315
test cv mean error, stdev (10 folds): 116.6189746761398 53.05092522378669
sell date: 2022-09-18
expected return: 0.05665658999513497
discounted return: 0.0005927537047132336
quarter return: 1.0560306239304988
```



```
[ 'quarterly_balance_sheet', 2022-03-31 2021-12-31 2021-09-30 \
Intangible Assets 2.964700e+07 3.199000e+07 3.450400e+07
Total Liab 1.327273e+09 1.517588e+09 1.462621e+09
Total Stockholder Equity 1.622018e+09 1.583321e+09 1.544303e+09
Deferred Long Term Liab 7.000000e+05 9.000000e+05 1.000000e+06
Other Current Liab 4.011300e+07 9.977400e+07 3.627900e+07
Total Assets 2.949291e+09 3.100909e+09 3.006924e+09
Common Stock 3.450000e+05 3.430000e+05 3.430000e+05
Retained Earnings 1.756704e+09 1.698156e+09 1.659947e+09
Other Liab 2.630210e+08 2.662880e+08 2.652540e+08
Good Will 1.243972e+09 1.232791e+09 1.234023e+09
Treasury Stock -1.350310e+08 -1.288400e+08 -1.244770e+08
Other Assets 1.063720e+08 1.079430e+08 1.120850e+08
Cash 2.711430e+08 4.944850e+08 3.425270e+08
Total Current Liabilities 5.099300e+08 7.181160e+08 6.456220e+08
Other Stockholder Equity -1.350310e+08 -1.288400e+08 -1.244770e+08
Property Plant Equipment 3.479090e+08 3.581580e+08 3.578180e+08
Total Current Assets 1.221391e+09 1.370027e+09 1.268494e+09
Net Tangible Assets 3.483990e+08 3.185400e+08 2.757760e+08
Net Receivables 8.532330e+08 7.916280e+08 8.427910e+08
Long Term Debt 3.289360e+08 2.971580e+08 3.193550e+08
Accounts Payable 1.406570e+08 1.618700e+07 1.248700e+08
Capital Surplus NaN 1.366200e+07 8.490000e+06
Other Current Assets NaN 3.116300e+07 NaN
```

2021-06-30

```
Intangible Assets 3.765300e+07
Total Liab 1.449217e+09
Total Stockholder Equity 1.489210e+09
Deferred Long Term Liab 1.100000e+06
Other Current Liab 3.694400e+07
Total Assets 2.938427e+09
Common Stock 3.430000e+05
Retained Earnings 1.590467e+09
Other Liab 2.649410e+08
Good Will 1.240057e+09
Treasury Stock -1.058700e+08
Other Assets 1.061600e+08
Cash 2.568750e+08
Total Current Liabilities 5.625620e+08
Other Stockholder Equity -1.058700e+08
Property Plant Equipment 3.410950e+08
Total Current Assets 1.213462e+09
Net Tangible Assets 2.115000e+08
Net Receivables 8.782140e+08
Long Term Debt 3.915810e+08
Accounts Payable 1.215220e+08
Capital Surplus 4.270000e+06
Other Current Assets NaN ]
```

2022-03-31 2021-12-31 \

```
[ 'quarterly_cashflow', 2022-03-31 2021-12-31 \
Change To Liabilities -2628000.0 30029000.0
Total Cashflows From Investing Activities -19305000.0 -16819000.0
Net Borrowings 15000000.0 -25000000.0
Total Cash From Financing Activities 4161000.0 -26696000.0
Change To Operating Activities -219044000.0 62706000.0
Net Income 59321000.0 38208000.0
Change In Cash -223342000.0 151958000.0
Repurchase Of Stock -10014000.0 -969000.0
Effect Of Exchange Rate -4420000.0 -4090000.0
Total Cash From Operating Activities -203778000.0 199563000.0
Depreciation 11175000.0 10946000.0
Change To Account Receivables -66471000.0 54270000.0
Other Cashflows From Financing Activities -825000.0 -727000.0
Change To Netincome 12226000.0 7756000.0
Capital Expenditures -12607000.0 -16224000.0
```

2021-09-30 2021-06-30

```
Change To Liabilities -9447000.0 -11441000.0
Total Cashflows From Investing Activities -24745000.0 -29553000.0
Net Borrowings -75000000.0 -70000000.0
Total Cash From Financing Activities -74476000.0 -76918000.0
Change To Operating Activities 80715000.0 95868000.0
Net Income 69480000.0 62782000.0
Change In Cash 85652000.0 23454000.0
Repurchase Of Stock -802000.0 -677000.0
Effect Of Exchange Rate -12073000.0 4367000.0
Total Cash From Operating Activities 196946000.0 125558000.0
Depreciation 11726000.0 11458000.0
Change To Account Receivables 23294000.0 -45442000.0
Other Cashflows From Financing Activities 1326000.0 -6241000.0
Change To Netincome 6982000.0 12123000.0
Capital Expenditures -24745000.0 -19720000.0 ]
```

