

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

06-17

<b>Energy ETF</b>	-0.043815
<b>Consumer Staples ETF</b>	-0.096218
<b>Utilities ETF</b>	-0.125888
<b>Health Care ETF</b>	-0.134327
<b>Materials ETF</b>	-0.161041
<b>SP600</b>	-0.165794
<b>Industrials ETF</b>	-0.178228
<b>SP1500</b>	-0.184779
<b>Financials ETF</b>	-0.187815
<b>SP500</b>	-0.189930
<b>Real Estate ETF</b>	-0.190735
<b>SP400</b>	-0.192427
<b>Communication Services ETF</b>	-0.226489
<b>Information Technology ETF</b>	-0.232112
<b>Consumer Discretionary ETF</b>	-0.260025

standard deviations

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

t scores

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

p values

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

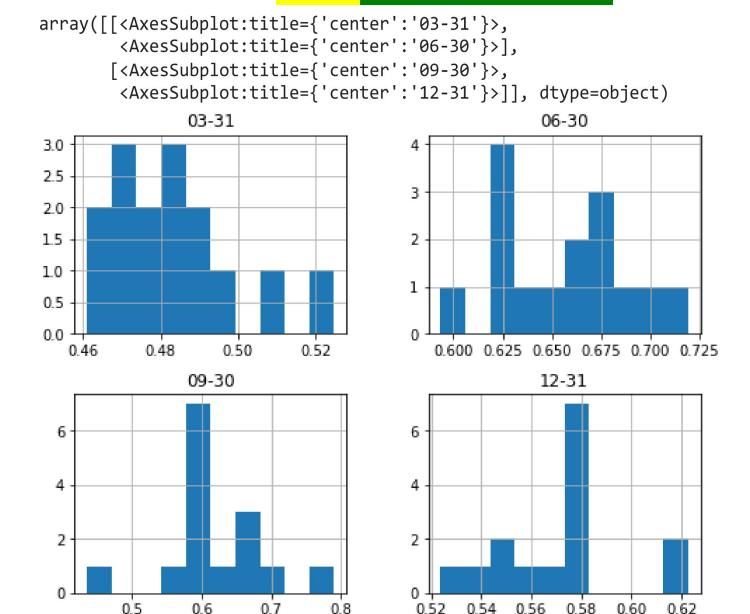
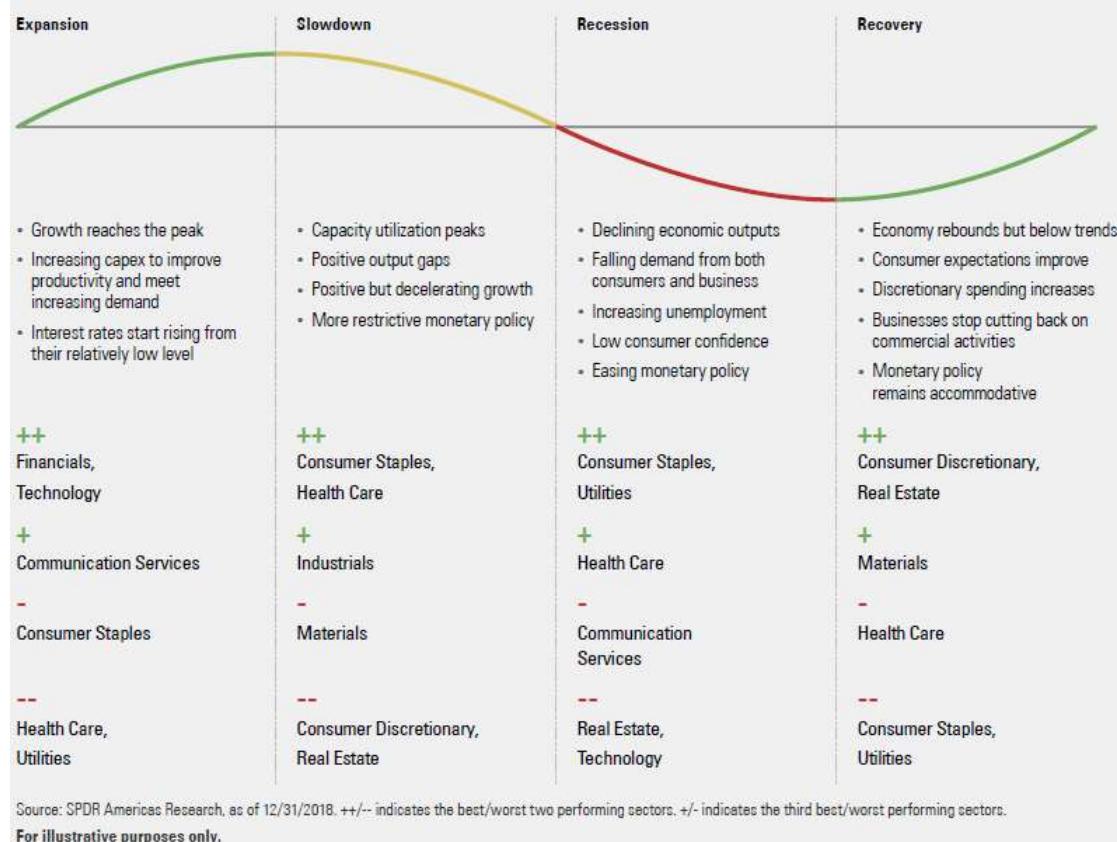


Figure 11: A Sector Roadmap for Business Cycles





# Cycles

Strongest  
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Weakest

## Expansion

Tech  
Financials  
Real Estate  
**Consumer D**  
Industrials  
Materials  
Energy  
Healthcare  
Cons. Staples  
Utilities

## Slowdown

Cons. Staples  
Healthcare  
Industrials  
Utilities  
Tech  
Energy  
Financials  
Materials  
Consumer D  
Real Estate

## Recession

Cons. Staples  
Energy  
Utilities  
Healthcare  
Consumer D  
**Materials**  
**Industrials**  
**Financials**  
**Tech**  
**Real Estate**

## Recovery

Real Estate  
Consumer D  
Materials  
Tech  
Industrials  
Energy  
Financials  
Healthcare  
Cons. Staples  
Utilities

	Energy ETF	Consumer Staples ETF	Utilities ETF	Health Care ETF	Materials ETF	SP600	Industrials ETF	SP1500	Financials ETF	SP500	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	0.038955	0.030708	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	0.052789	0.045666	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	0.073683	0.069917	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	-0.015065	-0.024130	-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	-0.011331	0.047568	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	0.031675	0.078236	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	-0.138848	-0.137319	-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	0.109942	0.144236	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	0.067026	0.040369	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	0.013235	0.011423	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	0.096390	0.089876	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	-0.330709	-0.194477	-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	0.135641	0.201618	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	0.028859	0.090383	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	0.253698	0.121185	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	0.165207	0.063518	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	0.074954	0.083593	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	0.024323	0.002523	-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	0.042310	0.106772	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	-0.032929	-0.049099	-0.065856	-0.089783	-0.114414	-0.090992	-0.103975
2022-06-17 00:00:00	-0.043815	-0.096218	-0.125888	-0.134327	-0.161041	-0.165794	-0.178228	-0.184779	-0.187815	-0.189930	-0.190735	-0.192427	-0.226489	-0.232112	-0.260025

	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	2022-06-17 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	Energy ETF	
	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	Utilities ETF	Consumer Staples ETF	
	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	Utilities ETF	Utilities ETF	
	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	SP500	Utilities ETF	Health Care ETF
	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	SP1500	Consumer Staples ETF	Financials ETF	Materials ETF	Financials ETF	Materials ETF	Materials ETF
	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	SP600	SP600	SP600
	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	SP1500	Health Care ETF	Industrials ETF	Industrials ETF	Industrials ETF
	Consumer Discretionary ETF	SP1500	SP1500	SP1500	SP500	SP1500	SP400	Communication Services ETF	SP500	Communication Services ETF	Industrials ETF	Materials ETF	Consumer Discretionary ETF	SP1500	SP1500	Materials ETF	Communication Services ETF	Financials ETF	Consumer Discretionary ETF	Consumer Discretionary ETF	SP500	SP500	SP500	SP500
	Materials ETF	Health Care ETF	Industrials ETF	Industrials ETF	SP500	SP600	Materials ETF	Communication Services ETF	Utilities ETF	Consumer Discretionary ETF	SP400	Real Estate ETF	SP500	SP400	Information Technology ETF	Consumer Discretionary ETF	Consumer Staples ETF	Industrials ETF	SP1500	SP1500	Financials ETF	SP1500	Financials ETF	Financials ETF
	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	SP600	SP600	SP600	SP600
	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	SP400	Real Estate ETF	Real Estate ETF	Real Estate ETF	Real Estate ETF
	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	Utilities ETF	Industrials ETF	Energy ETF	Energy ETF	SP400	SP400	SP400	SP400
	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	SP600	Information Technology ETF	Communication Services ETF	Information Technology ETF	Communication Services ETF	Communication Services ETF
	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	Information Technology ETF	Information Technology ETF	Information Technology ETF
	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	Energy ETF	Utilities ETF	Energy ETF	Utilities ETF	Information Technology ETF	Utilities ETF	Industrials ETF	Communication Services ETF	Communication Services ETF	Communication Services 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

2022-06-17

Information Technology ETF	0.105318
Consumer Discretionary ETF	0.103945
Energy ETF	0.083099
Materials ETF	0.071426
SP1500	0.070498
SP500	0.069644
SP600	0.069416
SP400	0.069126
Health Care ETF	0.067854
Communication Services ETF	0.065505
Real Estate ETF	0.065298
Financials ETF	0.052571
Industrials ETF	0.050194
Consumer Staples ETF	0.030500
Utilities ETF	0.022444

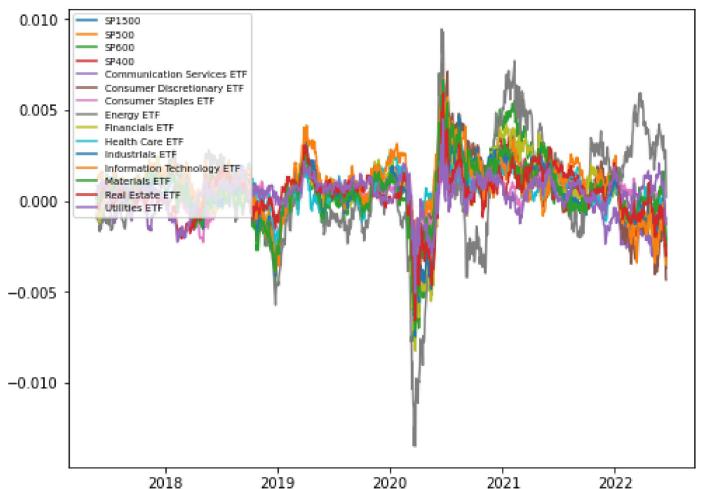
	2017-03-31 00:00:00	2017-06-30 00:00:00	2017-09-30 00:00:00	2017-12-31 00:00:00	2018-03-31 00:00:00	2018-06-30 00:00:00	2018-09-30 00:00:00	2018-12-31 00:00:00	2019-03-31 00:00:00	2019-06-30 00:00:00	2019-09-30 00:00:00	2019-12-31 00:00:00	2020-03-31 00:00:00	2020-06-30 00:00:00	2020-09-30 00:00:00	2020-12-31 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	2022-06-17 00:00:00
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	Energy ETF	Information Technology ETF
	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	Utilities ETF	Consumer Discretionary ETF
	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	Energy ETF
	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	Materials ETF
	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	Health Care ETF	Consumer Staples ETF	Financials ETF	SP1500	
	SP400	SP400	SP500	Health Care ETF	Consumer Staples ETF	SP1500	SP500	Communication Services ETF	SP500	Communication Services ETF	SP500	Financials ETF	SP500	Communication Services ETF	Information Technology ETF	Industrials ETF	Communication Services ETF	SP500	SP1500	SP500	Health Care ETF	SP500
	SP500	Industrials ETF	SP1500	SP1500	SP1500	SP1500	Consumer Staples ETF	SP1500	SP1500	Materials ETF	SP400	SP600	SP1500	SP400	Consumer Discretionary ETF	Real Estate ETF	SP1500	SP500	SP1500	Industrials ETF	SP600	
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	Materials ETF	SP500	Materials ETF	Industrials ETF	SP500	Consumer Discretionary ETF	Materials ETF	Materials ETF	SP400	SP1500	SP400	SP400	Real Estate ETF	Industrials ETF	SP1500	SP1500	Consumer Discretionary ETF	Information Technology ETF	SP400	Industrials ETF	SP1500	Health Care ETF
	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	SP500	SP1500	Industrials ETF	SP600	Health Care ETF	Real Estate ETF	Communication Services ETF
	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	
	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	Industrials ETF	Financials ETF	Utilities ETF	Real Estate ETF	Consumer Staples ETF	Information Technology ETF	Energy ETF	SP400	Financials ETF		
	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	
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	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	Consumer Staples ETF	Information Technology ETF	Industrial ETF	Communication Services ETF	Information Technology ETF	Utilities ETF		

**Index   Symbol   risk\_trend\_factor**

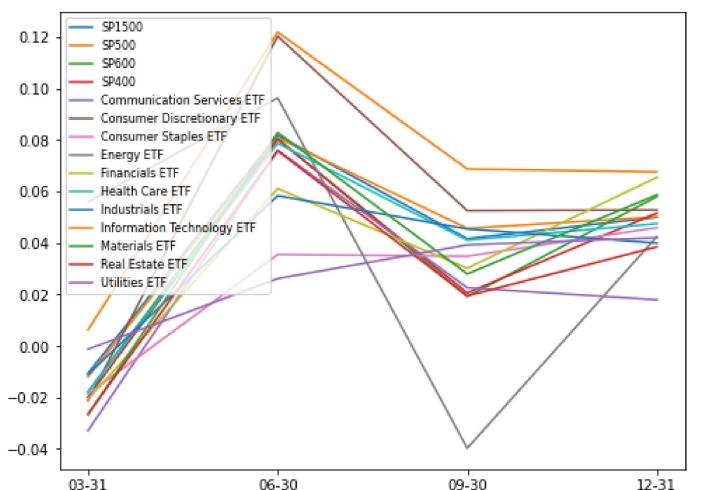
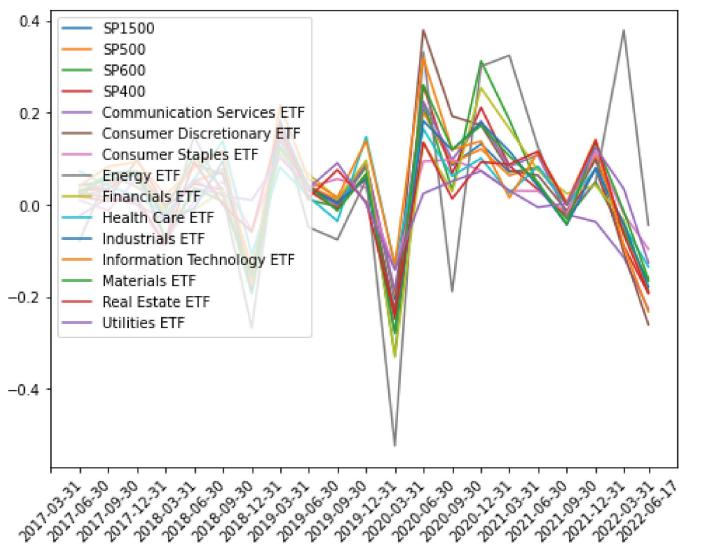
0	SP500	SPY	-3.791861
1	SP1500	SPTM	-3.879022
2	SP400	MDYG	-5.134573
3	SP600	SLY	-5.242200

**Symbol   risk\_trend\_factor   Sector**

3	VDE	-0.123306	Energy ETF
2	VDC	-2.283970	Consumer Staples ETF
10	VPU	-2.520459	Utilities ETF
9	VNQ	-3.053370	Real Estate ETF
8	VAW	-3.165271	Materials ETF
5	VHT	-3.323632	Health Care ETF
6	VIS	-4.514668	Industrials ETF
4	VFH	-4.617891	Financials ETF
1	VCR	-4.721407	Consumer Discretionary ETF
7	VGT	-4.954472	Information Technology ETF
0	VOX	-8.783598	Communication Services ETF

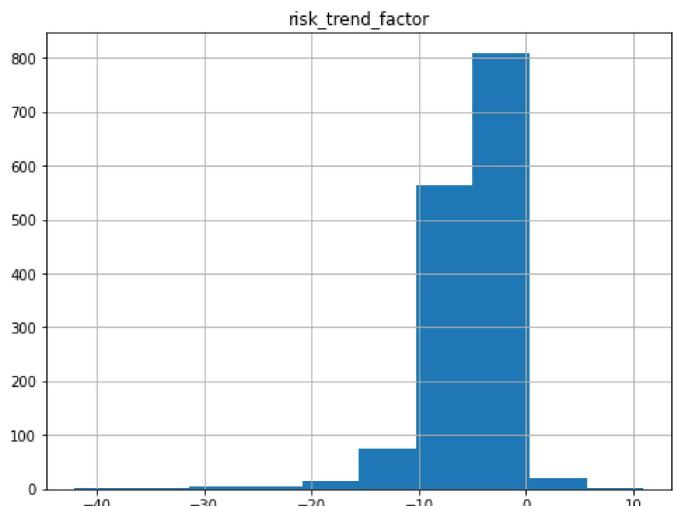


Quarterly Returns



0.051078501531639196

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1520

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       '90dSDev', 'TP', '21dstdTP', '21dMA-TP', '21dBOLU', '21dBOLD',
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       'supply_trend_60d', 'supply_trend_30d', 'vol_30d_2yr', 'pct_1yr',
       'pct_2yr', 'MIN_Lookback_One_Year', 'MIN_Lookback_2_Months',
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	latest_p	MIN_Lookback_One_Year	MIN_Lookback_2_Months	MIN_Lookback_1_Months	risk_trend_factor	volume_factor	adf	hurst	Sector	Market Index	index	index_Symbol
--	----------	-----------------------	-----------------------	-----------------------	-------------------	---------------	-----	-------	--------	--------------	-------	--------------

Symbol												
ACC	64.230003	49.209999	65.019997	65.019997	10.926848	2.134689	0.978004	0.420279	Real Estate	SP400	NaN	NaN
MTOR	35.939999	32.93	36.279999	36.279999	5.065223	1.664475	0.319063	0.43585	error	SP600	NaN	NaN
TVTY	32.130001	27.870001	32.889999	32.889999	2.341879	1.643789	0.518794	0.448871	error	SP600	NaN	NaN
BANF	94.860001	77.379997	86.82	86.82	2.011991	1.135864	0.955166	0.536352	error	SP600	NaN	NaN
Y	830.5	737.890015	862.869995	862.869995	1.771776	1.56538	0.382688	0.459685	Financial Services	SP400	NaN	NaN
...	...	...	...	...	...	...	...	...	...	...	...	...
ODFL	NaN	NaN	NaN	NaN	NaN	-5.178995	NaN	NaN	NaN	Industrials	NaN	SP500
EW	NaN	NaN	NaN	NaN	NaN	-2.677285	NaN	NaN	NaN	Healthcare	NaN	SP500
PCRX	NaN	NaN	NaN	NaN	NaN	-2.849253	NaN	NaN	NaN	Healthcare	NaN	SP600
CBOE	NaN	NaN	NaN	NaN	NaN	-4.539896	NaN	NaN	NaN	Financial Services	NaN	SP500
PCAR	NaN	NaN	NaN	NaN	NaN	-4.010257	NaN	NaN	NaN	Industrials	NaN	SP500

1555 rows × 12 columns

0.975

temp\_sm

index MIN\_Lookback\_One\_Year MIN\_Lookback\_2\_Months MIN\_Lookback\_1\_Months risk\_trend\_factor volume\_factor

Symbol					
A	2022-06-17	147.679993	179.570007	179.570007	-9.088903 1.131711
AA	2022-06-17	44.419998	98.089996	98.089996	-3.704472 0.98632
AAL	2022-06-17	22.549999	22.549999	22.549999	-3.126898 0.707794
AAN	2022-06-17	NaN	35.439999	35.439999	NaN NaN
AAON	2022-06-17	81.25	83.790001	83.790001	-10.22921 1.041044
...	...	...	...	...	...
ZIMV	2022-06-17	NaN	NaN	NaN	NaN NaN
ZION	2022-06-17	60.650002	75.440002	75.440002	-4.600841 0.978199
ZTS	2022-06-17	187.320007	249.270004	249.270004	-6.71488 1.095466
ZUMZ	2022-06-17	50.060001	55.099998	55.099998	-5.921479 1.674903
ZYXI	2022-06-17	16.263636	16.263636	16.263636	-10.695845 0.673641