```
[ 'quarterly_earnings', Revenue Earnings
Quarter
202021 711486000 62782000
3Q2021 702228000 69480000
```

```

4Q2021 676231000 38208000
1Q2022 723620000 59321000]
['quarterly_financials',
Research Development      None    None    None
Effect Of Accounting Charges None    None    None
Income Before Tax          76288000.0 46795000.0 88635000.0
Minority Interest           None    None    None
Net Income                 59321000.0 38208000.0 69480000.0
Selling General Administrative 148971000.0 140141000.0 138484000.0
Gross Profit                230516000.0 192105000.0 229993000.0
Ebit                         79277000.0 49656000.0 88649000.0
Operating Income             79277000.0 49656000.0 88649000.0
Other Operating Expenses     None    None    None
Interest Expense             -2642000.0 -6934000.0 -5073000.0
Extraordinary Items          None    None    None
Non Recurring                None    None    None
Other Items                  None    None    None
Income Tax Expense            16967000.0 8587000.0 19155000.0
Total Revenue                723620000.0 676231000.0 702228000.0
Total Operating Expenses     644343000.0 626575000.0 613579000.0
Cost Of Revenue               493104000.0 484126000.0 472235000.0
Total Other Income Expense Net -2989000.0 -2861000.0 -14000.0
Discontinued Operations      None    None    None
Net Income From Continuing Ops 59321000.0 38208000.0 69480000.0
Net Income Applicable To Common Shares 59321000.0 38208000.0 69480000.0

```

2021-06-30

```

Research Development      None
Effect Of Accounting Charges None
Income Before Tax          77774000.0
Minority Interest           None
Net Income                 62782000.0
Selling General Administrative 133254000.0
Gross Profit                220764000.0
Ebit                         84656000.0
Operating Income             84656000.0
Other Operating Expenses     None
Interest Expense             -5294000.0
Extraordinary Items          None
Non Recurring                None
Other Items                  None
Income Tax Expense            14992000.0
Total Revenue                711486000.0
Total Operating Expenses     626830000.0
Cost Of Revenue               490722000.0
Total Other Income Expense Net -6882000.0
Discontinued Operations      None
Net Income From Continuing Ops 62782000.0
Net Income Applicable To Common Shares 62782000.0 ]

```

Holder Shares Date Reported \

0	Vanguard Total Stock Market Index Fund	973831	2021-12-30	
1	iShares Core S&P Midcap ETF	950045	2022-01-30	
2	Vanguard Small-Cap Index Fund	863686	2021-12-30	
3	Neuberger & Berman Genesis Fund	844353	2022-02-27	
4	Virtus Equity Tr-Virtus KAR Small Cap Core Fd	765194	2021-12-30	
5	Capitol Ser Tr-Fuller & Thaler Behavioral Smal...	696283	2022-03-30	
6	Fundamental Investors Inc	579234	2021-12-30	
7	Vanguard Small Cap Value Index Fund	547463	2021-12-30	
8	Vanguard Extended Market Index Fund	455393	2021-12-30	
9	Smallcap World Fund	390600	2021-12-30	

% Out	Value
0 0.0283	149405152
1 0.0276	138526061
2 0.0251	132506706
3 0.0245	123275538
4 0.0222	117396063
5 0.0202	109469613
6 0.0168	88866080
7 0.0159	83991773
8 0.0132	69866394
9 0.0113	59925852]

['options', ('2022-06-17',)]

symbol: OXY

sector: Energy

Index: SP500

vol_30d_2yr: 499589648.4375

Sector 1YMF: 5.500003814697266

1YMF: 5.500003814697266

risk trend factor: 0.244335997011962

beta currentRatio debtToEquity dividendRate dividendYield \
OXY 1.955081 1.156 111.198 0.52 0.0086

ebitda ebitdaMargins forwardPE freeCashflow grossMargins \
OXY 15392000000 0.53054 6.822384 9129875456 0.64697

6/17/22, 10:15 AM

AnalyzeSP1500

```
grossProfits heldPercentInstitutions      industry    marketCap \
OXY    16297000000          0.82197  Oil & Gas E&P  52557672448

operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
OXY        12762999808        0.25255     0.0242     0.24    3.470297

priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
OXY            1.811584       0.25314     0.844     0.05964

returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \
OXY      0.34101       0.577     30.999  Energy      937190976

shortRatio totalCash totalCashPerShare totalDebt totalRevenue \
OXY        2.02   1908999936        2.037  27696001024  29012000768

trailingPE
OXY      8.383914

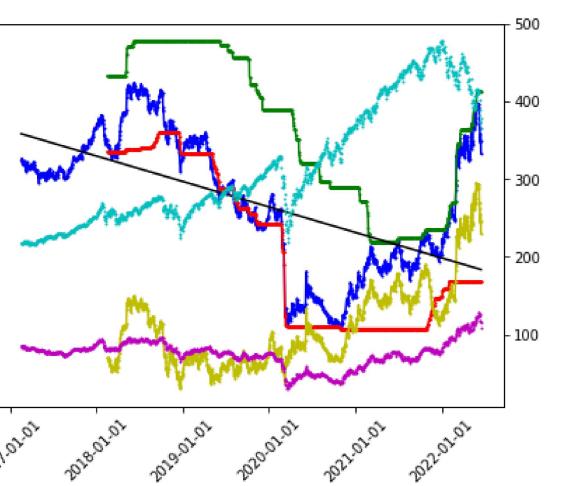
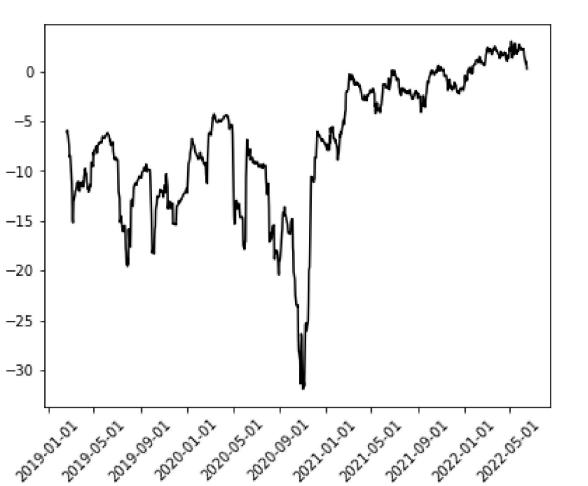
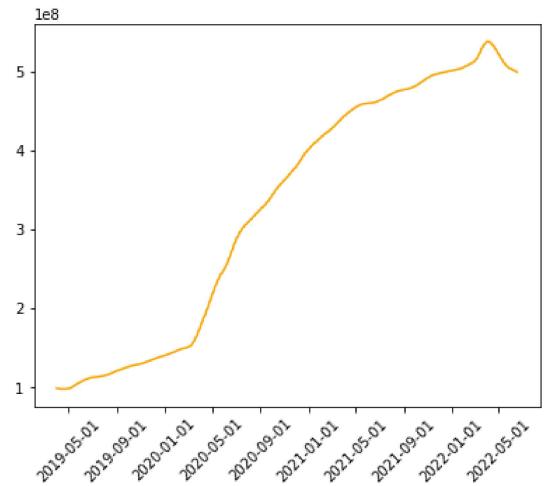
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper
2022-06-16 56.810001 58.485433 66.067619 73.649805 61.391111 4.682746 52.025619 70.756603
```

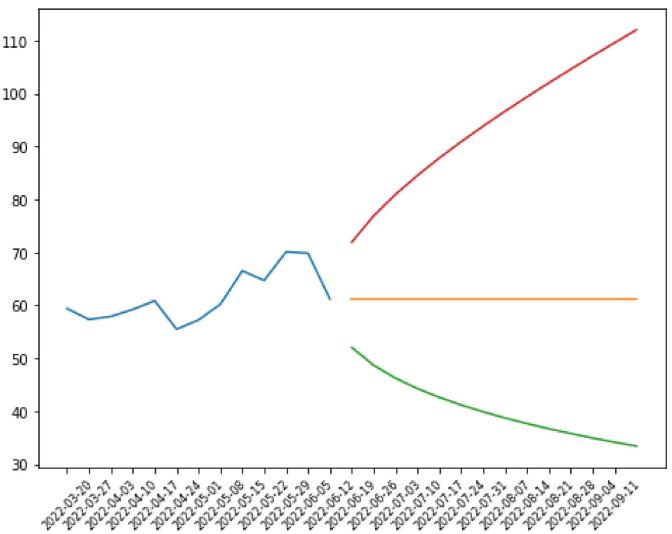
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
---------------	----------	-------------	---------	-----	-------

OXY	1.143644	56.810001	499589648.4375	0.737027	0.695678	0.543336
-----	----------	-----------	----------------	----------	----------	----------

	I axis	r axis
blue	symbol	legend
green	trailing_1yr_max	magenta
red	trailing_1yr_min	cyan
orange	30d_vol_2yr	sector
black	risk_trend_factor/linear	index
yellow	supply_trend_1yr	

Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -285.47003173828125
Index Volume Factor: 1.1872171829536644
Index Risk Trend Factor: -3.322122130654123