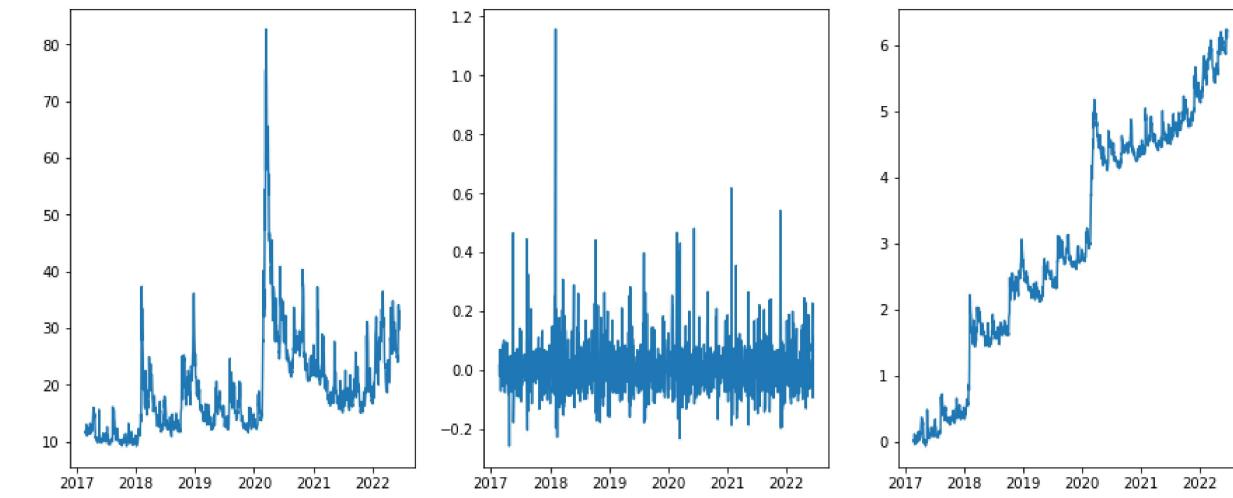
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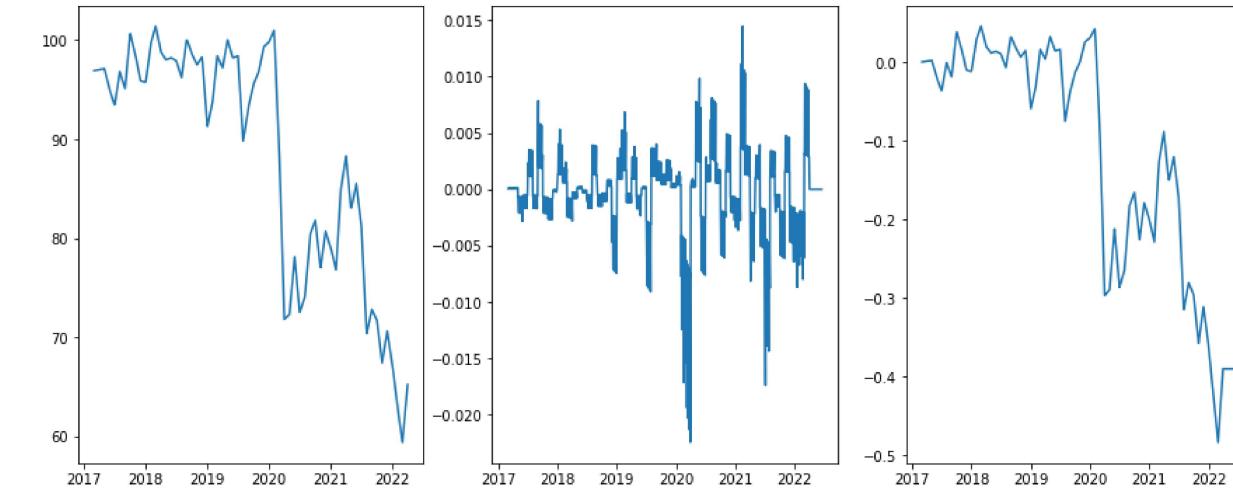
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Symbol										
<b>ACC</b>	49.209999	65.019997	65.019997	10.926848	2.134689	VNQ	MDYG	-3.05337	SP400	Real Estate
<b>MTOR</b>	32.93	36.279999	36.279999	5.065223	1.664475	error	SLY	error	SP600	error
<b>TVTY</b>	27.870001	32.889999	32.889999	2.341879	1.643789	error	SLY	error	SP600	error
<b>BANF</b>	77.379997	86.82	86.82	2.011991	1.135864	error	SLY	error	SP600	error
<b>Y</b>	737.890015	862.869995	862.869995	1.771776	1.56538	VFH	MDYG	-4.617891	SP400	Financial Services
<b>SAFM</b>	177.479996	200.0	200.0	1.751569	1.334104	VDC	MDYG	-2.28397	SP400	Consumer Defensive
<b>SJI</b>	29.24	35.32	35.32	1.295238	0.791297	error	SLY	error	SP600	error
<b>LNTH</b>	25.790001	64.139999	69.738998	1.178774	1.823238	VHT	SLY	-3.323632	SP600	Healthcare
<b>ROG</b>	206.130005	274.51001	274.51001	1.068804	0.980653	error	SLY	error	SP600	error
<b>TWI</b>	11.82	15.77	18.889999	0.931088	1.389288	VIS	SLY	-4.514668	SP600	Industrials
<b>PBF</b>	18.780001	30.129999	32.41	0.887657	0.835417	VDE	SLY	-0.123306	SP600	Energy
<b>GO</b>	36.77	36.77	37.82	0.842135	1.191531	VDC	MDYG	-2.28397	SP400	Consumer Defensive
<b>HRB</b>	26.23	28.17	34.959999	0.731411	0.963511	VCR	MDYG	-4.721407	SP400	Consumer Cyclical
<b>AZPN</b>	162.559998	169.220001	191.460007	0.719312	0.677612	VGT	MDYG	-4.954472	SP400	Technology
<b>CEIX</b>	18.93	50.389999	55.259998	0.677246	1.548727	VDE	SLY	-0.123306	SP600	Energy
<b>PSB</b>	165.850006	189.229996	189.830002	0.57675	2.540601	error	MDYG	error	SP400	error
<b>MCK</b>	204.660004	333.440002	339.940002	0.573819	1.048139	VHT	SPY	-3.323632	SP500	Healthcare
<b>GCP</b>	27.780001	32.279999	32.279999	0.502796	1.87078	error	SLY	error	SP600	error
<b>WRB</b>	54.953335	71.269997	71.529999	0.374885	1.220256	VFH	SPY	-4.617891	SP500	Financial Services
<b>FCN</b>	147.380005	167.279999	170.649994	0.359043	0.694756	error	MDYG	error	SP400	error
<b>XOM</b>	64.800003	91.510002	92.919998	0.347413	1.153813	VDE	SPY	-0.123306	SP500	Energy
<b>MANT</b>	92.0	92.0	94.730003	0.320637	2.782348	VGT	SLY	-4.954472	SP600	Technology
<b>SM</b>	24.780001	43.689999	43.689999	0.305033	0.640686	VDE	SLY	-0.123306	SP600	Energy
<b>DINO</b>	39.389999	40.950001	48.290001	0.269915	1.094012	VDE	MDYG	-0.123306	SP400	Energy
<b>PLAB</b>	14.56	20.299999	20.299999	0.264129	2.163783	VGT	SLY	-4.954472	SP600	Technology
<b>MPC</b>	64.839996	91.879997	98.290001	0.209274	1.221452	VDE	SPY	-0.123306	SP500	Energy
<b>LLY</b>	235.850006	314.0	314.0	0.187301	0.967658	VHT	SPY	-3.323632	SP500	Healthcare
<b>VLO</b>	84.949997	111.519997	131.690002	0.182835	1.3872	VDE	SPY	-0.123306	SP500	Energy
<b>APA</b>	24.299999	45.220001	45.27	0.181301	0.999608	VDE	SPY	-0.123306	SP500	Energy
<b>PPC</b>	26.280001	29.700001	30.559999	0.177885	1.275425	VDC	MDYG	-2.28397	SP400	Consumer Defensive
<b>MRO</b>	14.16	27.719999	29.0	0.151107	1.000459	VDE	SPY	-0.123306	SP500	Energy
<b>DVN</b>	31.99	64.980003	73.18	0.148782	1.104104	VDE	SPY	-0.123306	SP500	Energy
<b>UTHR</b>	212.619995	218.380005	218.380005	0.139402	1.481235	VHT	MDYG	-3.323632	SP400	Healthcare
<b>VIVO</b>	27.450001	28.719999	28.719999	0.109712	0.591657	error	SLY	error	SP600	error
<b>ROCC</b>	25.59	42.66	42.66	0.108216	1.213679	VDE	SLY	-0.123306	SP600	Energy
<b>COP</b>	61.779999	107.519997	108.300003	0.10252	0.95084	VDE	SPY	-0.123306	SP500	Energy
<b>OXY</b>	32.52	63.240002	69.169998	0.093736	1.190976	VDE	SPY	-0.123306	SP500	Energy
<b>MGPI</b>	76.68	97.610001	104.0	0.074244	1.204144	error	SLY	error	SP600	error

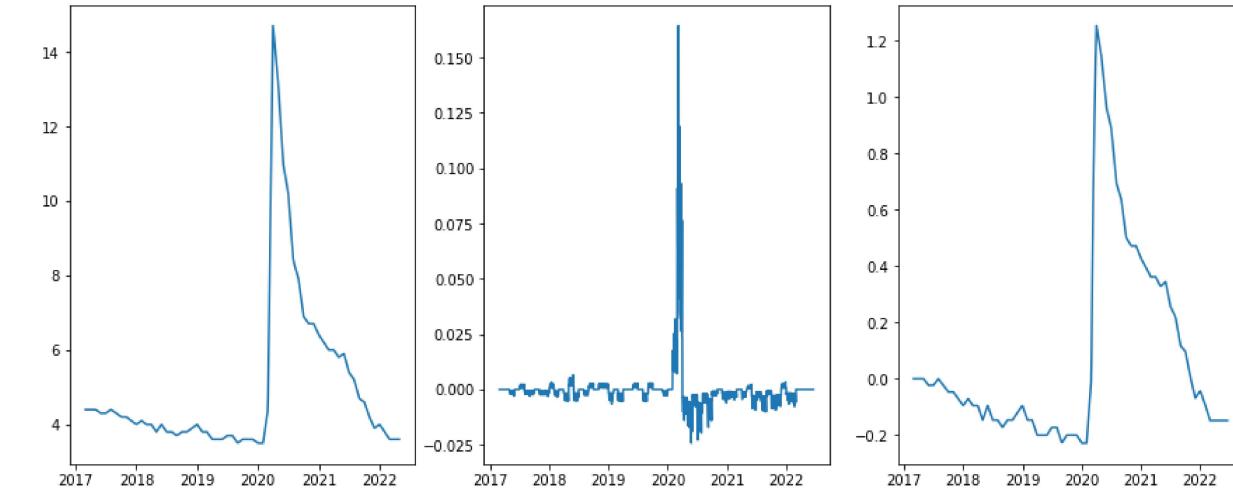
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Market volatility



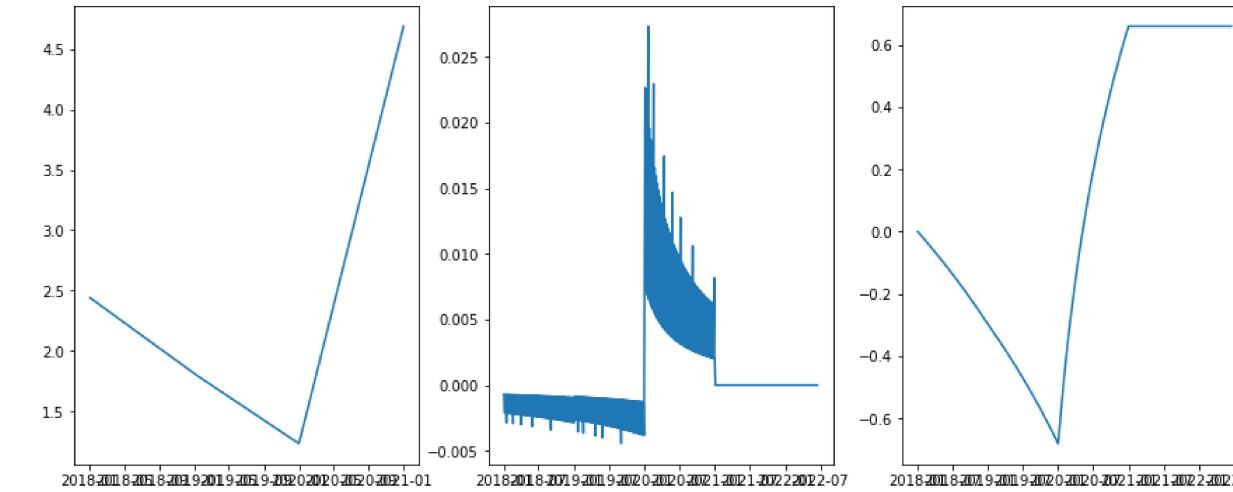
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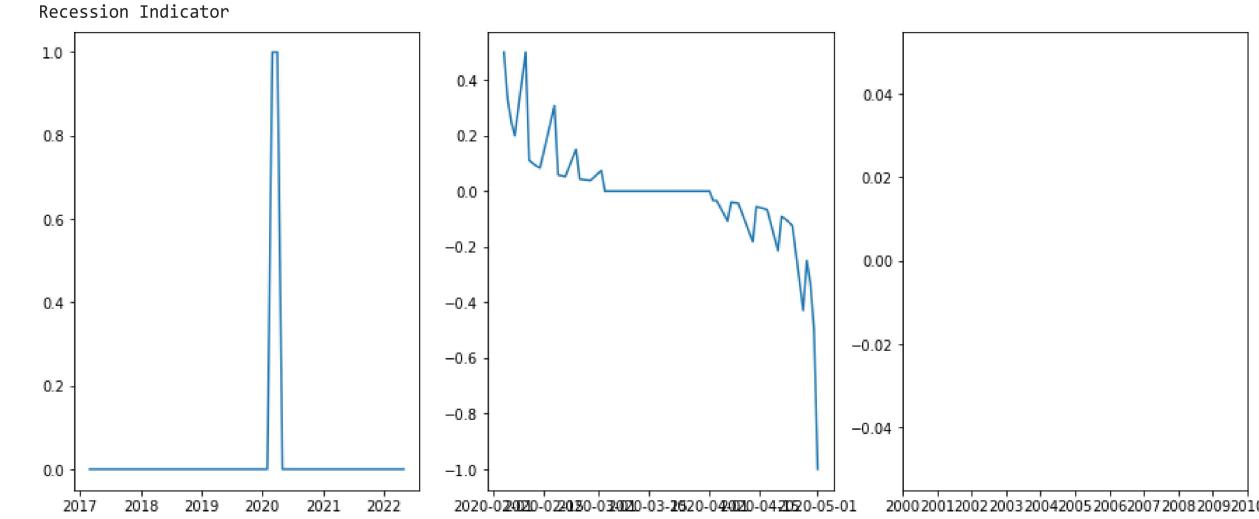
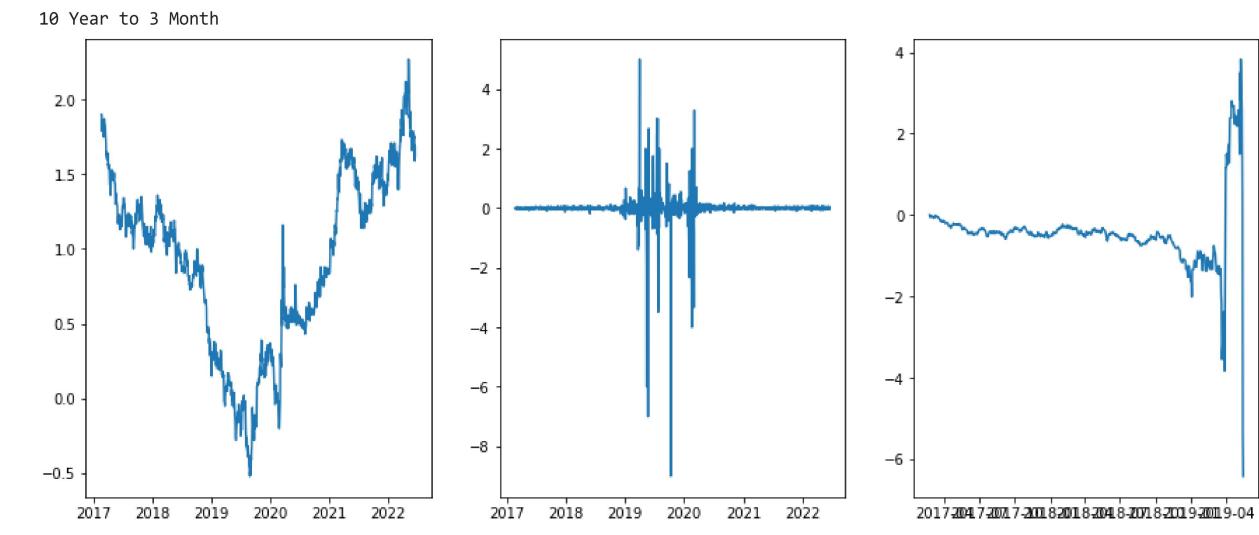
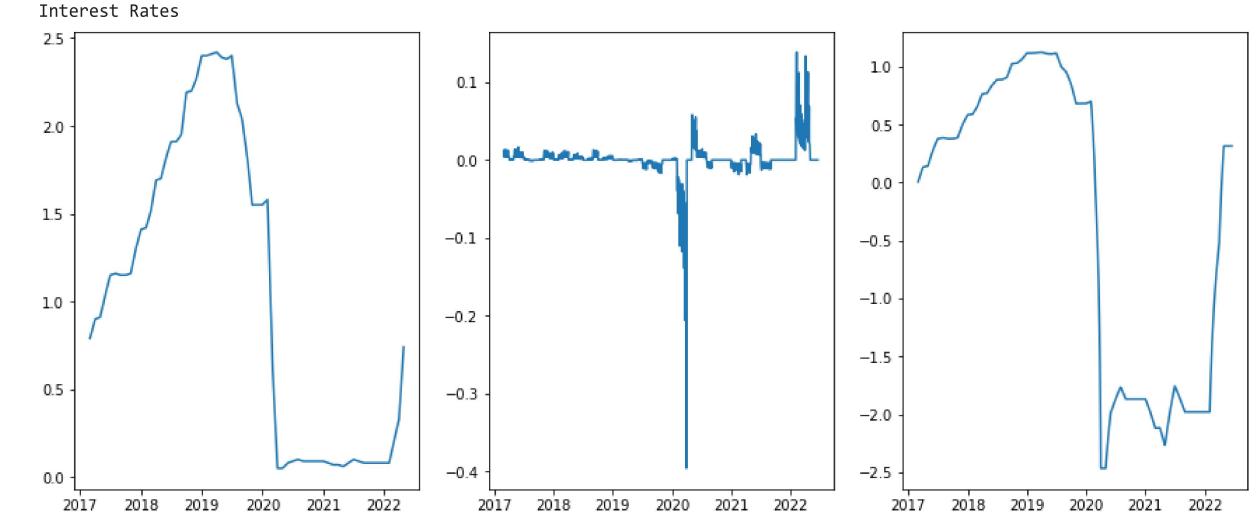


Unemployment



Inflation





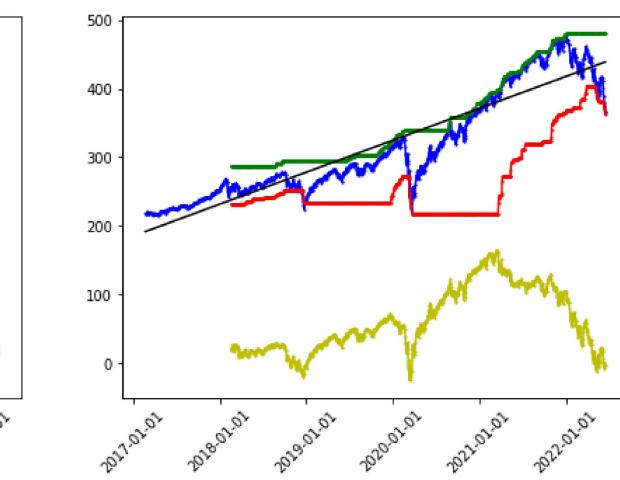
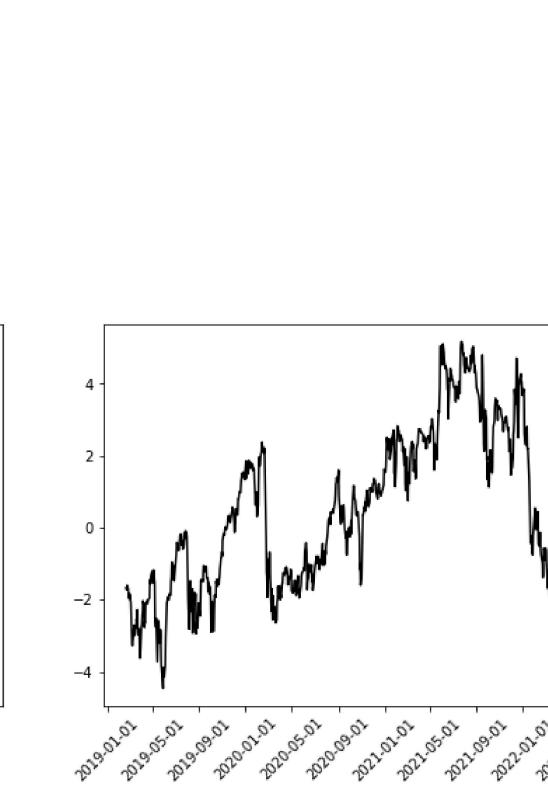
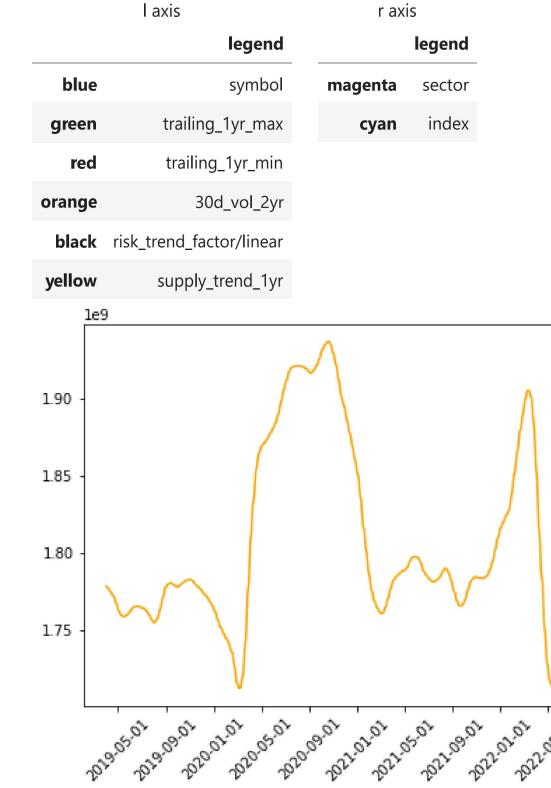
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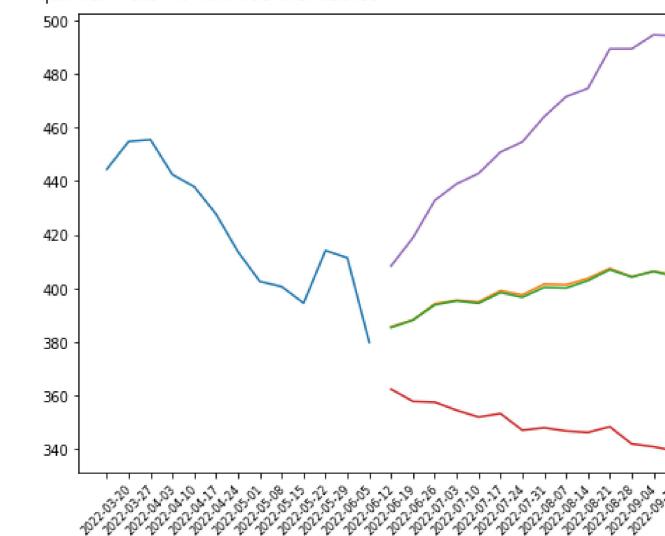
adf < .05 or .01, mean reverting  
 Hurst  
 > .5 - The time series is mean reverting.  
 = .5 - The time series is a Geometric Brownian Motion.  
 < .5 - The time series is trending.  
 symbol: SPY  
 sector: error  
 sector: error  
 Index: SP500  
 vol\_30d\_2yr: 1719938470.5078125  
 Sector 1YMF: -287.8400573730469  
 1YMF: -287.8400573730469  
 risk trend factor: -3.791860877423899  
     totalAssets    trailingPE  
 SPY 3.781762e+11 3.819317