```
[ 'quarterly_balance_sheet', 2021-12-31 2021-09-30 2021-06-30 \
Capital Surplus 1.674900e+10 1.669200e+10 1.663800e+10
Total Liab 5.470900e+10 5.688500e+10 6.169300e+10
Total Stockholder Equity 1.056500e+10 9.111000e+09 8.482000e+09
Other Current Liab 6.930000e+08 1.037000e+09 1.120000e+09
Total Assets 7.503600e+10 7.575800e+10 7.993700e+10
Common Stock 2.170000e+08 2.170000e+08 2.170000e+08
Other Current Assets 1.288000e+09 2.590000e+09 3.150000e+09
Retained Earnings 4.480000e+09 3.152000e+09 2.533000e+09
Other Liab 1.593300e+10 1.583900e+10 1.546200e+10
Treasury Stock -1.088100e+10 -1.095000e+10 -1.090600e+10
Other Assets 1.231000e+09 1.145000e+09 1.138000e+09
Cash 2.764000e+09 2.059000e+09 4.569000e+09
Total Current Liabilities 8.324000e+09 9.126000e+09 9.586000e+09
Deferred Long Term Asset Charges 3.700000e+07 NaN NaN
Short Long Term Debt 4.160000e+08 1.040000e+09 1.424000e+09
Other Stockholder Equity -2.080000e+08 -2.820000e+08 -2.380000e+08
Property Plant Equipment 6.065600e+10 6.144800e+10 6.270600e+10
Total Current Assets 1.021100e+10 9.899000e+09 1.284400e+10
Long Term Investments 2.938000e+09 3.266000e+09 3.249000e+09
Net Tangible Assets 1.056500e+10 9.111000e+09 8.482000e+09
Net Receivables 4.313000e+09 3.477000e+09 3.288000e+09
Long Term Debt 2.936300e+10 3.099700e+10 3.573000e+10
Inventory 1.846000e+09 1.773000e+09 1.837000e+09
Accounts Payable 3.899000e+09 3.713000e+09 3.544000e+09
```

2021-03-31

```
Capital Surplus 1.658500e+10
Total Liab 6.105500e+10
Total Stockholder Equity 8.538000e+09
Other Current Liab 1.074000e+09
Total Assets 7.935500e+10
Common Stock 2.170000e+08
Other Current Assets 2.585000e+09
Retained Earnings 2.639000e+09
Other Liab 1.572600e+10
Treasury Stock -1.090300e+10
Other Assets 1.089000e+09
Cash 2.270000e+09
Total Current Liabilities 8.631000e+09
Deferred Long Term Asset Charges NaN
Short Long Term Debt 1.208000e+09
Other Stockholder Equity -2.350000e+08
Property Plant Equipment 6.502200e+10
Total Current Assets 1.007400e+10
Long Term Investments 3.170000e+09
Net Tangible Assets 8.538000e+09
Net Receivables 3.046000e+09
Long Term Debt 3.574000e+10
Inventory 2.173000e+09
Accounts Payable 3.416000e+09 ]
```

2021-12-31 2021-09-30 \

```
[ 'quarterly_cashflow', 2021-12-31 2021-09-30 \
Investments 4.270000e+08 -4.970000e+08
Change To Liabilities 2.720000e+08 1.180000e+08
Total Cashflows From Investing Activities -5.100000e+07 -1.660000e+08
Net Borrowings -2.279000e+09 -4.381000e+09
Total Cash From Financing Activities -2.532000e+09 -5.424000e+09
Change To Operating Activities 5.300000e+07 -6.700000e+07
Issuance Of Stock 7.000000e+06 1.300000e+07
Net Income 1.537000e+09 8.280000e+08
Change In Cash 5.090000e+08 -2.472000e+09
Repurchase Of Stock -8.000000e+06 -8.000000e+06
Total Cash From Operating Activities 3.092000e+09 3.118000e+09
Depreciation 2.097000e+09 1.933000e+09
Other Cashflows From Investing Activities 1.490000e+08 -9.000000e+06
Dividends Paid -2.090000e+08 -2.100000e+08
Change To Inventory -1.780000e+08 3.400000e+07
Change To Account Receivables -7.200000e+08 -1.870000e+08
Other Cashflows From Financing Activities -4.300000e+07 -8.450000e+08
Change To Netincome 9.400000e+07 4.140000e+08
Capital Expenditures -9.370000e+08 -6.560000e+08
```

2021-06-30 2021-03-31

```
Investments -1.000000e+07 4.860000e+08
Change To Liabilities 5.170000e+08 -4.200000e+07
Total Cashflows From Investing Activities -7.540000e+08 -2.820000e+08
Net Borrowings -4.381000e+09 -1.740000e+08
Total Cash From Financing Activities -2.620000e+08 -3.540000e+08
Change To Operating Activities -2.300000e+07 -8.200000e+07
Issuance Of Stock 8.000000e+06 6.000000e+06
Net Income 1.030000e+08 -1.460000e+08
Change In Cash 2.298000e+09 2.740000e+08
Repurchase Of Stock -8.000000e+06 -3.000000e+06
Total Cash From Operating Activities 3.314000e+09 9.100000e+08
Depreciation 2.392000e+09 2.329000e+09
Other Cashflows From Investing Activities -3.800000e+07 -8.400000e+07
```

```

Dividends Paid -2.100000e+08 -2.110000e+08
Change To Inventory 3.690000e+08 -3.110000e+08
Change To Account Receivables -2.420000e+08 -9.370000e+08
Other Cashflows From Financing Activities -2.700000e+08 2.800000e+07
Change To Netincome 2.050000e+08 7.400000e+07
Capital Expenditures -6.980000e+08 -5.790000e+08 ]
['quarterly_earnings', Revenue Earnings
Quarter
1Q2021 5293000000 -146000000
2Q2021 5958000000 103000000
3Q2021 6792000000 828000000
4Q2021 7913000000 1537000000]
['quarterly_financials',
Research Development None None
Effect Of Accounting Charges None None
Income Before Tax 2030000000.0 1217000000.0
Minority Interest None None
Net Income 1537000000.0 828000000.0
Selling General Administrative 280000000.0 240000000.0
Gross Profit 5258000000.0 4284000000.0
Ebit 2209000000.0 1535000000.0
Operating Income 2209000000.0 1535000000.0
Other Operating Expenses 565000000.0 545000000.0
Interest Expense -413000000.0 -475000000.0
Extraordinary Items None None
Non Recurring None None
Other Items None None
Income Tax Expense 469000000.0 387000000.0
Total Revenue 7913000000.0 6792000000.0
Total Operating Expenses 5704000000.0 5257000000.0
Cost Of Revenue 2655000000.0 2508000000.0
Total Other Income Expense Net -179000000.0 -318000000.0
Discontinued Operations -24000000.0 -2000000.0
Net Income From Continuing Ops 1561000000.0 830000000.0
Net Income Applicable To Common Shares 1328000000.0 623000000.0

2021-06-30 2021-03-31
Research Development None None
Effect Of Accounting Charges None None
Income Before Tax 143000000.0 315000000.0
Minority Interest None None
Net Income 103000000.0 -146000000.0
Selling General Administrative 177000000.0 166000000.0
Gross Profit 3719000000.0 3036000000.0
Ebit 57200000.0 4500000.0
Operating Income 57200000.0 4500000.0
Other Operating Expenses 49200000.0 46800000.0
Interest Expense -60800000.0 400000.0
Extraordinary Items None None
Non Recurring None None
Other Items None None
Income Tax Expense 43000000.0 16000000.0
Total Revenue 5958000000.0 5293000000.0
Total Operating Expenses 5386000000.0 5248000000.0
Cost Of Revenue 2239000000.0 2257000000.0
Total Other Income Expense Net -429000000.0 270000000.0
Discontinued Operations 3000000.0 -445000000.0
Net Income From Continuing Ops 100000000.0 299000000.0
Net Income Applicable To Common Shares -93000000.0 -346000000.0 ]
['mutualfund_holders',
Holder Shares Date Reported % Out \
0 Dodge & Cox Stock Fund 68378526 2021-12-30 0.0730
1 Select Sector SPDR Fund-Energy Select 26892792 2022-01-30 0.0278
2 Vanguard Total Stock Market Index Fund 25205043 2021-12-30 0.0269
3 Vanguard Mid-Cap Index Fund 20063349 2021-12-30 0.0214
4 Vanguard 500 Index Fund 18790382 2021-12-30 0.0200
5 SPDR S&P 500 ETF Trust 9409120 2022-01-30 0.0100
6 Fidelity 500 Index Fund 9086470 2022-02-27 0.0097
7 Dodge & Cox Balanced Fund 8150914 2021-12-30 0.0087
8 iShares Core S&P 500 ETF 7379729 2022-01-30 0.0079
9 Dodge & Cox Global Stock Fund 7285763 2021-12-30 0.0078

Value
0 1982293468
1 982915474
2 730694196
3 581636487
4 544733174
5 354441550
6 397351333
7 236294996
8 277994391
9 211214269 ]
['options', ('2022-06-17', '2022-08-19', '2023-01-20', '2024-01-19')]
['sustainability', Value
2022-5
palmOil False

```

```

controversialWeapons      False
gambling                  False
socialScore                12.04
nuclear                   False
furLeather                False
alcoholic                 False
gmo                       False
catholic                  False
socialPercentile          None
peerCount                 66
governanceScore           6.88
environmentPercentile     None
animalTesting              False
tobacco                   False
totalEsg                  43.53
highestControversy        2
esgPerformance            LEAD_PERF
coal                      False
pesticides                False
adult                     False
percentile                92.95
peerGroup                 Oil & Gas Producers
smallArms                 False
environmentScore          24.61
governancePercentile      None
militaryContract          False]
symbol: EOG
sector: Energy
Index: SP500
vol_30d_2yr: 97161242.3828125
Sector 1YMF: 10.389991760253906
1YMF: 10.389991760253906
risk trend factor: 0.2417401337540328
    beta currentRatio debtToEquity dividendRate dividendYield \
EOG 1.658348      1.354      24.707      3      0.0251