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	365.859985	364.518828	396.470318	428.421808	419.420001	25.514981	368.390039	470.449963

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
SPY	1.183517	365.859985	1719938470.507812	0.369677	0.658465	0.422658



ets next 13 weeks  
 inner cv scores:  
 best model: ['mul', 'add', False]  
 best inner cv score, sdev (11 folds): 955.5530324568704 1191.7434001588522  
 test cv mean error, stdev (10 folds): 1006.6403589312771 1238.3804537753442  
 sell date: 2022-08-28  
 expected return: 0.11365382501453676  
 discounted return: 0.0015172956155042883  
 quarter return: 1.1496820237686733



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['options', ('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')]
symbol: SPTM
sector: error
sector: error
Index: SP1500
vol_30d_2yr: 10189559.1796875
Sector 1YMF: -34.95000076293945
1YMF: -34.95000076293945
risk trend factor: -3.8790224724143685
    totalAssets
SPTM 5.538233e+09

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	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	45.310001	44.984943	48.919841	52.854739	51.683968	3.088065	45.507837	57.860099

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
SPTM	1.653055	45.310001	10189559.179688	0.388272	0.658826	0.429487

l axis r axis

legend legend

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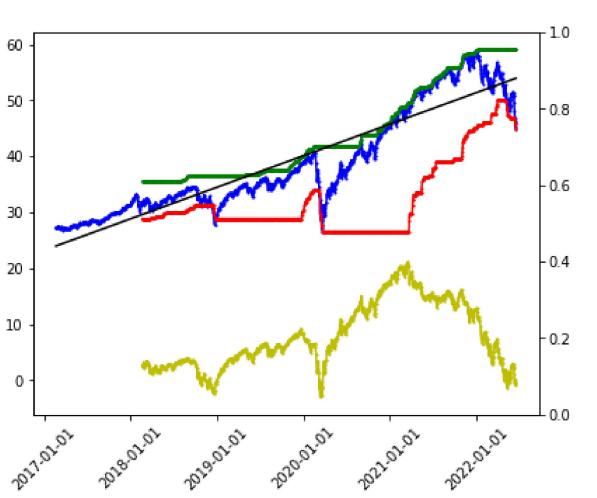
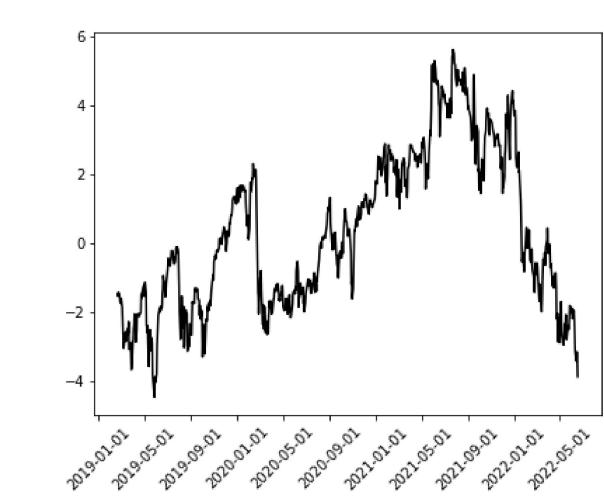
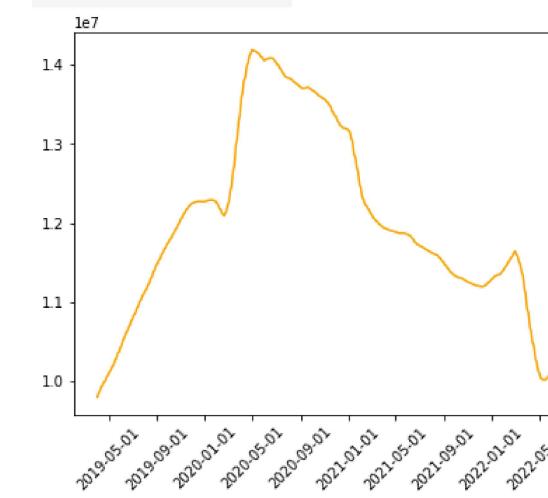
green	trailing_1yr_max	cyan	index
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red	trailing_1yr_min		
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orange	30d_vol_2yr		
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black	risk_trend_factor/linear		
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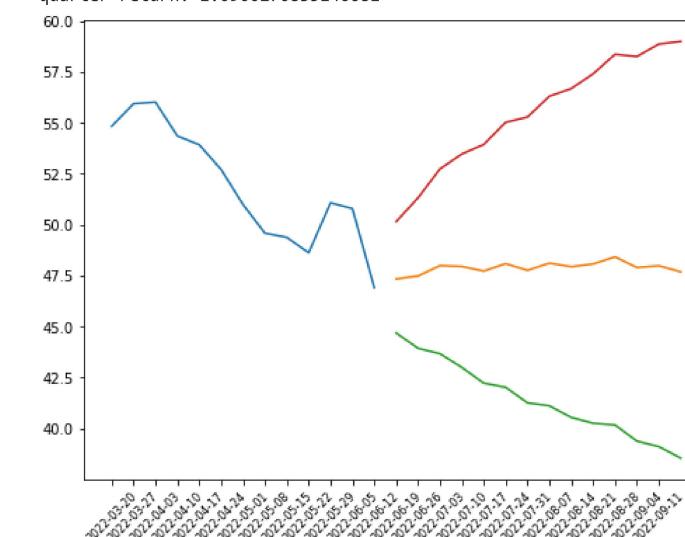
yellow	supply_trend_1yr		
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```

ets next 13 weeks
inner cv scores:
best model: ['add', 'add', True]
best inner cv score, sdev (11 folds): 14.216915876601824 16.99929328311187
test cv mean error, stdev (10 folds): 15.009608233904638 17.634103244062654
sell date: 2022-08-28
expected return: 0.06878861939823555
discounted return: 0.0009374232719445708
quarter return: 1.0900270835146681

```

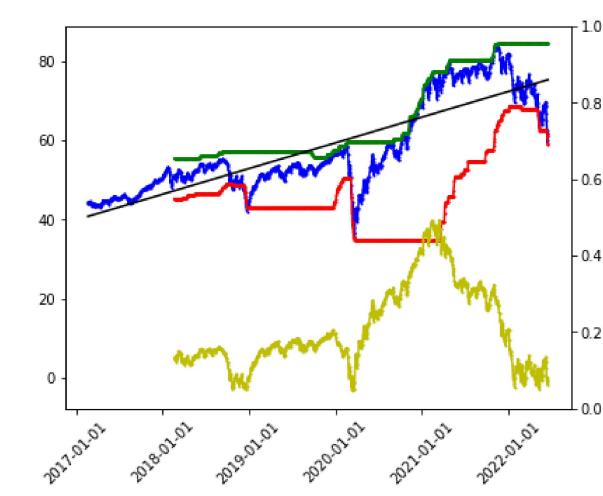
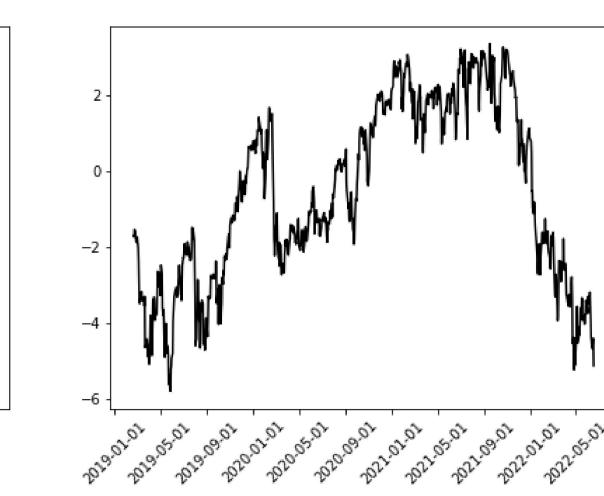
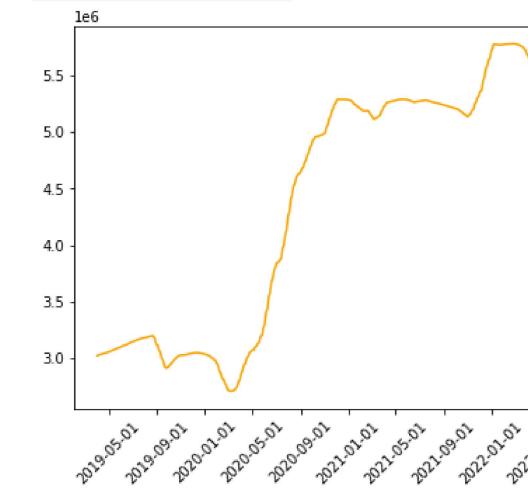


symbol: MDY  
 sector: error  
 sector: error  
 Index: SP400  
 vol\_30d\_2yr: 4938966.40625  
 Sector 1YMF: -69.05999755859375  
 1YMF: -69.05999755859375  
 risk trend factor: -5.134573474205833  
 Empty DataFrame  
 Columns: []  
 Index: [MDYG]

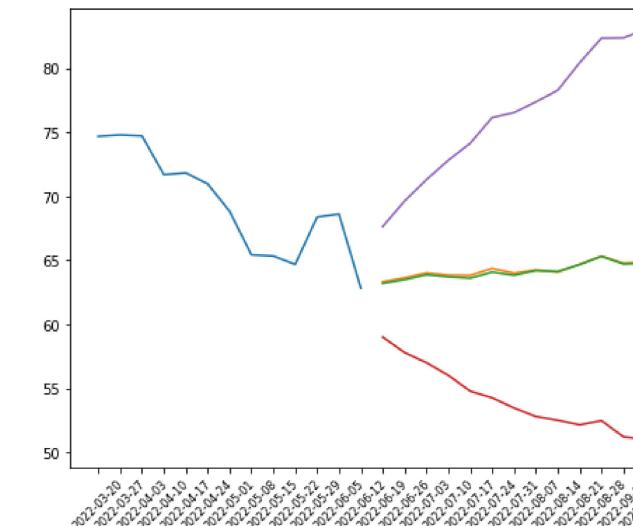
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	59.93	59.511554	65.413016	71.314478	69.046349	4.323319	60.399712	77.692987

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
MDYG	0.576598	59.93	4938966.40625	0.256027	0.494117	0.451147

	l axis	r axis
<b>legend</b>		<b>legend</b>
blue	symbol	magenta
green	trailing_1yr_max	cyan
red	trailing_1yr_min	index
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): 63.12940057605013 122.8158975223343  
 test cv mean error, stdev (10 folds): 68.77696792669757 127.44125691990534  
 sell date: 2022-08-28  
 expected return: 0.0900181626794404  
 discounted return: 0.0012147422603323577  
 quarter return: 1.1181644593788629

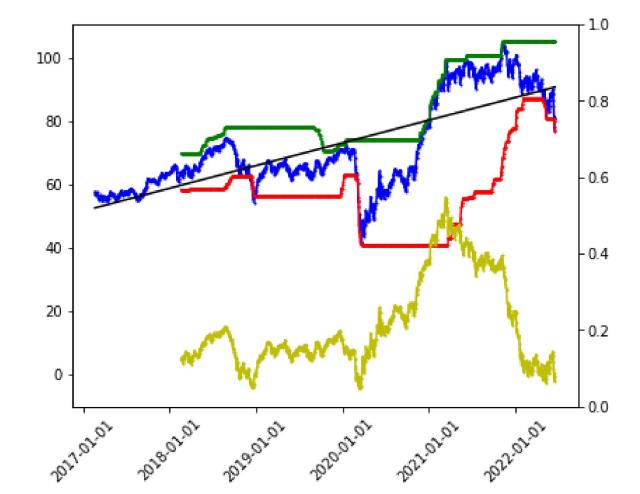
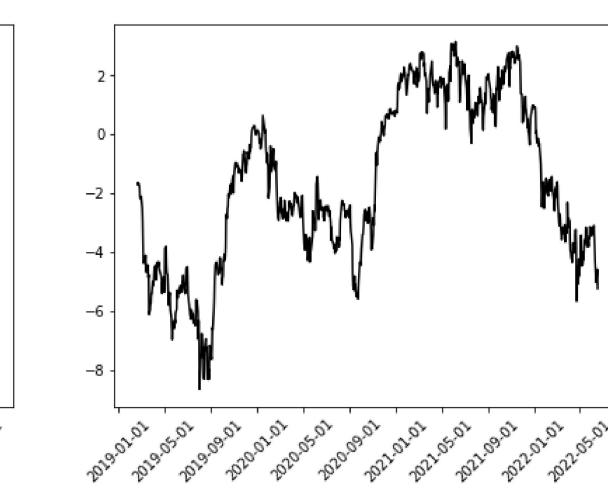
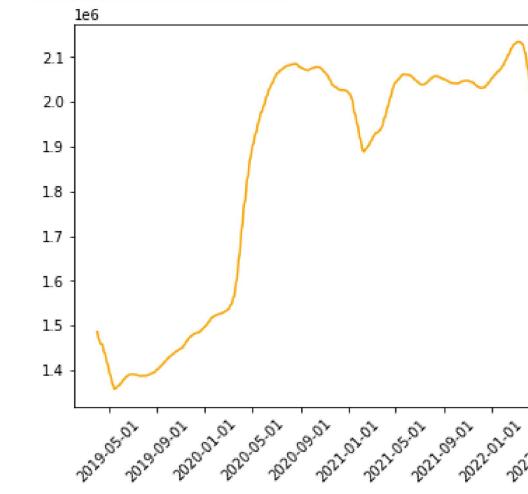


symbol: SLY  
 sector: error  
 sector: error  
 Index: SP600  
 vol\_30d\_2yr: 1808137.109375  
 Sector 1YMF: -77.27001953125  
 1YMF: -77.27001953125  
 risk trend factor: -5.242200185196592  
 Empty DataFrame  
 Columns: []  
 Index: [SLY]

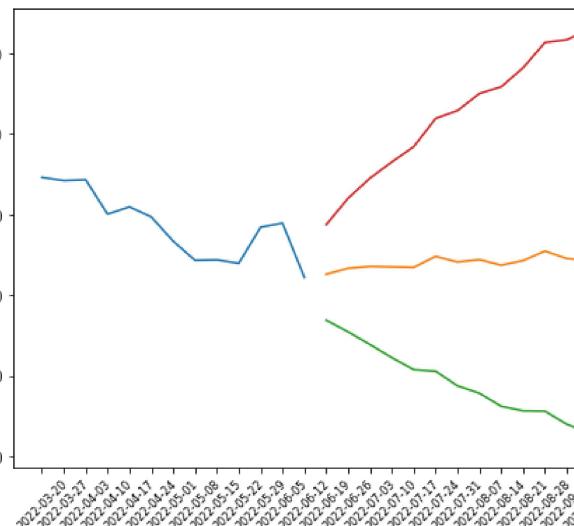
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	78.089996	78.068302	85.071269	92.074236	88.226349	4.474948	79.276452	97.176246

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
SLY	1.23276	78.089996	1808137.109375	0.449524	0.532018	0.51304

	l axis	r axis
<b>legend</b>		<b>legend</b>
blue	symbol	magenta
green	trailing_1yr_max	cyan
red	trailing_1yr_min	index
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): 103.79322813481043 141.07367968005195  
 test cv mean error, stdev (10 folds): 112.1151826866341 145.3621586882712  
 sell date: 2022-08-28  
 expected return: 0.09464636836855406  
 discounted return: 0.0012744926008916302  
 quarter return: 1.1243202867036735



symbol: VDE  
 sector: error  
 sector: Energy  
 Index: nan  
 vol\_30d\_2yr: 25785341.015625  
 Sector 1YMF: -3.82000732421875  
 1YMF: -3.82000732421875  
 risk trend factor: -0.12330558135216596  
     totalAssets trailingPE  
 VDE 1.106882e+10 8.493072

	Adj	Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDDev	90d_lower	90d_upper
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2022-06-17 102.349998 106.909959 119.43381 131.957661 112.539048 6.727104 99.08484 125.993256

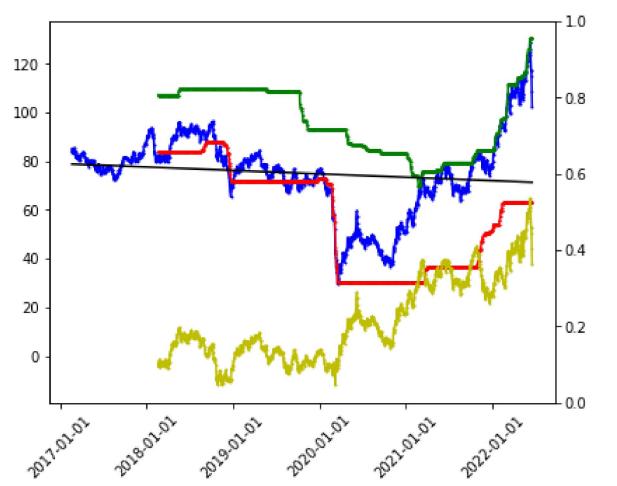
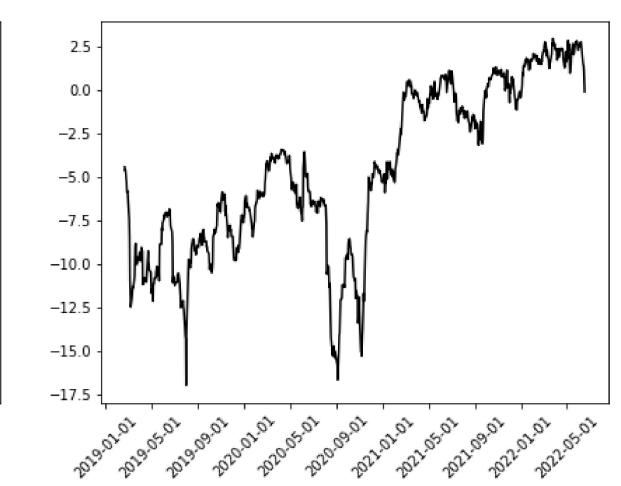
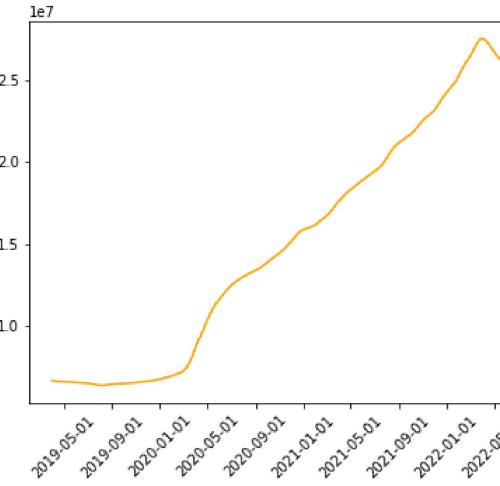
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
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VDE 0.896641 102.349998 25785341.015625 0.70127 0.621023 0.512979

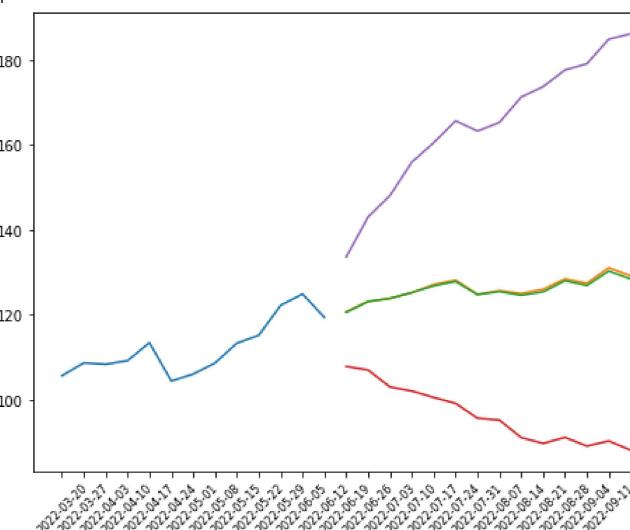
l axis r axis

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		



sets next 13 weeks  
 inner cv scores:  
 best model: ['mul', 'add', False]  
 best inner cv score, sdev (11 folds): 162.26028101973316 186.69475900021942  
 test cv mean error, stdev (10 folds): 177.93582907450698 188.7790932527092  
 sell date: 2022-09-11  
 expected return: 0.28041097653580677  
 discounted return: 0.0029122453338439325  
 quarter return: 1.3067422300135922



symbol: VDC  
 sector: error  
 sector: Consumer Defensive  
 Index: nan  
 vol\_30d\_2yr: 3264449.609375  
 Sector 1YMF: -74.80001831054688  
 1YMF: -74.80001831054688  
 risk trend factor: -2.283970024749523  
     totalAssets  
 VDC 8.239956e+09

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDDev 90d\_lower 90d\_upper

2022-06-17 177.059998 176.153403 185.845715 195.538026 194.674128 7.920194 178.833739 210.514517

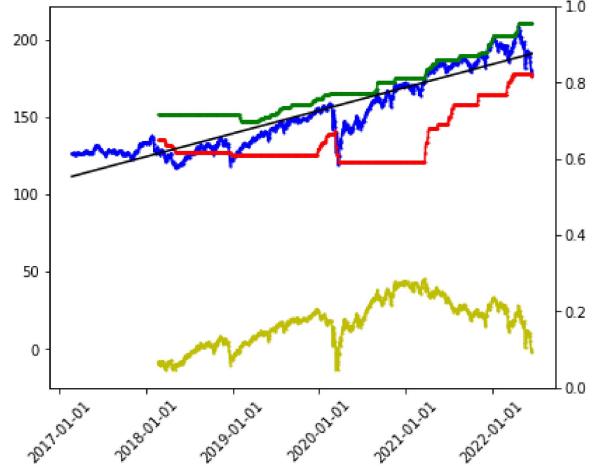
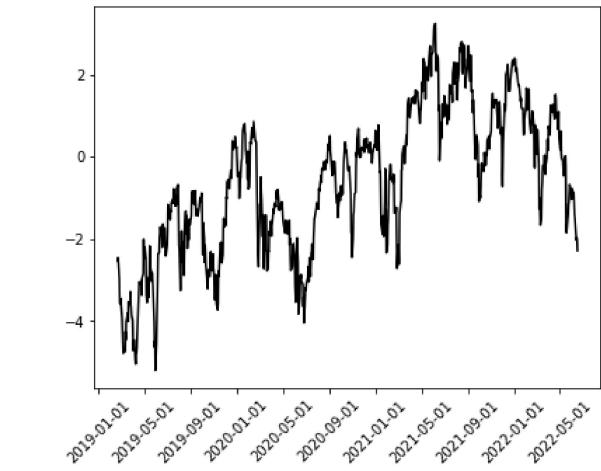
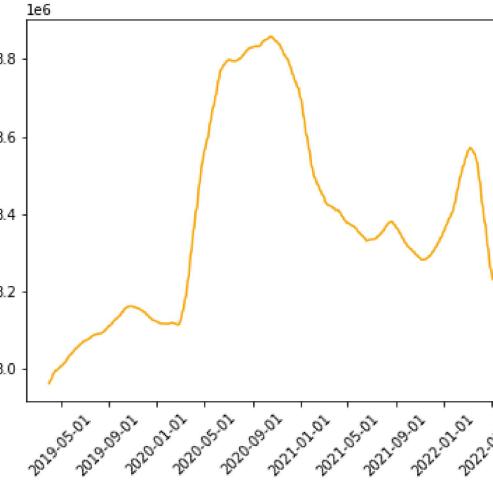
volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst

VDC 1.413592 177.059998 3264449.609375 0.48903 0.752482 0.355797

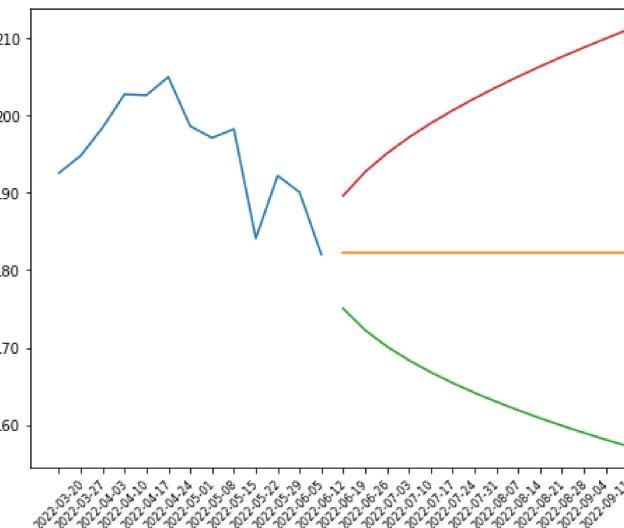
l axis r axis

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: [None, None]  
 best inner cv score, sdev (11 folds): 100.4250963612048 79.00566085677939  
 test cv mean error, stdev (10 folds): 95.34988963632661 81.13414161655594  
 sell date: 2022-06-19  
 expected return: 0.028967995014778737  
 discounted return: 0.028967995014778758  
 quarter return: 13.834763379181457