earningsGrowth      ebitda ebitdaMargins forwardPE freeCashflow \
EOG      -0.422  9639999488      0.42867  7.645493  3687624960

grossMargins grossProfits heldPercentInstitutions      industry \
EOG      0.67685  13034000000      0.89128  Oil & Gas E&P

marketCap operatingCashflow operatingMargins payoutRatio pegRatio \
EOG 68469616640      7749000192      0.25347      0.265      0.57

priceToBook priceToSalesTrailing12Months profitMargins quickRatio \
EOG 3.178433      3.044718      0.19464      1.153

returnOnAssets returnOnEquity revenueGrowth revenuePerShare sector \
EOG 0.09594      0.20694      0.667      38.672  Energy

sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
EOG 585713024      1.67  4008999936      6.845  5321999872

totalRevenue trailingPE
EOG 22488000512  15.597012

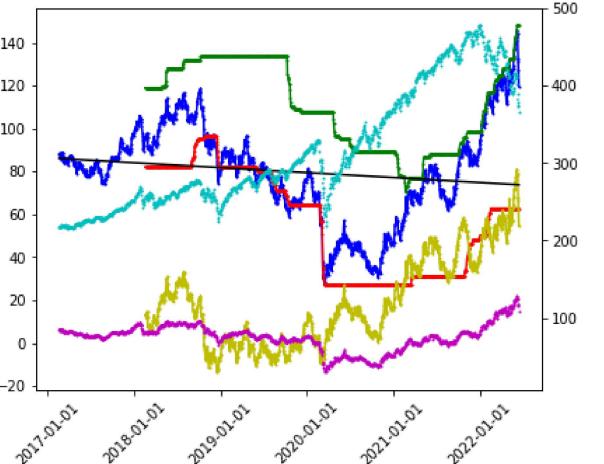
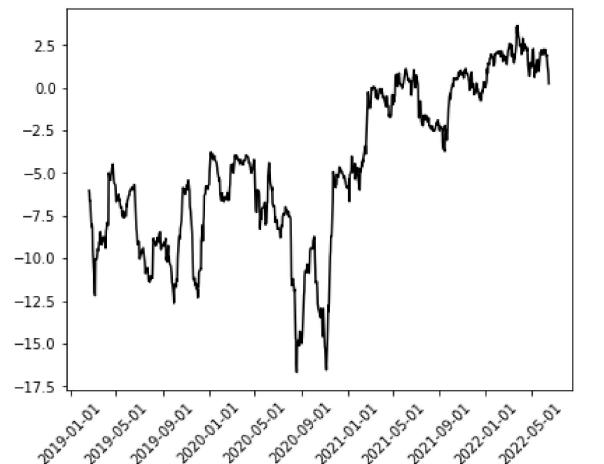
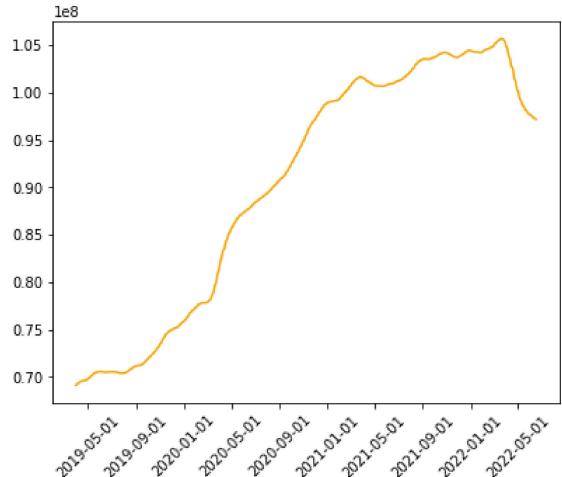
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDiv	90d_lower	90d_upper
2022-06-16	119.559998	118.328371	134.179842	150.031312	125.279683	8.564534	108.150615	142.408751

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
EOG	0.870698	119.559998	97161242.382812	0.75653	0.682764	0.481992

l axis	r axis
blue symbol	magenta sector
green trailing_1yr_max	cyan index
red trailing_1yr_min	
orange 30d_vol_2yr	
black risk_trend_factor/linear	
yellow supply_trend_1yr	