```
[ 'options', ('2022-07-15',) ]
symbol: VPU
sector: error
sector: Utilities
Index: nan
vol_30d_2yr: 5031661.71875
Sector 1YMF: -59.12998962402344
1YMF: -59.12998962402344
risk trend factor: -2.5204591944584465
    totalAssets
VPU 7.854255e+09
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
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**2022-06-17** 141.440002 142.694749 156.469524 170.244299 158.564286 5.736683 147.09092 170.037651

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
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**VPU** 1.250581 141.440002 5031661.71875 0.451674 0.569436 0.290073

l axis r axis

legend legend

blue	symbol	magenta	sector
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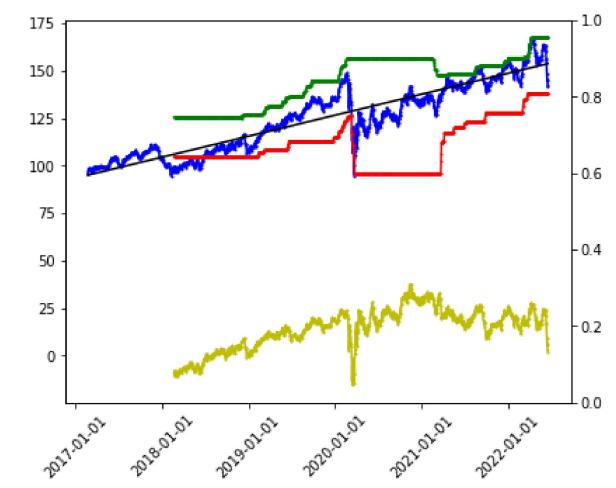
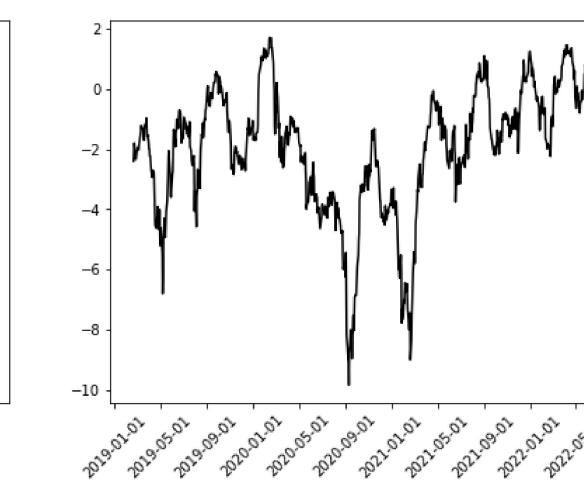
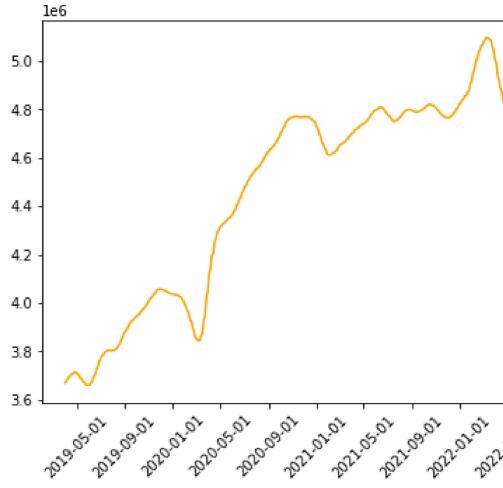
green	trailing_1yr_max	cyan	index
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red	trailing_1yr_min
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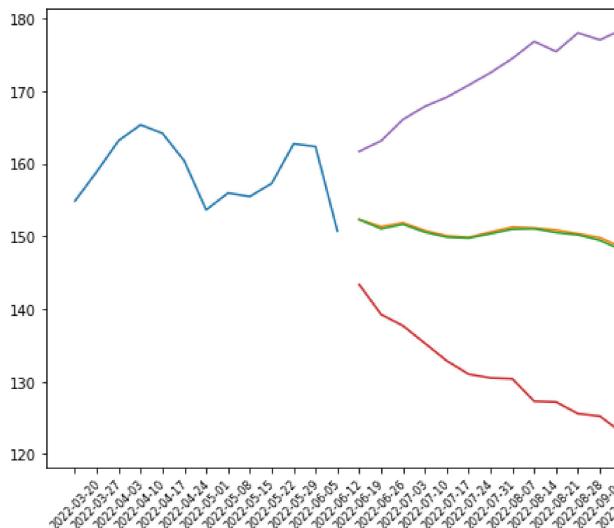
orange	30d_vol_2yr
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black	risk_trend_factor/linear
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yellow	supply_trend_1yr
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```
ets next 13 weeks
inner cv scores:
best model: ['add', 'mul', False]
best inner cv score, sdev (11 folds): 157.5005397449381 358.75139341691283
test cv mean error, stdev (10 folds): 172.2463620239812 373.06968106647014
sell date: 2022-06-19
expected return: 0.0768221407411059
discounted return: 0.07682214074110583
quarter return: 906.245463344889
```

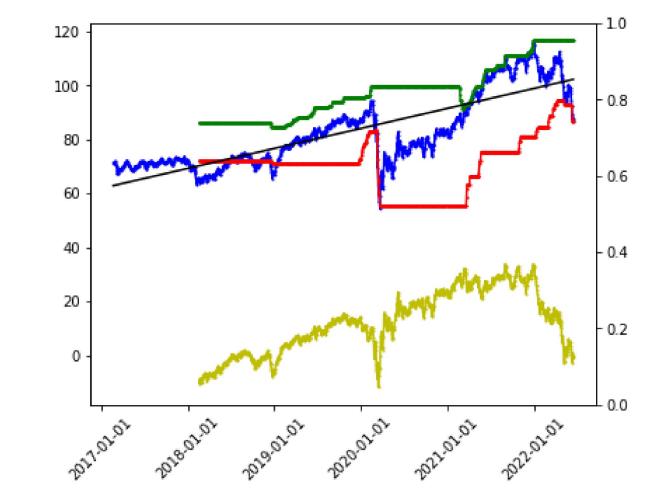
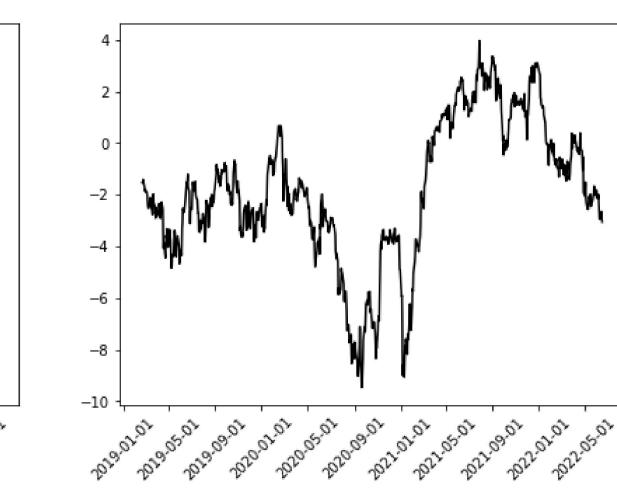
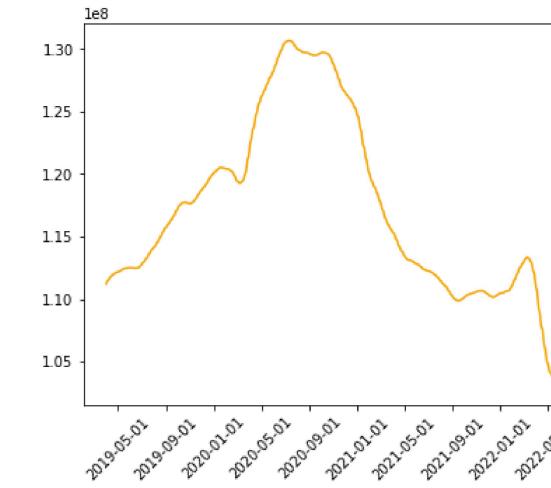


symbol: VNZ  
 sector: error  
 sector: Real Estate  
 Index: nan  
 vol\_30d\_2yr: 102932828.515625  
 Sector 1YMF: -76.09000396728516  
 1YMF: -76.09000396728516  
 risk trend factor: -3.053370235265123  
     totalAssets  
 VNZ 7.839537e+10

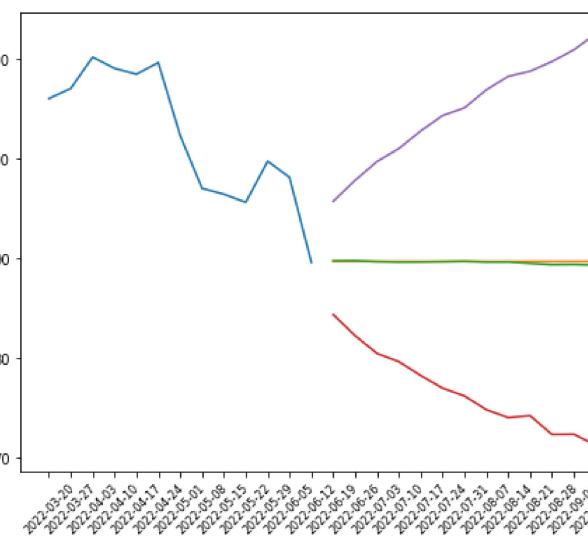
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	87.699997	86.580768	94.91381	103.246851	101.788572	7.189885	87.408801	116.168343

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VNZ	1.231534	87.699997	102932828.515625	0.296727	0.445676	0.39584

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: [None, 'mul', True]  
 best inner cv score, sdev (11 folds): 86.67543097788253 161.6982901186738  
 test cv mean error, stdev (10 folds): 93.69122194082982 167.98671393537586  
 sell date: 2022-06-19  
 expected return: 0.02205948107694154  
 discounted return: 0.022059481076941445  
 quarter return: 7.444023897114046



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

```
symbol: VAW  
sector: error  
sector: Basic Materials  
Index: nan  
vol_30d_2yr: 2683599.21875  
Sector 1YMF: -109.739990234375  
1YMF: -109.739990234375  
risk trend factor: -3.165271062358118  
    totalAssets  
VAW 5.085875e+09
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
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2022-06-17	162.800003	163.360294	181.546031	199.731768	187.277779	8.558355	170.161068	204.394489
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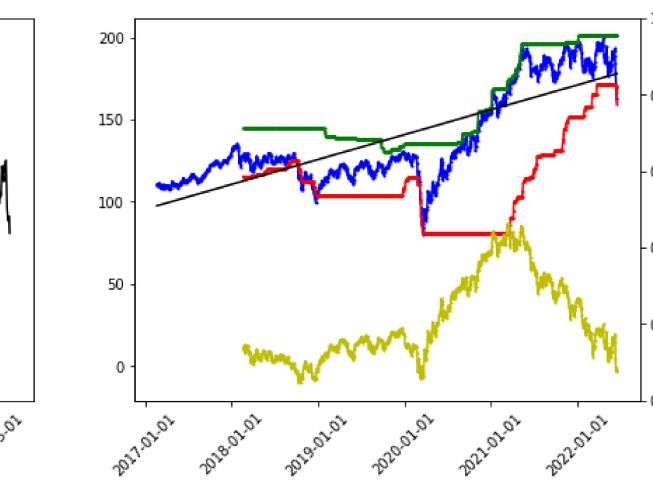
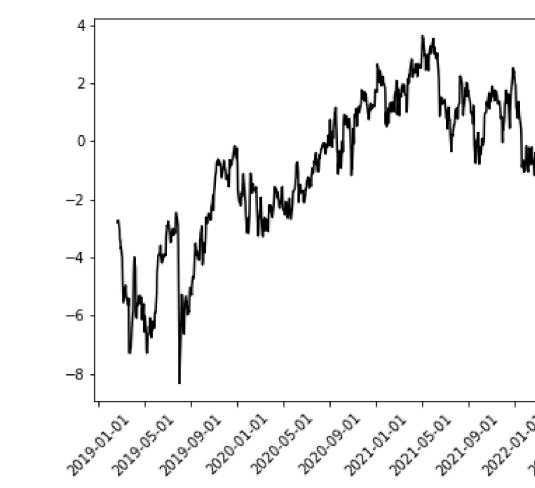
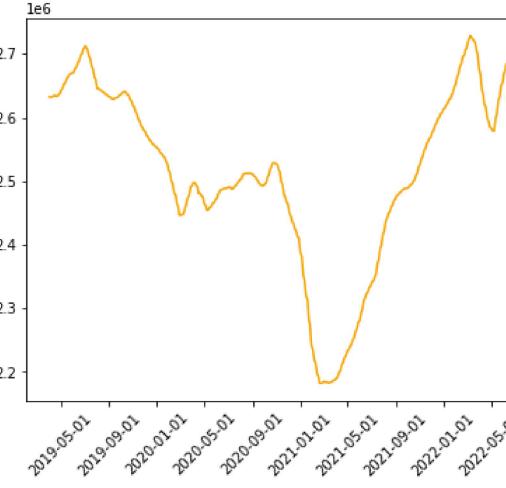
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
--	---------------	----------	-------------	---------	-----	-------

VAW	1.040096	162.800003	2683599.21875	0.553392	0.650248	0.42433
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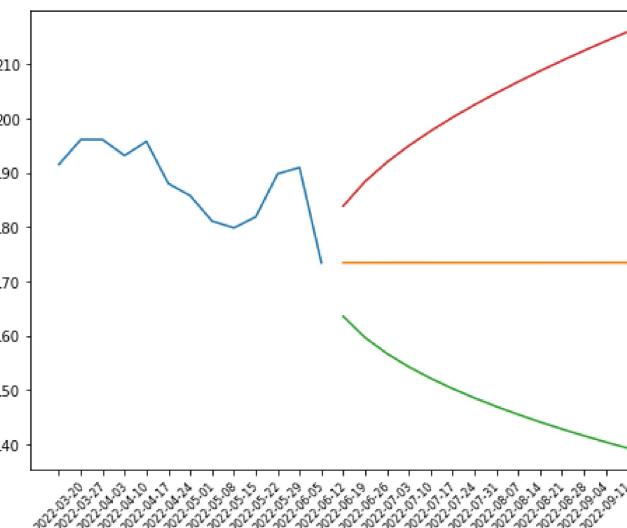
l axis r axis

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: [None, 'add', True]  
best inner cv score, stdev (11 folds): 205.0117757409078 229.50286867669206  
test cv mean error, stdev (10 folds): 219.71296999563498 235.71454689543646  
sell date: 2022-09-18  
expected return: 0.06524432418026509  
discounted return: 0.0006872380532618738  
quarter return: 1.0652443241802583



```
[ 'options', ('2022-08-19',) ]
symbol: VHT
sector: error
sector: Healthcare
Index: nan
vol_30d_2yr: 5367987.5
Sector 1YMF: -122.20997619628906
1YMF: -122.20997619628906
risk trend factor: -3.3236323632363236
    totalAssets trailingPE
VHT 1.866525e+10 4.748669
```