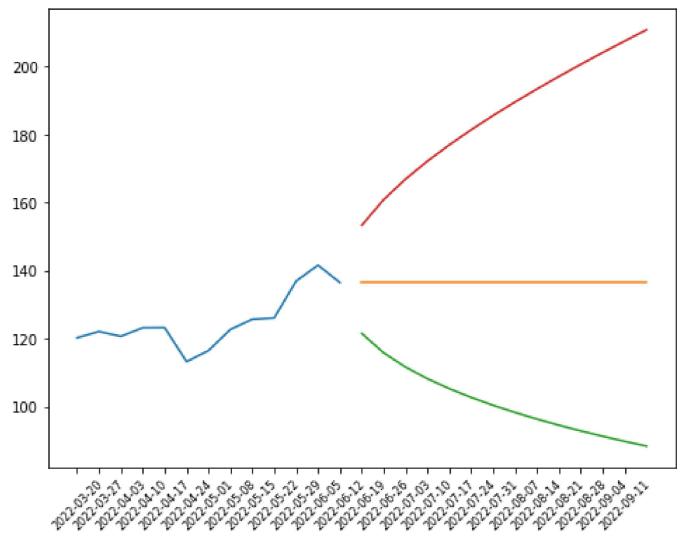
Sector 1YMF: 14.330001831054688
Sector Volume Factor: 0.8279694389405757
Sector Risk Trend Factor: 0.4625564970394849
Index 1YMF: -285.47003173828125
Index Volume Factor: 1.1872171829536644
Index Risk Trend Factor: -3.322122130654123



```

ets next 13 weeks
inner cv scores:
best model: [None, None]
best inner cv score, sdev (11 folds): 288.97414681128515 278.7251158990426
test cv mean error, stdev (10 folds): 315.81934829270745 278.44056096026753
sell date: 2022-06-19
expected return: 0.14157883351619116
discounted return: 0.06844692592388091
quarter return: 441.8468431168764

```



```

['options', ('2022-07-15', '2023-01-20', '2024-01-19', '2026-03-20')]
['sustainability', Value]
2022-5

```

palmoil	False
controversialWeapons	False
gambling	False
socialScore	8.13
nuclear	False
furLeather	False
alcoholic	False
gmo	False
catholic	False
socialPercentile	None
peerCount	66
governanceScore	7.73
environmentPercentile	None
animalTesting	False
tobacco	False
totalEsg	36.25
highestControversy	1
esgPerformance	OUT_PERF
coal	False
pesticides	False
adult	False
percentile	81.37
peerGroup	Oil & Gas Producers
smallArms	False
environmentScore	20.39
governancePercentile	None
militaryContract	False