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

**2022-06-17** 220.210007 218.770447 234.353333 249.93622 243.78492 11.544258 220.696404 266.873435

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
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VHT 1.223885 220.210007 5367987.5 0.406751 0.629182 0.332826

l axis r axis

legend legend

blue	symbol	magenta	sector
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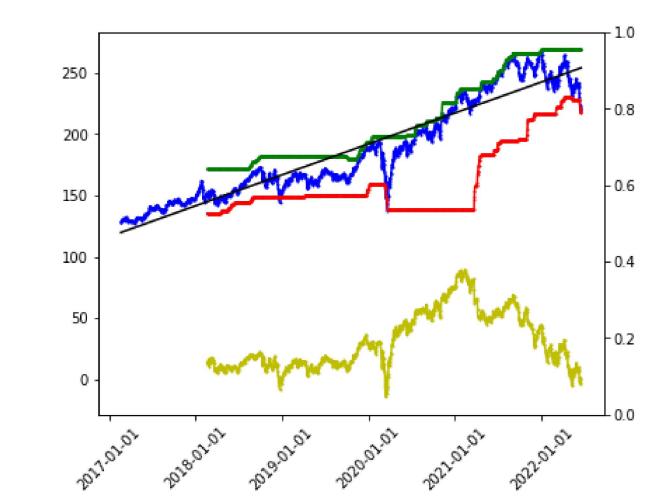
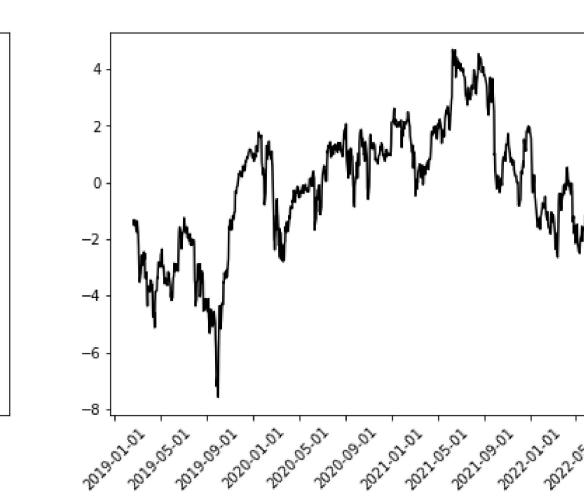
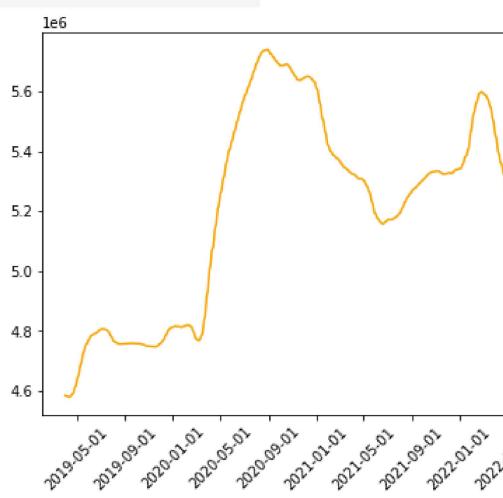
green	trailing_1yr_max	cyan	index
-------	------------------	------	-------

red	trailing_1yr_min		
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orange	30d_vol_2yr		
--------	-------------	--	--

black	risk_trend_factor/linear		
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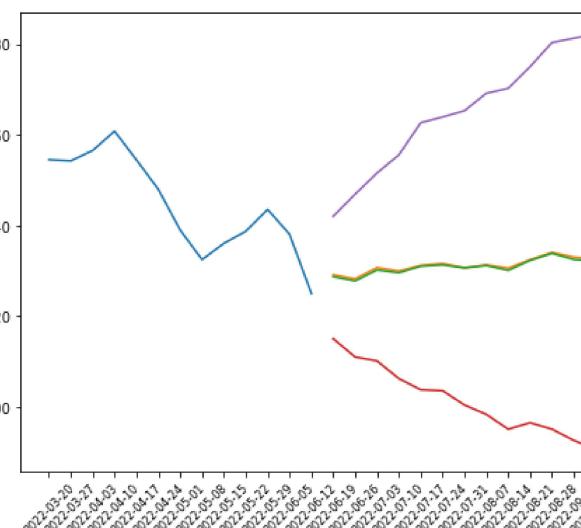
yellow	supply_trend_1yr		
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```

ets next 13 weeks
inner cv scores:
best model: ['add', 'mul', True]
best inner cv score, sdev (11 folds): 237.05413896527213 269.8255299596183
test cv mean error, stdev (10 folds): 227.72491126898126 281.29883208944585
sell date: 2022-08-28
expected return: 0.0629130773865448
discounted return: 0.0008597119519702101
quarter return: 1.082268737049756

```



```
symbol: VIS
sector: error
sector: Industrials
Index: nan
vol_30d_2yr: 3372254.1015625
Sector 1YMF: -141.5800018310547
1YMF: -141.5800018310547
risk trend factor: -4.51466833786734
Empty DataFrame
Columns: []
Index: [VIS]
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
<b>2022-06-17</b>	159.809998	159.424409	172.598254	185.772099	181.362857	9.892736	161.577386	201.14

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf
VIS	0.869685	159.809998	3372254.101562	0.42518	0.484643

5

gend

## legend

---

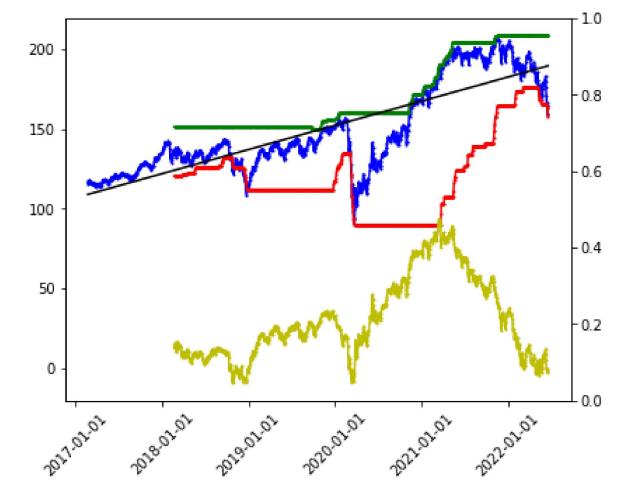
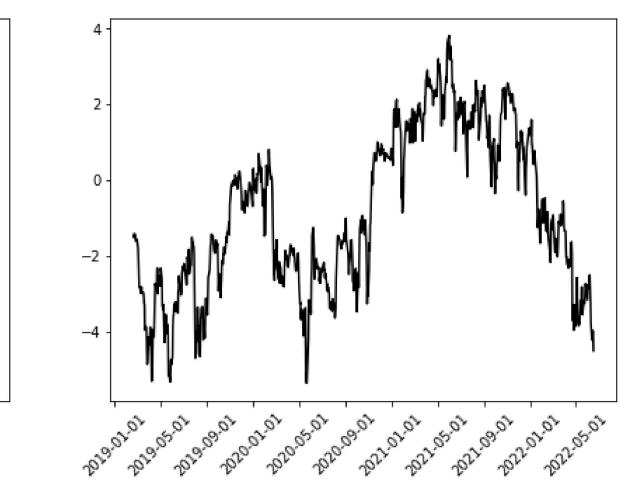
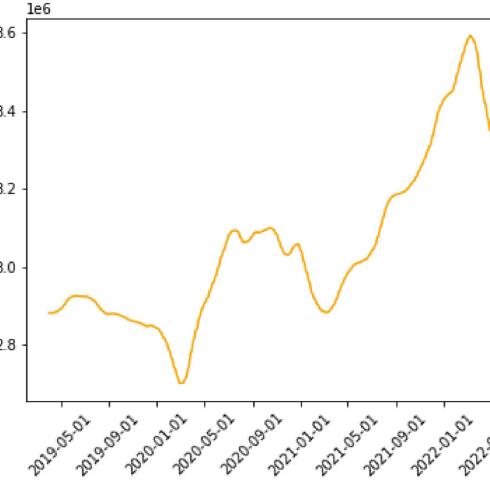
**blue** symbol

**green** trailing\_1yr\_max

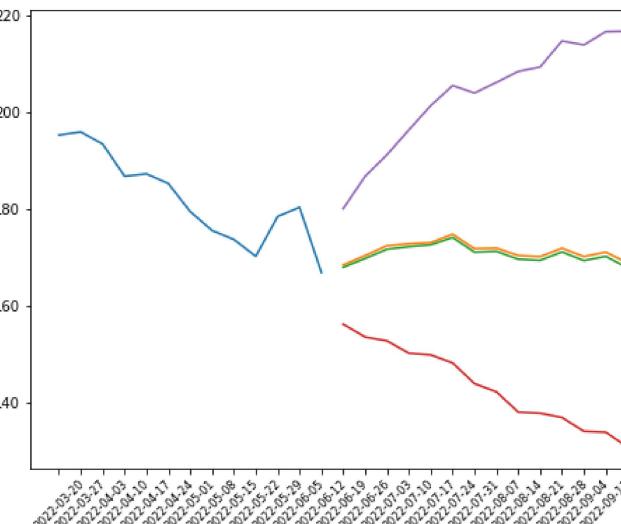
**red** trailing\_1yr\_min

**orange**      30d\_Vol\_2yr

**black** risk\_trend\_factor/linear



```
ets next 13 weeks
inner cv scores:
best model: ['mul', 'add', True]
best inner cv score, sdev (11 folds): 2
test cv mean error, stdev (10 folds): 2
sell date: 2022-07-24
expected return: 0.09378205579421175
discounted return: 0.00249314345994600
quarter return: 1.2574473426776744
```



```
[ 'options', ('2022-08-19',) ]
symbol: VFH
sector: error
sector: Financial Services
Index: nan
vol_30d_2yr: 16520124.609375
Sector 1YMF: -72.2699966430664
1YMF: -72.2699966430664
risk trend factor: -4.617890709055871
    totalAssets
VFH 1.046217e+10
```

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

**2022-06-17** 75.849998 74.907534 82.472858 90.038182 86.832222 5.55532 75.721582 97.942862

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

**VFH** 1.270717 75.849998 16520124.609375 0.43829 0.480904 0.491635

l axis r axis

legend legend

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

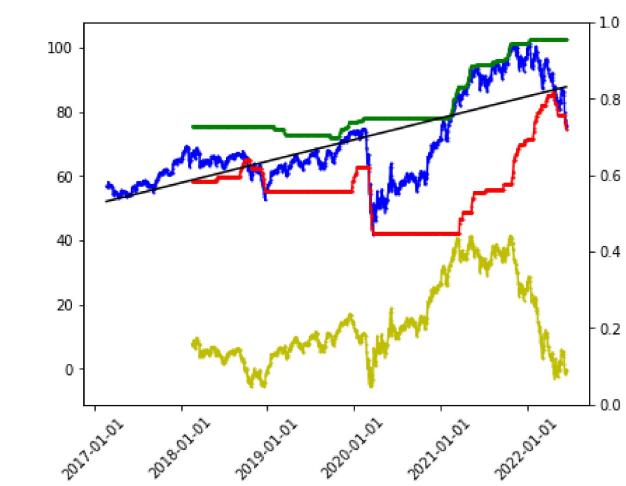
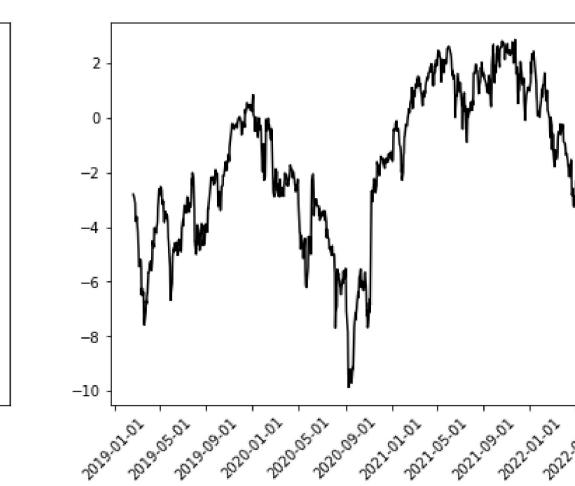
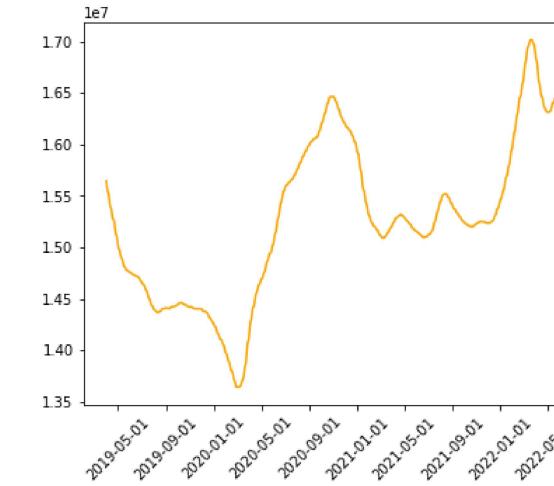
green	trailing_1yr_max	cyan	index
-------	------------------	------	-------

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

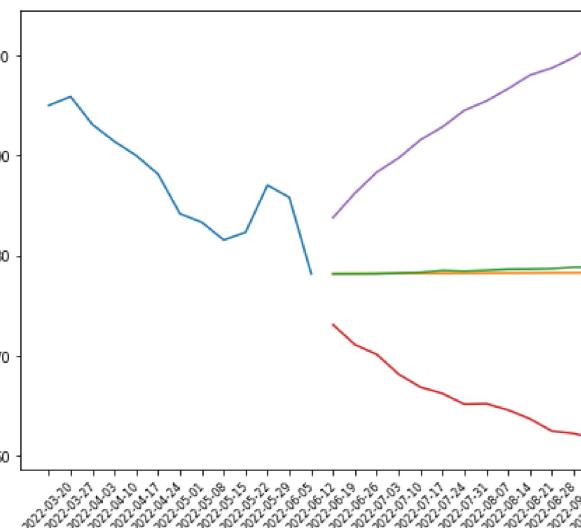
orange	30d_vol_2yr
--------	-------------

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

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



```
ets next 13 weeks
inner cv scores:
best model: [None, 'mul', False]
best inner cv score, sdev (11 folds): 54.780343042381176 49.08282008546465
test cv mean error, stdev (10 folds): 57.394667758940955 50.7430195700265
sell date: 2022-09-18
expected return: 0.032192068425141204
discounted return: 0.00034445890536605184
quarter return: 1.03219206842515
```



```
[ 'options', ('2022-08-19',)]
symbol: VCR
sector: error
sector: Consumer Cyclical
Index: nan
vol_30d_2yr: 2596418.1640625
Sector 1YMF: -359.96002197265625
1YMF: -359.96002197265625
risk trend factor: -4.72140697901556
    totalAssets
    totals
VCR 6.015592e+09
```

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

**2022-06-17** 225.869995 218.39857 242.946031 267.493493 271.133333 28.125894 214.881544 327.385121

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

**VCR** 1.292819 225.869995 2596418.164062 0.205768 0.641228 0.473825

I axis r axis

legend legend

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

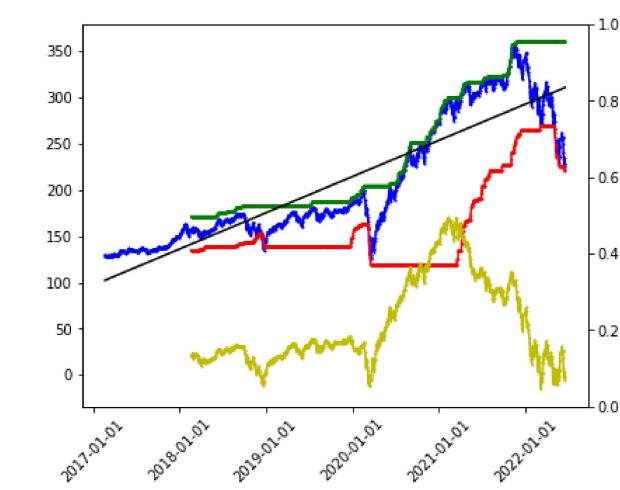
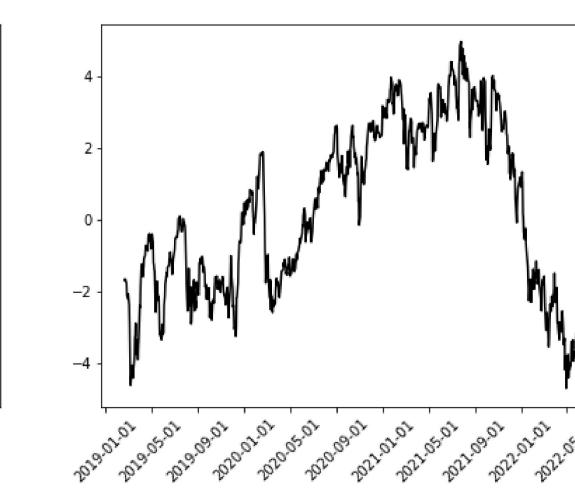
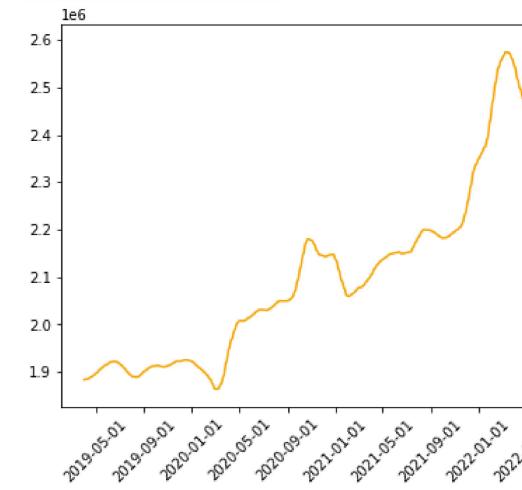
green	trailing_1yr_max	cyan	index
-------	------------------	------	-------

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

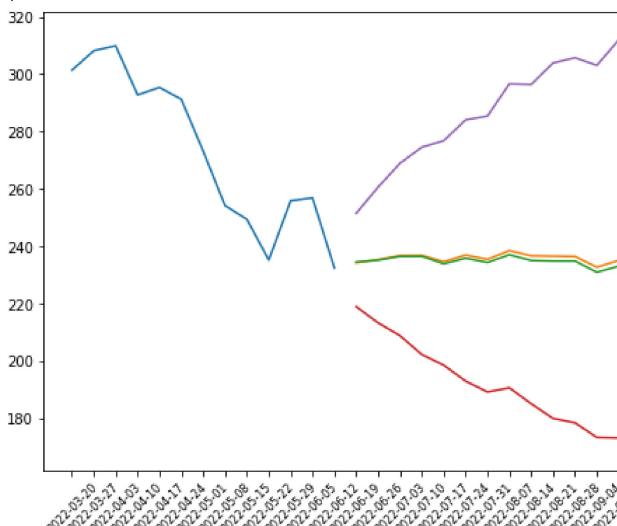
orange	30d_vol_2yr
--------	-------------

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): 1049.0894816988537 1552.387658053613  
test cv mean error, stdev (10 folds): 1148.847289505217 1594.2752342032827  
sell date: 2022-08-07  
expected return: 0.05582835139949714  
discounted return: 0.0010871029895367368  
quarter return: 1.1051257748984558



symbol: VGT  
 sector: error  
 sector: Technology  
 Index: nan  
 vol\_30d\_2yr: 14308852.5390625  
 Sector 1YMF: -363.4599914550781  
 1YMF: -363.4599914550781  
 risk trend factor: -4.954471974241429  
     totalAssets  
 VGT 5.138536e+10

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d\_lower 90d\_upper

2022-06-17 319.809998 313.391914 345.179842 376.96777 371.755716 29.840347 312.075022 431.43641

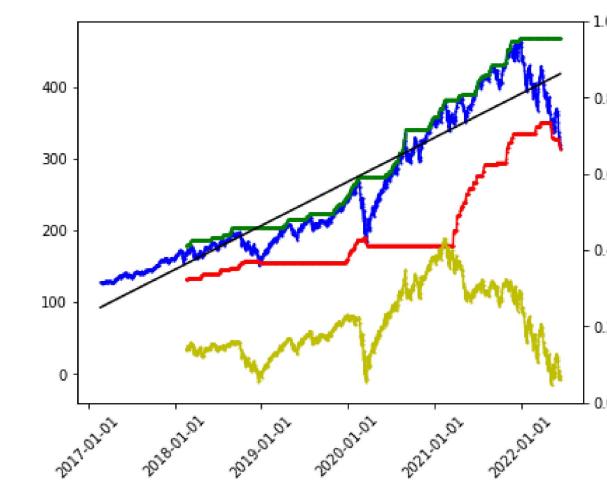
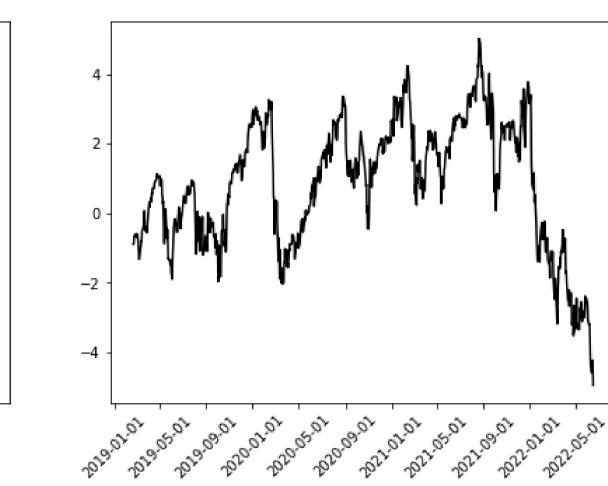
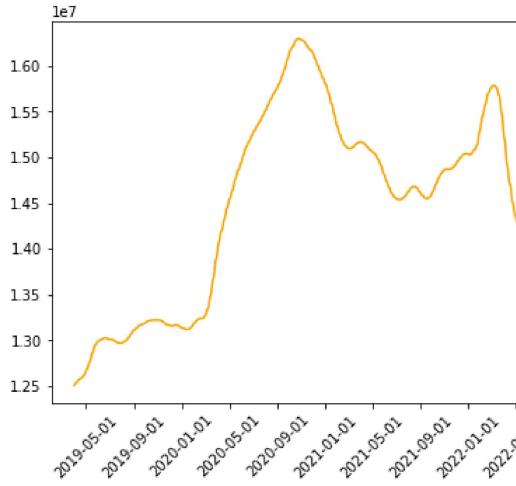
volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst

VGT 1.152846 319.809998 14308852.539062 0.262275 0.685573 0.43018

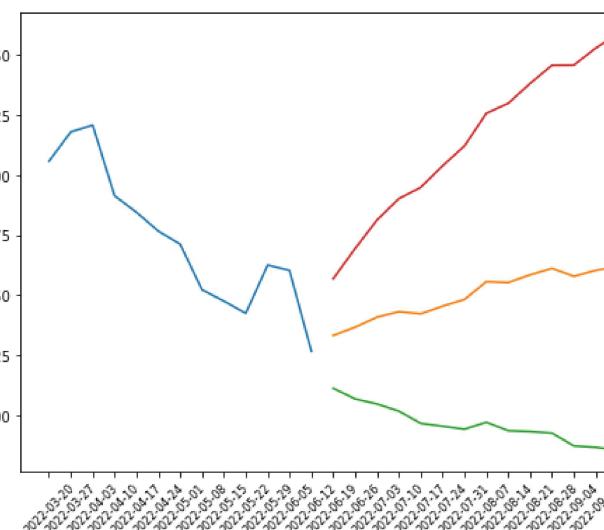
l axis r axis

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, stdev (11 folds): 992.8049834301754 793.2003711733333  
 test cv mean error, stdev (10 folds): 1054.935324913171 805.991064854646  
 sell date: 2022-09-18  
 expected return: 0.13187955443232405  
 discounted return: 0.0013474240638169377  
 quarter return: 1.131879554432333

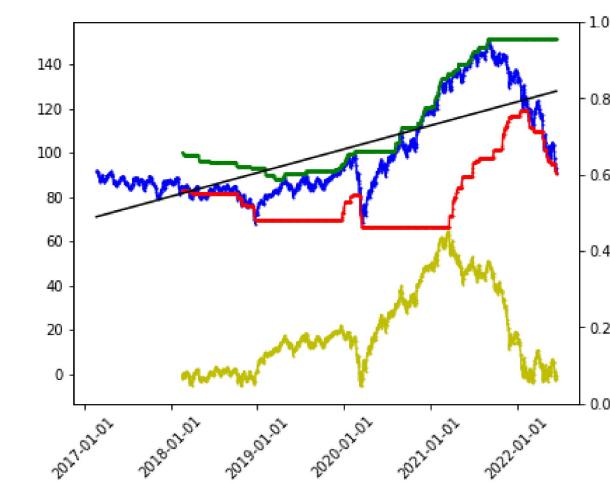
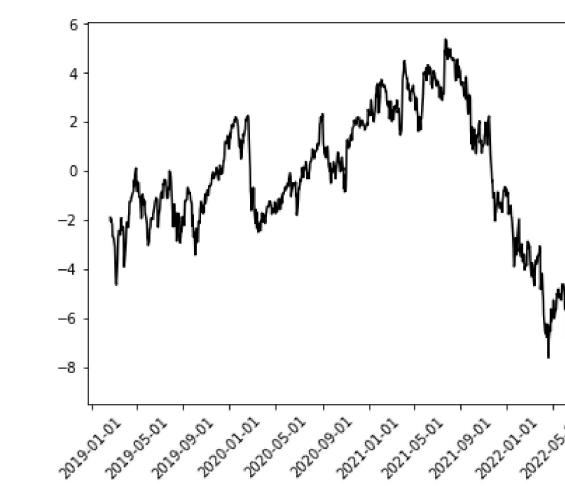
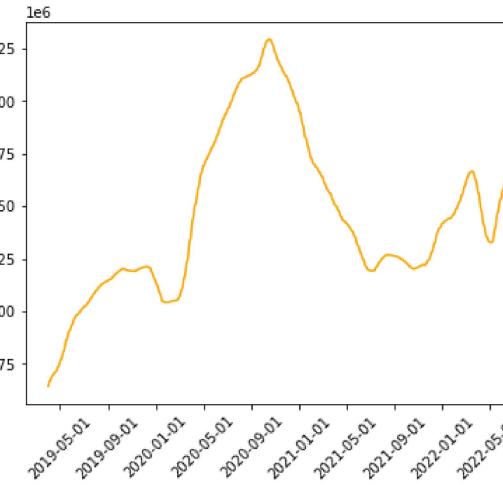


```
[options, ('2022-08-19',)]
symbol: VOX
sector: error
sector: Communication Services
Index: nan
vol_30d_2yr: 4644931.8359375
Sector 1YMF: -166.010009765625
1YMF: -166.010009765625
risk trend factor: -8.783597691159713
Empty DataFrame
Columns: []
Index: [VOX]
```

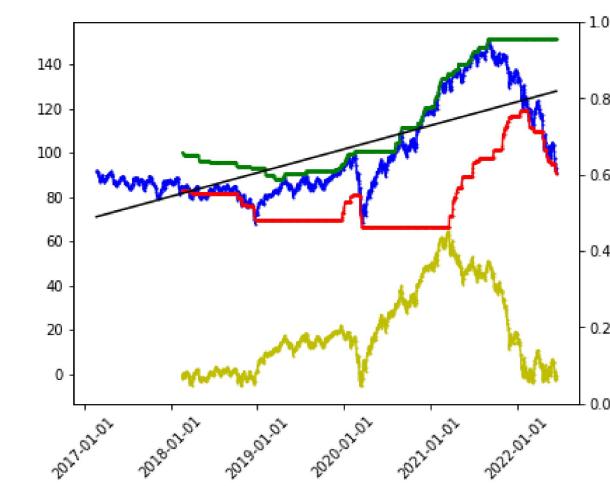
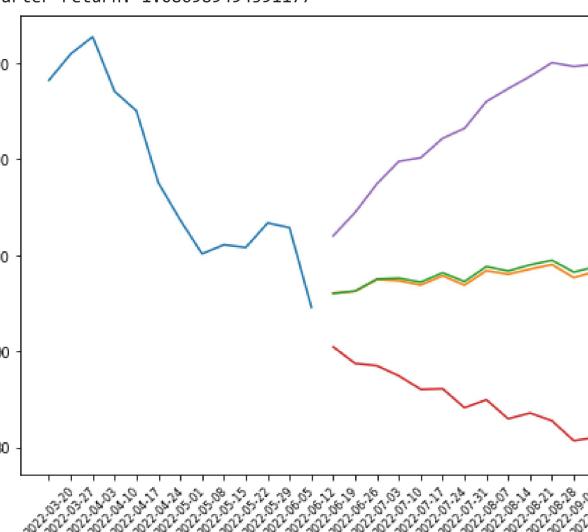
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDDev	90d_lower	90d_upper
2022-06-17	92.860001	91.464788	99.415079	107.365371	107.439841	9.28909	88.861661	126.018022

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VOX	1.840996	92.860001	4644931.835938	0.059723	0.708136	0.512969