	exp_return	sell_date	days_delta	disc rtn	qtr rtn	outer_cv_avg_rmse_n11	outer_cv_std_n11	mean_revert_flag	pi_lower	pi_upper	price	Sector	Index	error_price_ratio	std_price_ratio
SYMBOL															
EOG	0.141579	2022-06-19	2	0.068447	441.846843	315.819348	278.440561	False	121.516792	153.301822	119.559998	Energy	SP500	2.641514	2.328877
SM	0.131184	2022-06-19	2	0.063571	290.086674	70.165428	100.487816	False	37.762882	63.529739	43.299999	Energy	SP600	1.620449	2.320735
OXY	0.076879	2022-06-19	2	0.037728	30.176665	59.405879	50.356912	False	52.044768	71.912776	56.810001	Energy	SP500	1.045694	0.886409
VPU	0.059522	2022-06-19	2	0.029331	14.291163	71.541391	82.397565	False	143.086993	160.016037	142.639999	error	nan	0.501552	0.577661
APA	0.288656	2022-07-03	16	0.015976	4.298219	40.309880	40.008091	False	32.545878	90.966357	41.759998	Energy	SP500	0.965275	0.958048
VNQ	0.029627	2022-06-19	2	0.014705	3.830658	78.547234	111.393240	False	84.632692	95.202118	87.040001	error	nan	0.902427	1.279794
TWI	0.165619	2022-07-10	23	0.006685	1.845980	5.008942	7.645662	False	12.491773	35.419422	18.080000	Industrials	SP600	0.277043	0.422880
DVN	0.797646	2022-09-18	93	0.006326	1.786346	90.962217	142.288972	False	57.867891	244.143153	63.270000	Energy	SP500	1.437683	2.248917
CEIX	0.542912	2022-09-04	79	0.005505	1.657044	36.976315	64.101812	False	35.518675	166.663824	49.060001	Energy	SP600	0.753696	1.306600
VAW	0.111932	2022-07-10	23	0.004624	1.528666	223.676442	128.658147	False	159.616297	205.173411	162.750000	error	nan	1.374356	0.790526
PBF	0.447097	2022-09-18	93	0.003982	1.441358	22.973989	16.371710	False	14.862362	173.489926	35.090000	Energy	SP600	0.654716	0.466563
DINO	0.434688	2022-09-18	93	0.003889	1.429131	78.904888	87.440492	False	37.537331	115.212760	47.770000	Energy	SP400	1.651767	1.830448
ROCC	0.211088	2022-08-07	51	0.003762	1.412676	108.730622	136.471451	False	23.443799	109.209458	41.779999	Energy	SP600	2.602456	3.266430
VLO	0.349053	2022-09-18	93	0.003225	1.344716	289.087900	335.556833	False	104.626759	249.813810	118.739998	Energy	SP500	2.434629	2.825980
MPC	0.245090	2022-08-28	72	0.003049	1.323260	136.709417	187.834553	False	72.253480	181.522038	91.980003	Energy	SP500	1.486295	2.042124
FANG	0.316578	2022-09-18	93	0.002962	1.312690	492.343538	460.895730	False	91.740028	337.650152	133.679993	Energy	SP500	3.683001	3.447754
PDCE	0.306243	2022-09-18	93	0.002877	1.302496	73.994241	73.682928	False	45.024553	200.018322	72.650002	Energy	SP400	1.018503	1.014218
MRO	0.304605	2022-09-18	93	0.002863	1.300880	13.299977	18.506446	False	18.488727	60.612781	25.660000	Energy	SP500	0.518316	0.721218
CIVI	0.255389	2022-09-18	93	0.002449	1.252323	55.551157	47.483651	True	24.859401	247.102450	66.389999	Energy	SP600	0.836740	0.715223
MTDR	0.238608	2022-09-18	93	0.002304	1.235761	63.397602	63.274602	False	27.496729	185.140496	56.040001	Energy	SP400	1.131292	1.129097
COP	0.235316	2022-09-18	93	0.002275	1.232512	156.833645	171.940405	False	81.745620	195.821706	102.419998	Energy	SP500	1.531280	1.678778
XOM	0.235314	2022-09-18	93	0.002275	1.232510	107.209896	108.086788	False	72.394649	176.711267	91.389999	error	SP500	1.173103	1.182698
VDE	0.197866	2022-09-18	93	0.001943	1.195542	169.900524	209.404663	False	73.946885	233.459012	108.400002	error	nan	1.567348	1.931777
SAFM	0.044792	2022-07-10	23	0.001907	1.191569	369.681274	464.195931	False	180.293713	258.647470	206.449997	Consumer Defensive	SP400	1.790658	2.248467
TVTY	0.084894	2022-08-07	51	0.001599	1.158340	25.778478	20.934352	False	16.544910	72.611816	32.099998	error	SP600	0.803068	0.652161
MANT	0.108625	2022-08-21	65	0.001588	1.157144	55.638904	23.192638	False	79.976090	134.688117	94.690002	Technology	SP600	0.587590	0.244932
SLY	0.094354	2022-08-14	58	0.001556	1.153752	90.260061	85.753540	False	69.596976	106.321984	77.500000	error	nan	1.164646	1.106497
HRB	0.079225	2022-08-07	51	0.001496	1.147444	8.085383	7.484584	False	26.112564	48.056801	33.270000	Consumer Cyclical	SP400	0.243023	0.224965
VGT	0.126872	2022-09-11	86	0.001390	1.136302	1169.731104	948.670468	False	285.084881	448.524379	315.970001	error	nan	3.702032	3.002407
VCR	0.051526	2022-07-24	37	0.001359	1.133067	1040.942703	976.656401	False	195.540659	280.543129	222.740005	error	nan	4.673353	4.384737
SPY	0.097791	2022-08-28	72	0.001297	1.126614	947.397920	708.279136	False	340.690065	475.535895	366.649994	error	nan	2.583930	1.931758
MDYG	0.127863	2022-09-18	93	0.001295	1.126405	48.333390	50.858172	False	52.859630	84.681965	59.320000	error	nan	0.814791	0.857353
VDC	0.047684	2022-07-24	37	0.001260	1.122800	92.143281	62.576579	False	170.709909	205.580996	177.660004	error	nan	0.518650	0.352227
VIS	0.090233	2022-08-28	72	0.001201	1.116713	303.788318	344.121097	False	141.615588	214.275516	159.779999	error	nan	1.901291	2.153718
ACC	0.031424	2022-07-17	30	0.001032	1.099532	18.103170	12.465199	False	53.237451	82.105750	64.099998	error	SP400	0.282421	0.194465
VFH	0.068908	2022-08-28	72	0.000926	1.088878	63.924861	59.077539	False	64.217155	99.925274	75.419998	error	nan	0.847585	0.783314
LNTH	0.083867	2022-09-18	93	0.000866	1.082929										

	exp_return	sell_date	days_delta	disc rtn	qtr rtn	outer_cv_avg_rmse_n11	outer_cv_std_n11	mean_revert_flag	pi_lower	pi_upper	price	Sector	Index	error_price_ratio	std_price_ratio
SYMBOL															
GO	0.014619	2022-07-24	37	0.000392	1.036745	15.809879	6.829165	False	30.700808	56.033881	40.450001	Consumer Defensive	SP400	0.390850	0.168830
MTOR	0.005091	2022-09-18	93	0.000055	1.005036	15.624875	9.712694	False	21.985116	59.253316	35.910000	error	SP600	0.435112	0.270473
ROG	-0.001705	2022-06-19	2	-0.000853	0.924497	929.964388	1222.074355	False	230.130613	286.206688	257.079987	error	SP600	3.617413	4.753674