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): 85.90984878407943 73.83518328694369  
test cv mean error, stdev (10 folds): 91.80168415960244 74.93294839457018  
sell date: 2022-08-28  
expected return: 0.06648933699165002  
discounted return: 0.0009070626925808956  
quarter return: 1.086989494591177



```
[options, ('2022-07-15',)]
symbol: ACC
sector: Real Estate
Index: SP400
vol_30d_2yr: 27009982.03125
Sector 1YMF: 13.440017700195312
1YMF: 13.440017700195312
risk trend factor: 10.926847725292072
    beta currentRatio debtToEquity dividendRate dividendYield \
ACC 1.00147      2.184     122.276    1.88      0.029

    earningsGrowth     ebitda ebitdaMargins forwardPE grossMargins \
ACC   1.498 466354240 0.47421 98.81539 0.5349

    grossProfits heldPercentInstitutions industry marketCap \
ACC 498042000 0.97986 REIT-Residential 8938053632

    operatingMargins payoutRatio pegRatio priceToBook \
ACC 0.19318      4.7     1.96 2.993987

    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
ACC 9.088625 0.06005 1.888 0.01582

    returnOnEquity revenueGrowth revenuePerShare sector \
ACC 0.01872      0.176     7.081 Real Estate

    sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
ACC 139156992 0.86 87656000 0.63 4008523008

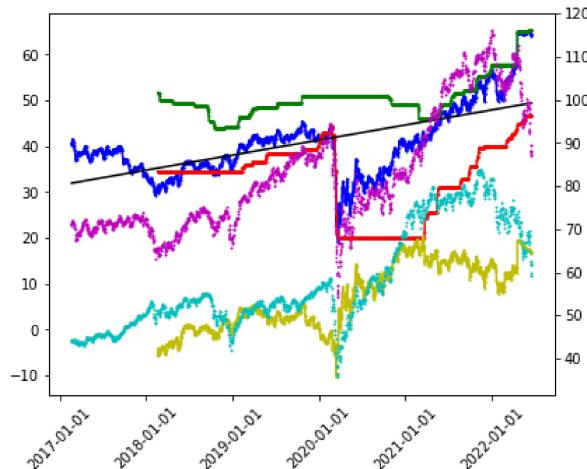
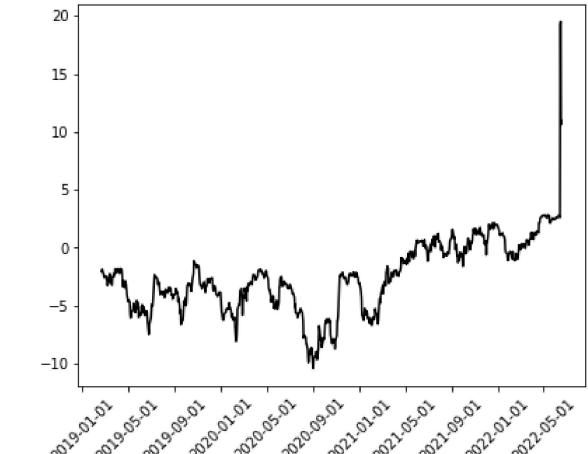
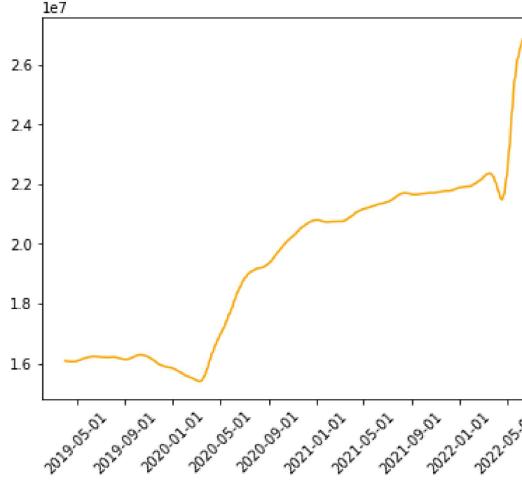
    totalRevenue trailingPE
ACC 983433024 513.84
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSD	90d_lower	90d_upper
<b>2022-06-17</b>	64.230003	64.240713	64.712222	65.183731	62.082857	3.916774	54.249309	69.916406

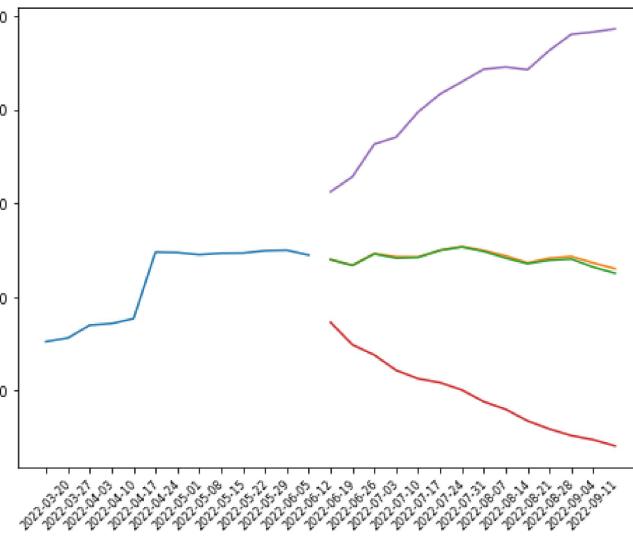
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
<b>ACC</b>	2.134689	64.230003	27009982.03125	0.97101	0.978004	0.420279

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

Sector 1YMF: -76.09000396728516  
Sector Volume Factor: 1.2315342134094496  
Sector Risk Trend Factor: -3.053370235265123  
Index 1YMF: -69.05999755859375  
Index Volume Factor: 0.5765983741853883  
Index Risk Trend Factor: -5.134573474205833



ets next 13 weeks  
inner cv scores:  
best model: ['add', 'mul', True]  
best inner cv score, sdev (11 folds): 14.002980457032441 10.442431974910885  
test cv mean error, stdev (10 folds): 15.172164708897602 10.242651718117648  
sell date: 2022-07-31  
expected return: 0.01770938315542047  
discounted return: 0.0004083251823976397  
quarter return: 1.0382724739785627



	2022-03-31	2021-12-31	2021-09-30	\
['quarterly_balance_sheet',				
Capital Surplus	4.693018e+09	4.694242e+09	4.538210e+09	
Total Liab	4.218002e+09	4.273301e+09	4.501487e+09	
Total Stockholder Equity	3.093994e+09	3.117378e+09	2.982993e+09	
Minority Interest	1.842520e+08	1.839070e+08	6.423900e+07	
Deferred Long Term Liab	7.300000e+06	3.450000e+07	2.750000e+07	
Total Assets	7.496248e+09	7.574586e+09	7.548719e+09	
Common Stock	1.393000e+06	1.391000e+06	1.390000e+06	
Other Current Assets	1.698800e+07	1.432600e+07	2.016300e+07	
Other Liab	1.522020e+08	1.697290e+08	1.850330e+08	
Treasury Stock	-1.600417e+09	1.578255e+09	-1.556607e+09	
Other Assets	2.143290e+08	1.773490e+08	2.318220e+08	
Cash	8.765600e+07	1.2083510e+08	4.207300e+07	
Total Current Liabilities	5.727700e+07	1.168230e+08	9.838000e+07	
Other Stockholder Equity	-1.596530e+09	-1.574312e+09	-1.551896e+09	
Property Plant Equipment	7.156799e+09	7.198609e+09	7.232212e+09	
Total Current Assets	1.251200e+08	1.678280e+08	8.468500e+07	
Net Tangible Assets	3.093994e+09	3.086578e+09	2.982993e+09	
Net Receivables	2.047600e+07	3.268700e+07	2.218800e+07	
Long Term Debt	3.509626e+09	3.513684e+09	3.723677e+09	
Accounts Payable	5.727700e+07	9.306700e+07	9.838000e+07	
Intangible Assets	NaN	3.080000e+07	NaN	

	2021-06-30			
Capital Surplus	4.515450e+09			
Total Liab	4.437234e+09			
Total Stockholder Equity	3.035925e+09			
Minority Interest	6.528200e+07			
Deferred Long Term Liab	2.460000e+07			
Total Assets	7.538441e+09			
Common Stock	1.386000e+06			
Other Current Assets	2.747600e+07			
Other Liab	1.373950e+08			
Treasury Stock	-1.480911e+09			
Other Assets	2.333970e+08			
Cash	3.028300e+07			
Total Current Liabilities	6.970500e+07			
Other Stockholder Equity	-1.476181e+09			
Property Plant Equipment	7.237327e+09			
Total Current Assets	6.771700e+07			
Net Tangible Assets	3.035925e+09			
Net Receivables	9.775000e+06			
Long Term Debt	3.734507e+09			
Accounts Payable	6.970500e+07			
Intangible Assets	NaN			]

	2022-03-31	2021-12-31	\
['quarterly_cashflow',			
Net Income	39183000.0	40712000.0	
Change To Liabilities	0.0	-5928000.0	
Total Cashflows From Investing Activities	NaN	-39104000.0	
Net Borrowings	NaN	-203737000.0	
Total Cash From Financing Activities	NaN	-2685000.0	
Change To Operating Activities	NaN	-4668000.0	
Issuance Of Stock	NaN	1000.0	
Change In Cash	NaN	72441000.0	
Total Cash From Operating Activities	NaN	114230000.0	
Depreciation	NaN	69294000.0	
Other Cashflows From Investing Activities	NaN	-436000.0	
Dividends Paid	NaN	-65817000.0	
Change To Account Receivables	NaN	8001000.0	
Other Cashflows From Financing Activities	NaN	266868000.0	
Change To Netincome	NaN	5202000.0	
Repurchase Of Stock	NaN	NaN	

	2021-09-30	2021-06-30		
Net Income	-11439000.0	-9402000.0		
Change To Liabilities	28335000.0	11132000.0		
Total Cashflows From Investing Activities	-57467000.0	-76294000.0		
Net Borrowings	-10415000.0	53424000.0		
Total Cash From Financing Activities	-57209000.0	17226000.0		
Change To Operating Activities	40390000.0	-29447000.0		
Issuance Of Stock	21198000.0	38476000.0		
Change In Cash	4477000.0	-7470000.0		
Total Cash From Operating Activities	119153000.0	51598000.0		
Depreciation	69445000.0	68741000.0		
Other Cashflows From Investing Activities	2944000.0	-961000.0		
Dividends Paid	-65948000.0	-65379000.0		
Change To Account Receivables	-12413000.0	3867000.0		
Other Cashflows From Financing Activities	-523000.0	-9295000.0		
Change To Netincome	3365000.0	5289000.0		
Repurchase Of Stock	-1521000.0	-1521000.0		]
['quarterly_earnings',	Revenue	Earnings		
Quarter				

2Q2021 208521000 -9402000

3Q2021 228877000 -11439000

4Q2021 272289000 40712000

1Q2022 273746000 39183000]

	2022-03-31	2021-12-31	2021-09-30	\
['quarterly_financials',				
Research Development	None	None	None	
Effect Of Accounting Charges	None	None	None	
Income Before Tax	43060000.0	42051000.0	-13019000.0	
Minority Interest	184252000.0	183907000.0	64239000.0	
Net Income	39183000.0	40712000.0	-11439000.0	

Selling General Administrative	9098000.0	25234000.0	10309000.0
Gross Profit	154845000.0	177993000.0	94800000.0
Ebit	75195000.0	80965000.0	15046000.0
Operating Income	75195000.0	80965000.0	15046000.0
Other Operating Expenses	NaN	2500000.0	2500000.0
Interest Expense	-31675000.0	-31922000.0	-30741000.0
Extraordinary Items	None	None	None
Non Recurring	None	None	None
Other Items	None	None	None
Income Tax Expense	340000.0	340000.0	340000.0
Total Revenue	273746000.0	272289000.0	228877000.0
Total Operating Expenses	198551000.0	191324000.0	213831000.0
Cost Of Revenue	118901000.0	94296000.0	134077000.0
Total Other Income Expense Net	-32135000.0	-38914000.0	-28065000.0
Discontinued Operations	None	None	None
Net Income From Continuing Ops	42720000.0	41711000.0	-13359000.0
Net Income Applicable To Common Shares	39183000.0	40299000.0	-12006000.0

2021-06-30

Research Development	None
Effect Of Accounting Charges	None
Income Before Tax	-10712000.0
Minority Interest	65282000.0
Net Income	-9402000.0
Selling General Administrative	12093000.0
Gross Profit	99534000.0
Ebit	18700000.0
Operating Income	18700000.0
Other Operating Expenses	2500000.0
Interest Expense	-30658000.0
Extraordinary Items	None
Non Recurring	None
Other Items	None
Income Tax Expense	341000.0
Total Revenue	208521000.0
Total Operating Expenses	189821000.0
Cost Of Revenue	108987000.0
Total Other Income Expense Net	-29412000.0
Discontinued Operations	None
Net Income From Continuing Ops	-11053000.0
Net Income Applicable To Common Shares	-9973000.0

[ 'mutualfund\_holders',  
0 Vanguard Specialized-Real Estate Index Fund 6638008 2022-01-30 0.0476  
1 Vanguard Total Stock Market Index Fund 3960227 2021-12-30 0.0284  
2 iShares Core S&P Midcap ETF 3862557 2022-01-30 0.0277  
3 Vanguard Small-Cap Index Fund 3503603 2021-12-30 0.0251  
4 Allspring Special Mid Cap Value Fund 3211005 2022-02-27 0.0230  
5 Vanguard Small-Cap Growth Index Fund 2184685 2021-12-30 0.0157  
6 Vanguard Extended Market Index Fund 1858080 2021-12-30 0.0133  
7 JP Morgan Small Cap Equity Fund 1574099 2021-12-30 0.0113  
8 SPDR S&P Mid Cap 400 ETF Trust 1194316 2022-01-30 0.0086  
9 Price (T.Rowe) Small Cap Stock Fund 1085917 2021-12-30 0.0078

Value

0 346902298  
1 226881404  
2 201857228  
3 200721415  
4 172784179  
5 125160603  
6 106449403  
7 90180131  
8 62412184  
9 62212184 ]

symbol: MTOR

sector: error

sector: error

Index: SP600

vol\_30d\_2yr: 15456103.3203125

Sector 1YMF: 2.329998016357422

1YMF: 2.329998016357422

risk trend factor: 5.06522316023419

Empty DataFrame

Columns: []

Index: [MTOR]

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d\_lower 90d\_upper

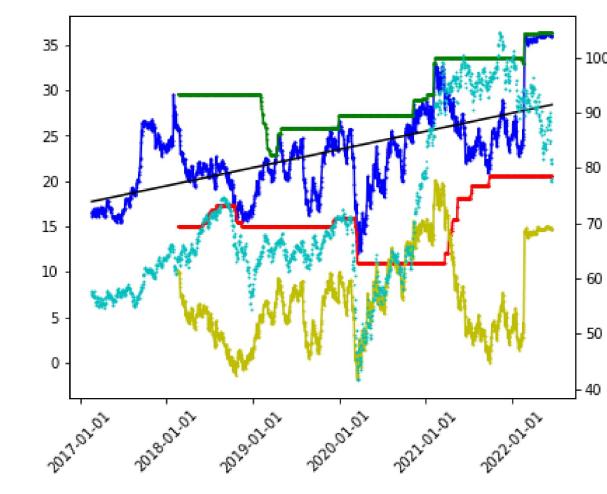
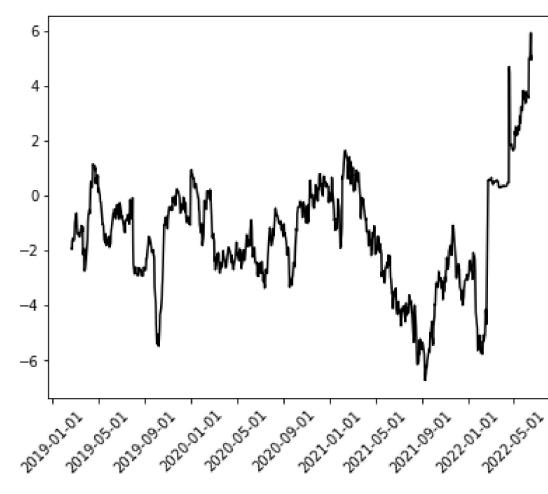
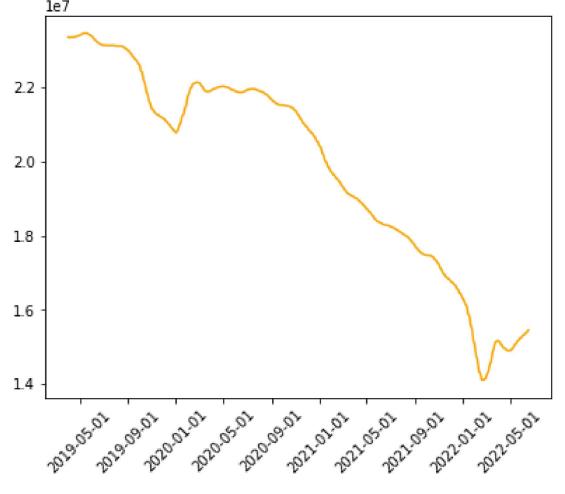
2022-06-17 35.939999 35.942037 36.098889 36.25574 35.883651 0.243988 35.395675 36.371626

volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst

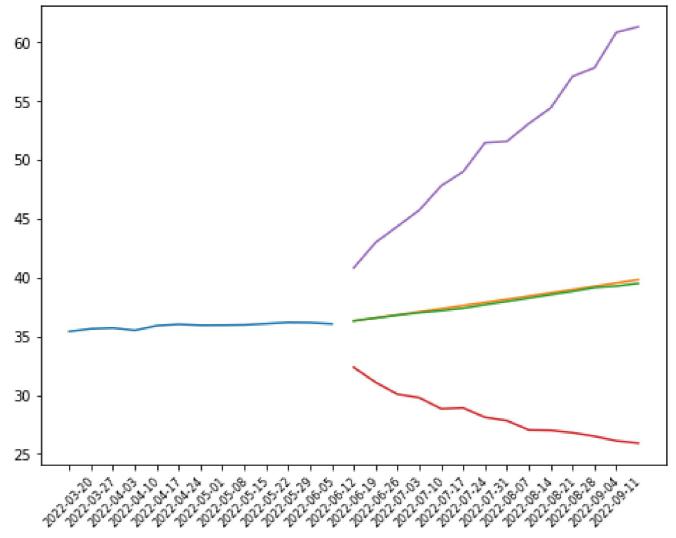
MTOR 1.664475 35.939999 15456103.320312 0.980154 0.319063 0.43585

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: -77.27001953125  
Index Volume Factor: 1.232760496116622  
Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks  
inner cv scores:  
best model: [None, 'mul', False]  
best inner cv score, sdev (11 folds): 16.339797487699105 12.251314855481748  
test cv mean error, stdev (10 folds): 16.151104516762537 12.834042609341937  
sell date: 2022-09-18  
expected return: 0.10723668466125544  
discounted return: 0.001107867995423728  
quarter return: 1.1072366846612631



[ 'options', ('2022-08-19', )]  
symbol: TTVY  
sector: error  
sector: error  
Index: SP600  
vol\_30d\_2yr: 10900973.046875  
Sector 1YMF: 2.7400035858154297  
1YMF: 2.7400035858154297  
risk trend factor: 2.3418794362082624  
Empty DataFrame  
Columns: []  
Index: [TTVY]

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d\_lower 90d\_upper

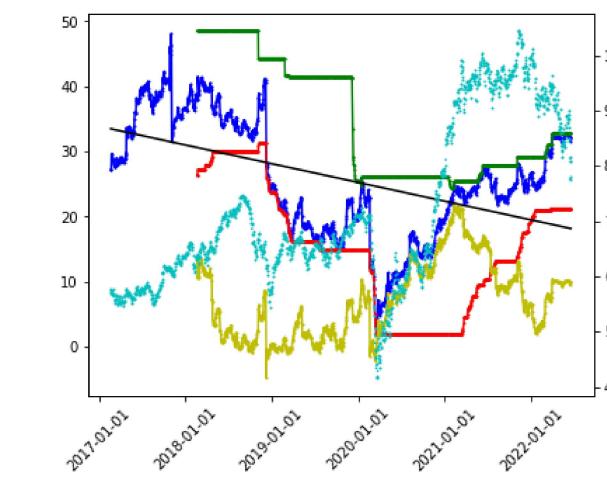
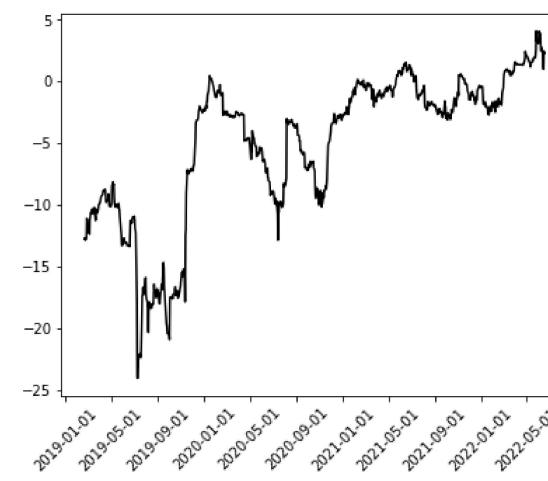
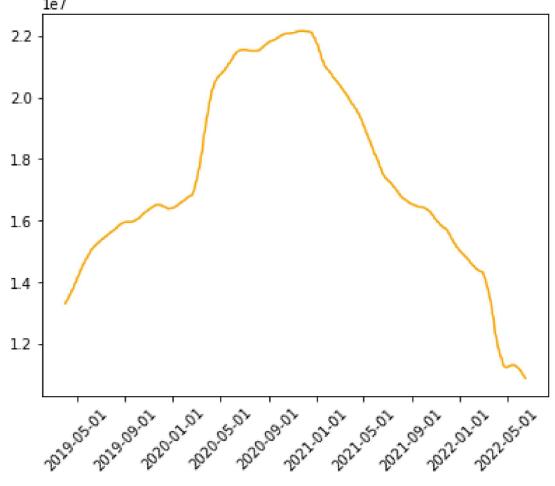
2022-06-17 32.130001 31.878985 32.19127 32.503555 31.861111 0.826432 30.208246 33.513976

volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst

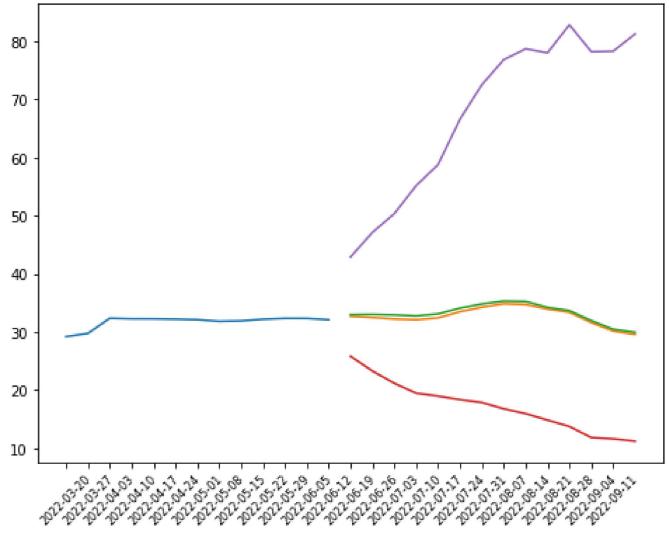
TTVY 1.643789 32.130001 10900973.046875 0.966327 0.518794 0.448871

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: -77.27001953125  
Index Volume Factor: 1.232760496116622  
Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks  
inner cv scores:  
best model: ['mul', 'add', True]  
best inner cv score, stdev (11 folds): 21.097800782250275 17.719029608718  
test cv mean error, stdev (10 folds): 22.59034686478315 17.91244793140013  
sell date: 2022-08-07  
expected return: 0.08512772919495565  
discounted return: 0.001635289686762631  
quarter return: 1.1622104744179889



[ 'options', ('2022-08-19', )]  
symbol: BANF  
sector: error  
sector: error  
Index: SP600  
vol\_30d\_2yr: 2480755.6640625  
Sector 1YMF: 33.56000518798828  
1YMF: 33.56000518798828  
risk trend factor: 2.0119906818931326  
Empty DataFrame  
Columns: []  
Index: [BANF]

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d\_lower 90d\_upper

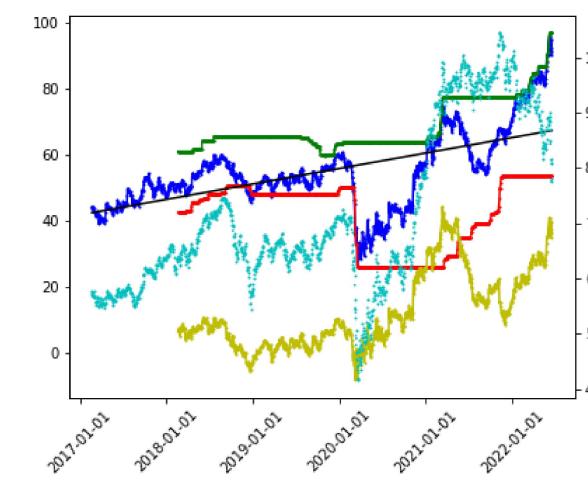
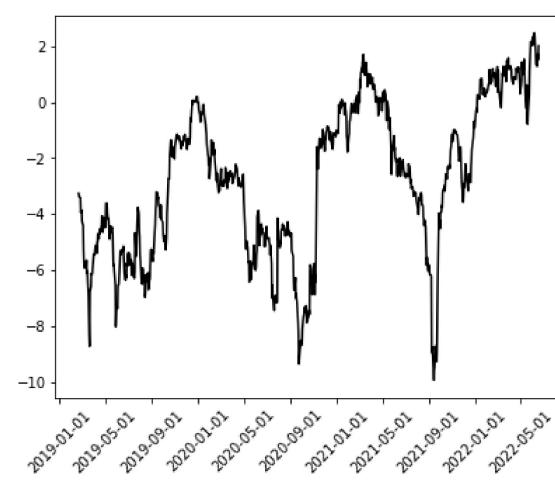
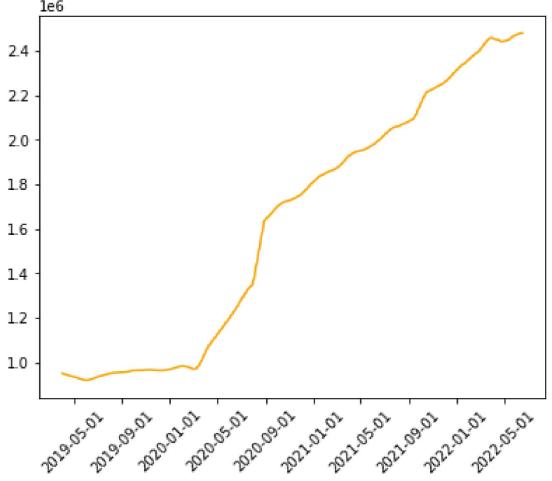
2022-06-17 94.860001 81.144325 89.856826 98.569327 85.566191 4.220089 77.126013 94.006368

volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst

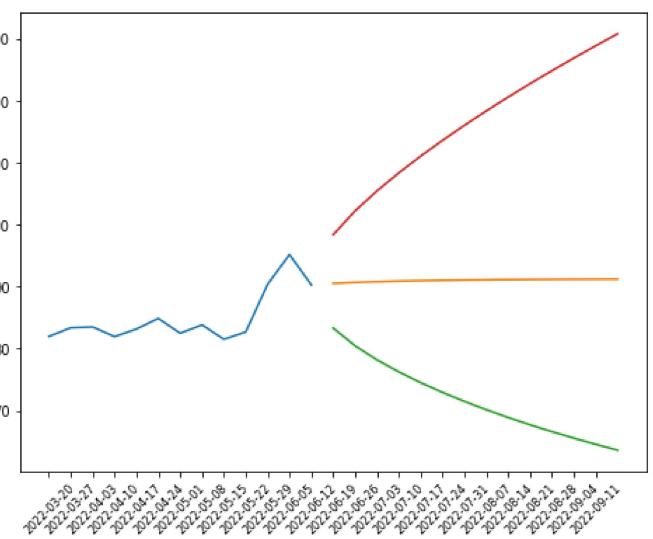
BANF 1.135864 94.860001 2480755.664062 0.965783 0.955166 0.536352

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: -77.27001953125  
 Index Volume Factor: 1.232760496116622  
 Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks  
 inner cv scores:  
 best model: [None, 'add', True]  
 best inner cv score, sdev (11 folds): 64.40840297506074 42.52350883817623  
 test cv mean error, stdev (10 folds): 68.88292764891482 42.05756361230951  
 sell date: 2022-09-18  
 expected return: -0.03831151591514609  
 discounted return: -0.0004245261879796125  
 quarter return: 0.96168848408485



symbol: Y  
 sector: Financial Services  
 Index: SP400  
 vol\_30d\_2yr: 1623886.71875  
 Sector 1YMF: 27.8699951171875  
 1YMF: 27.8699951171875  
 risk trend factor: 1.771775570386466  
 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

2022-06-17 830.5 830.573879 833.250157 835.926435 838.613332 7.460501 823.69233 853.534333

volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst

Y 1.56538 830.5 1623886.71875 0.919536 0.382688 0.459685

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: -72.2699966430664

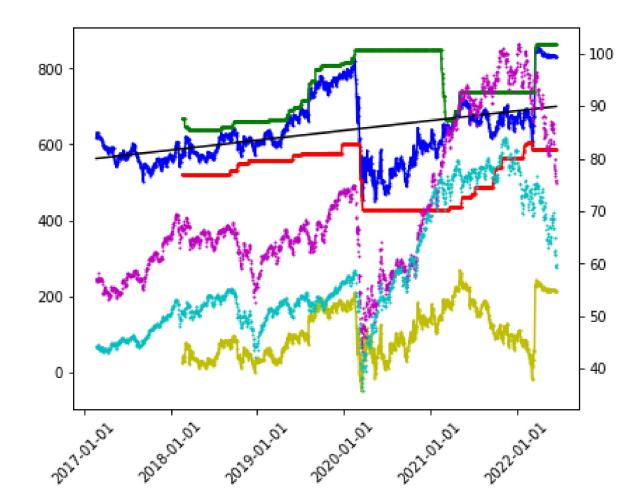
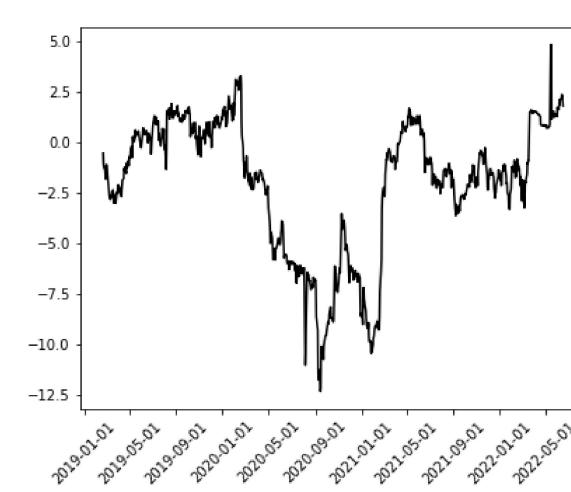
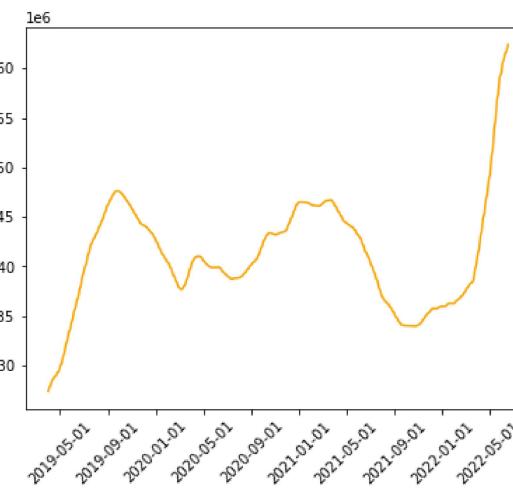
Sector Volume Factor: 1.2707168073107045

Sector Risk Trend Factor: -4.617890709055871

Index 1YMF: -69.05999755859375

Index Volume Factor: 0.5765983741853883

Index Risk Trend Factor: -5.134573474205833



ets next 13 weeks

inner cv scores:

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

best inner cv score, sdev (11 folds): 6830.83998938945 9059.456308741981

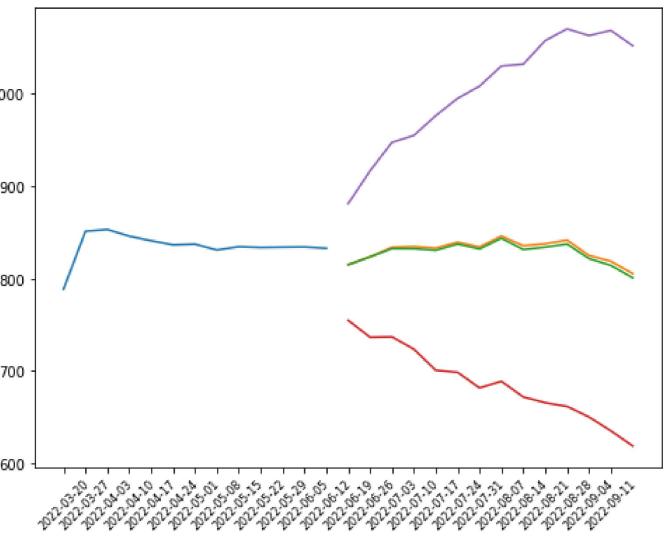
test cv mean error, stdev (10 folds): 7140.470182366679 9445.980311781888

sell date: 2022-08-07

expected return: 0.018482186671808076

discounted return: 0.0003663364200887642

quarter return: 1.0342709463466802



```

['options', ('2022-07-15',)]
['sustainability', Value
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: 5061001.171875
Sector 1YMF: 47.44999694824219
1YMF: 47.44999694824219
risk trend factor: 1.7515689687220128
    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  6.811968  669912512

    grossMargins grossProfits heldPercentInstitutions industry \
SAFM    0.25714    907758000      0.8102  Packaged Foods

    marketCap operatingCashflow operatingMargins payoutRatio pegRatio \
SAFM  4649520640      954787008      0.20787      0.0455      -0.48

    priceToBook priceToSalesTrailing12Months profitMargins quickRatio \
SAFM    1.97168      0.826786      0.15341      3.785

    returnOnAssets returnOnEquity revenueGrowth revenuePerShare \
SAFM    0.30256      0.44602      0.358      255.051

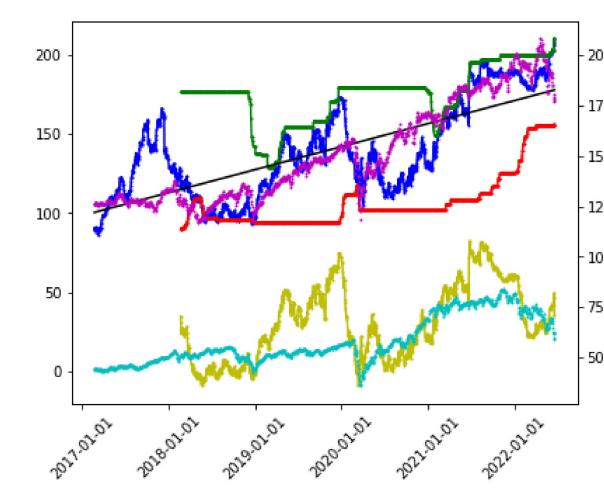
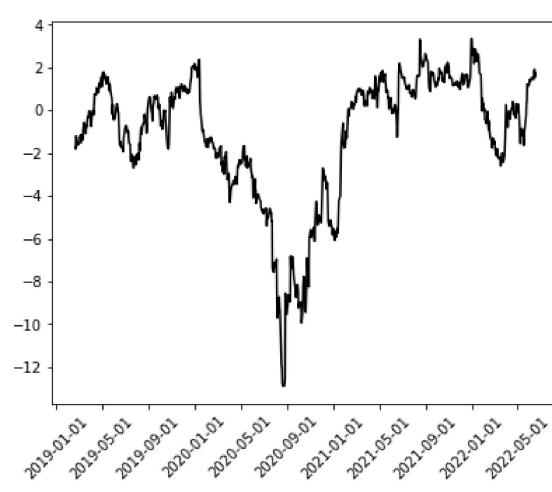
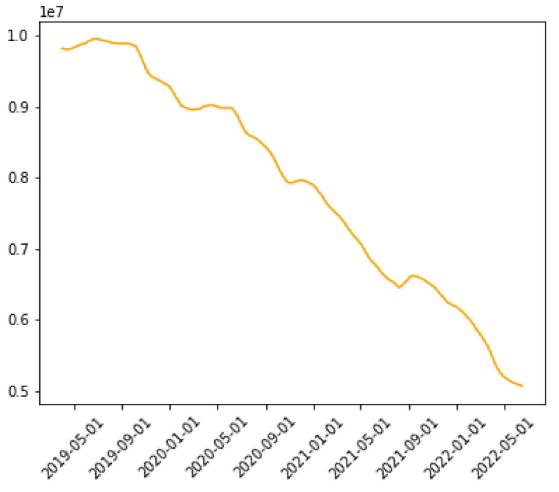
    sector sharesOutstanding shortRatio totalCash \
SAFM  Consumer Defensive    22320200      4.01  829123968

    totalCashPerShare totalDebt totalRevenue trailingPE
SAFM    37.147  20690000  5623608832      5.38993
Adj Close  21dBOLD  21dMA-TP  21dBOLU  90dSMA  90dSDev  90d_lower  90d_upper
2022-06-17 208.309998 186.953267 199.289207 211.625148 191.30127 7.50937 176.282531 206.320009
volume_factor latest_p vol_30d_2yr pct_2yr adf hurst
SAFM  1.334104 208.309998 5061001.171875 0.98121 0.675913 0.476629

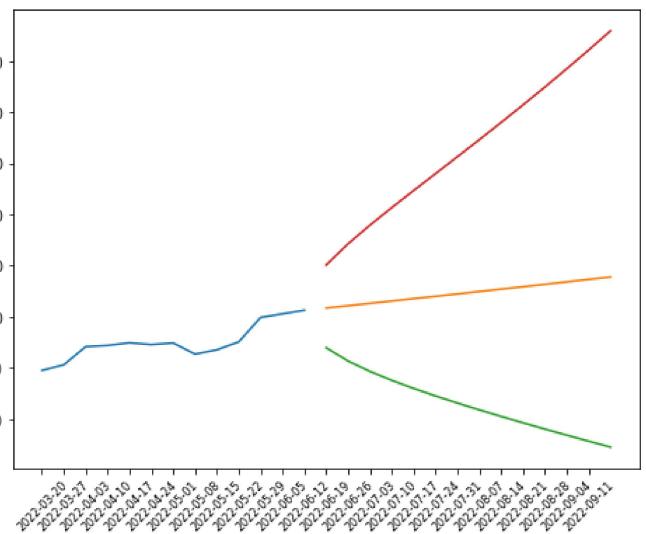
```

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: -74.80001831054688  
Sector Volume Factor: 1.4135920452708397  
Sector Risk Trend Factor: -2.283970024749523  
Index 1YMF: -69.05999755859375  
Index Volume Factor: 0.5765983741853883  
Index Risk Trend Factor: -5.134573474205833



ets next 13 weeks  
inner cv scores:  
best model: [None, 'add', False]  
best inner cv score, sdev (11 folds): 341.8995456857701 406.0401102878622  
test cv mean error, stdev (10 folds): 366.1965904438906 418.1646867976846  
sell date: 2022-09-18  
expected return: 0.03477390905806314  
discounted return: 0.00037162292056591717  
quarter return: 1.0347739090580612



['options', ('2022-08-19', '2022-12-16')]

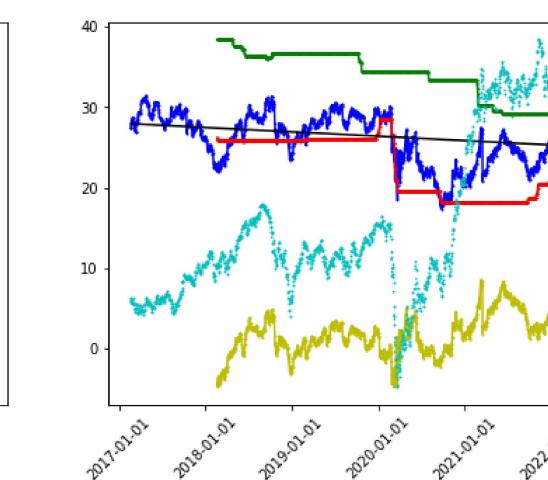
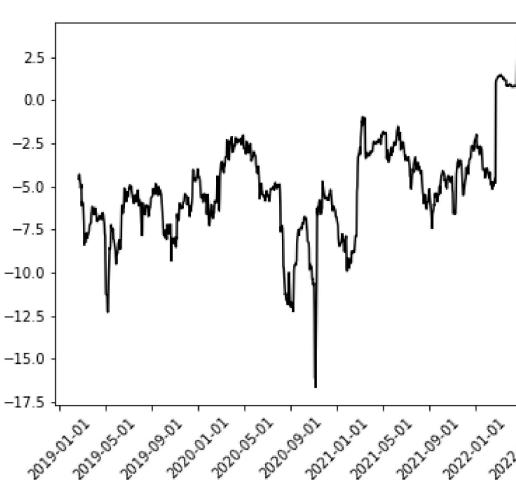
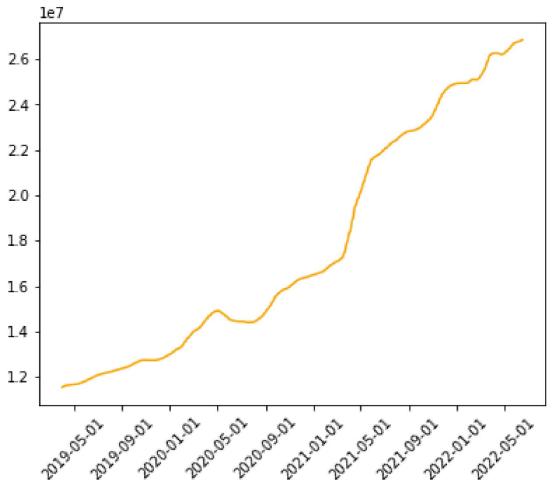
symbol: SJI  
sector: error  
sector: error  
Index: SP600  
vol\_30d\_2yr: 26850614.0625  
Sector 1YMF: 2.720003128051758  
1YMF: 2.720003128051758  
risk trend factor: 1.295238173088975  
Empty DataFrame  
Columns: []  
Index: [SJI]

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	34.200001	33.571564	34.29746	35.023356	34.252857	0.376732	33.499393	35.006321

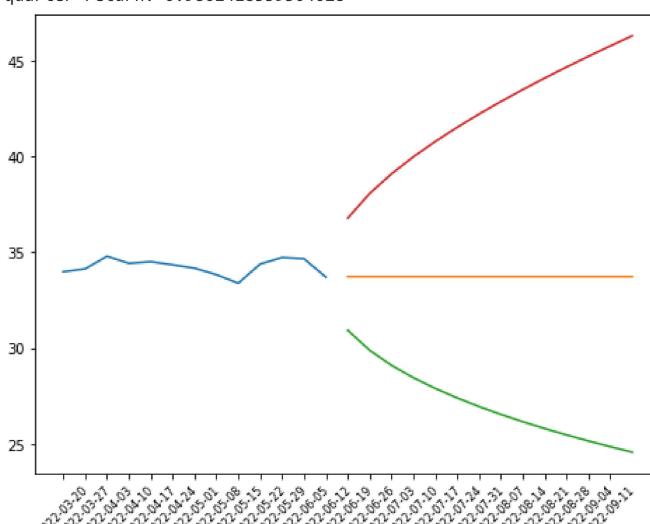
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
SJI	0.791297	34.200001	26850614.0625	0.934426	0.172286	0.415691

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: -77.27001953125  
 Index Volume Factor: 1.232760496116622  
 Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks  
 inner cv scores:  
 best model: [None, 'add', True]  
 best inner cv score, sdev (11 folds): 11.032857251779552 9.06545661123771  
 test cv mean error, stdev (10 folds): 12.01130208919697 8.93699372055595  
 sell date: 2022-09-18  
 expected return: -0.013758166069532271  
 discounted return: -0.00015057221476544314  
 quarter return: 0.9862418339304628



```
[options, ('2022-07-15',)]
symbol: LNTH
sector: Healthcare
Index: SP600
vol_30d_2yr: 14149384.1796875
Sector 1YMF: 22.491004943847656
1YMF: 22.491004943847656
risk trend factor: 1.1787739665678139
    beta currentRatio debtToEquity earningsGrowth ebitda \
LNTH 0.750453 1.828 36.846 3.692 108329000

    ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
LNTH 0.20002 18.234236 77142872 0.50913 187695000

    heldPercentInstitutions industry marketCap \
LNTH 1.01237 Diagnostics & Research 4167462400

    operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
LNTH 54362000 0.11518 0 0.55 8.071249

    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
LNTH 7.695022 -0.06892 1.563 0.04389

    returnOnEquity revenueGrowth revenuePerShare sector \
LNTH -0.07151 1.258 7.998 Healthcare

    sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
LNTH 68634096 1.86 105355000 1.535 190072992

    totalRevenue
LNTH 541579008
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
<b>2022-06-17</b>	60.720001	58.693247	66.262412	73.831578	61.742857	5.236883	51.269091	72.216623

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
LNTH	1.823238	60.720001	14149384.179688	0.79355	0.965336

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		
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yellow	supply_trend_1yr		
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Sector 1YMF: -122.20997619628906

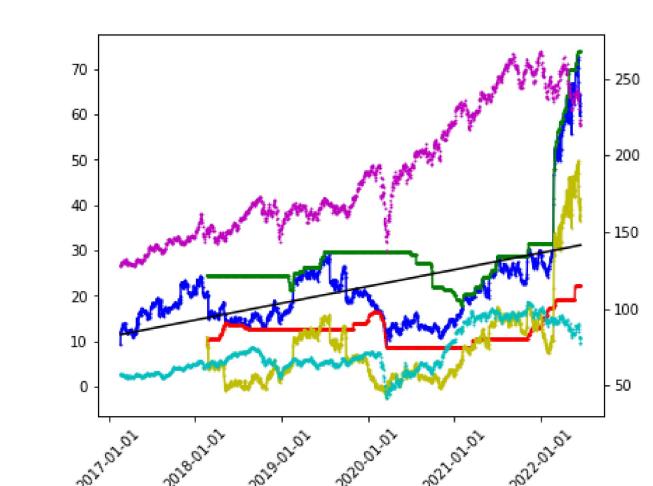
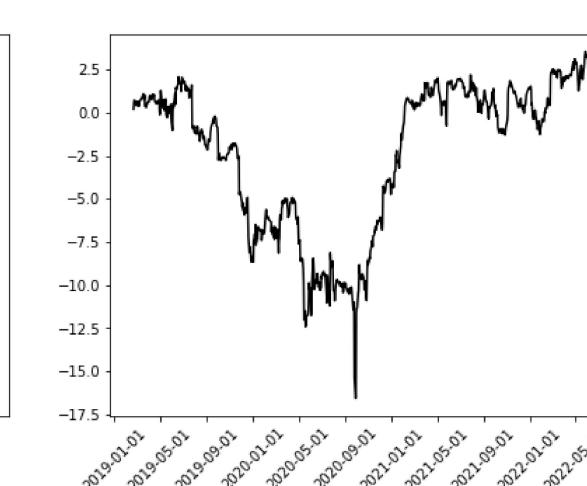
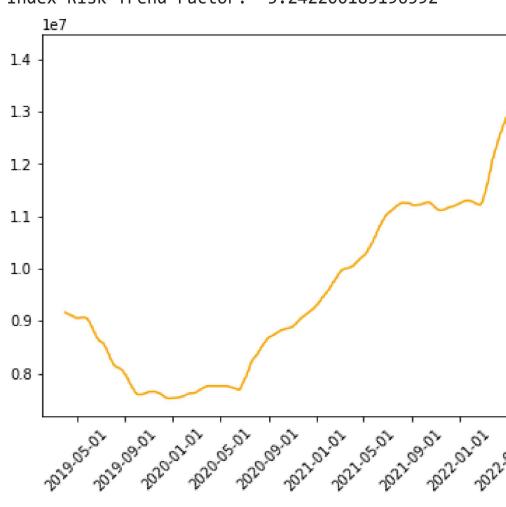
Sector Volume Factor: 1.2238851152317325

Sector Risk Trend Factor: -3.3236323632363236

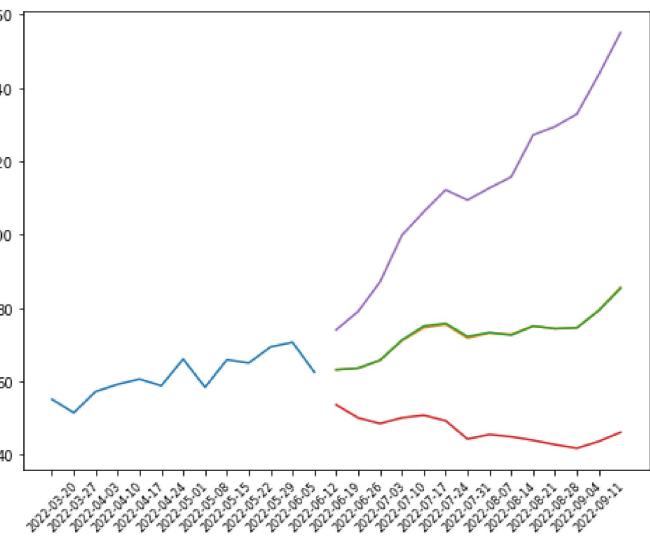
Index 1YMF: -77.27001953125

Index Volume Factor: 1.232760496116622

Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks  
inner cv scores:  
best model: ['mul', 'add', False]  
best inner cv score, sdev (11 folds): 42.20944812442462 64.78300074110847  
test cv mean error, stdev (10 folds): 42.661090255055115 67.92847044203776  
sell date: 2022-09-18  
expected return: 0.4109071514914948  
discounted return: 0.003748670356339634  
quarter return: 1.4109071514915077



		2022-03-31	2021-12-31	2021-09-30	\
['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	8182000.0				
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	]			
['quarterly_cashflow',		2022-03-31	2021-12-31	2021-09-30	\
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	29700000.0				
Capital Expenditures	-2656000.0				
['quarterly_earnings',	Revenue	Earnings			
Quarter					

Q22021 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 129070000.0 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', Holder Shares Date Reported \ 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: ROG

sector: error

sector: error

Index: SP600

vol\_30d\_2yr: 3248345.8984375

Sector 1YMF: 22.989990234375

1YMF: 22.989990234375

risk trend factor: 1.068804267635208

Empty DataFrame

Columns: []

Index: [ROG]

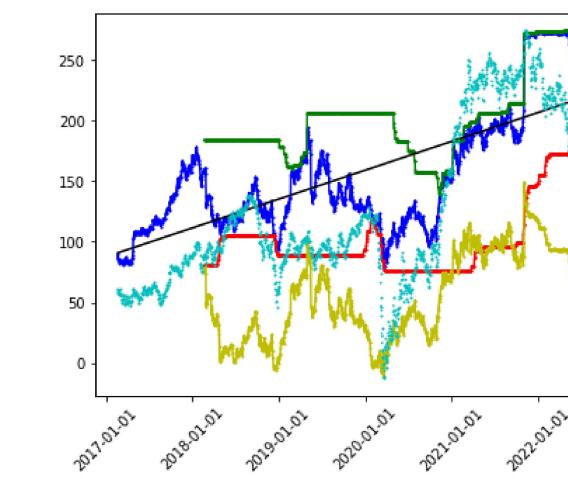
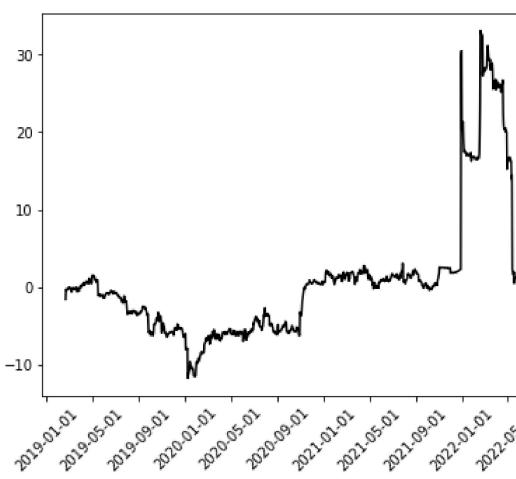
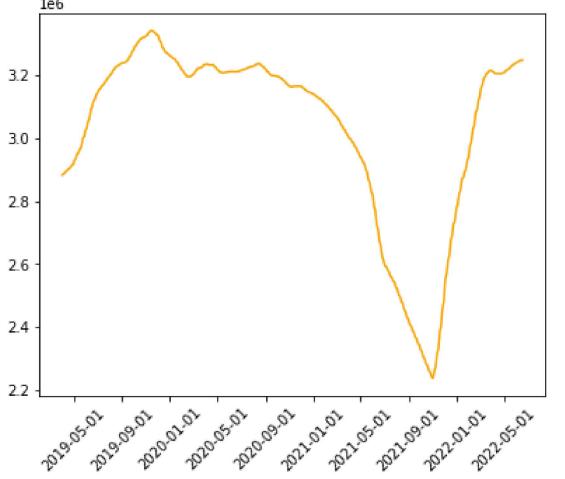
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDDev 90d\_lower 90d\_upper

2022-06-17 259.380005 254.172765 260.19492 266.217074 267.576983 6.298768 254.979447 280.17452

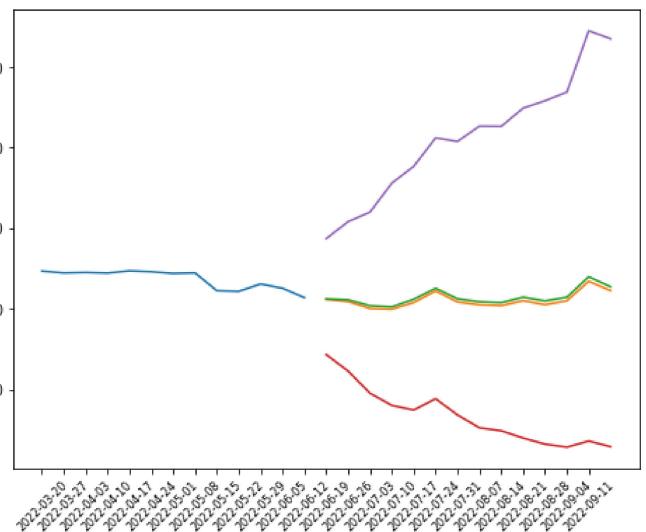
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
ROG	0.980653	259.380005	3248345.898438	0.91539	0.71811	0.478768

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: -77.27001953125  
Index Volume Factor: 1.232760496116622  
Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks  
inner cv scores:  
best model: ['mul', 'mul', True]  
best inner cv score, sdev (11 folds): 923.7177242546556 1367.48960810325  
test cv mean error, stdev (10 folds): 1005.1315131672606 1408.5880717304296  
sell date: 2022-09-11  
expected return: 0.029324962907460506  
discounted return: 0.0003400956025878532  
quarter return: 1.0317779467744637



symbol: TWI  
sector: Industrials  
Index: SP600  
vol\_30d\_2yr: 10530212.5  
Sector 1YMF: 6.0800018310546875  
1YMF: 6.0800018310546875  
risk trend factor: 0.9310876079145333  
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

2022-06-17 17.52 16.247353 18.072381 19.897408 15.954921 1.924943 12.105034 19.804807

volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst

TWI 1.389288 17.52 10530212.5 0.876816 0.791457 0.500704

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: -141.5800018310547

Sector Volume Factor: 0.8696853533786545

Sector Risk Trend Factor: -4.514668337867341

Index 1YMF: -77.27001953125

Index Volume Factor: 1.232760496116622

Index Risk Trend Factor: -5.242200185196592

ets next 13 weeks

inner cv scores:

best model: ['add', None]

best inner cv score, sdev (11 folds): 3.2805800844676796 4.993652693641646

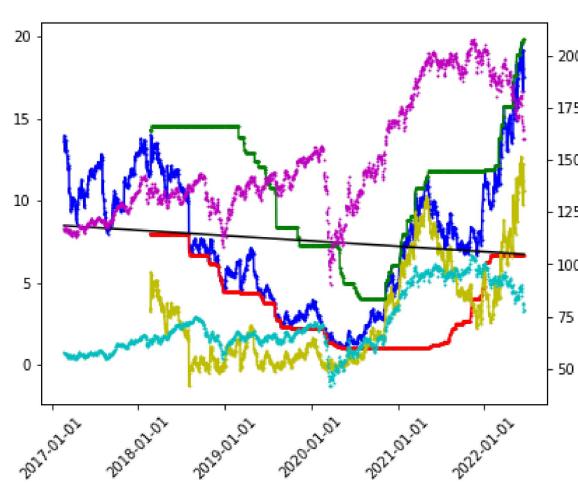
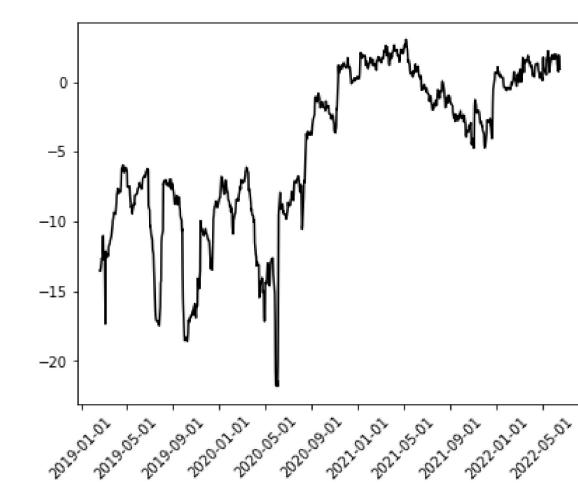
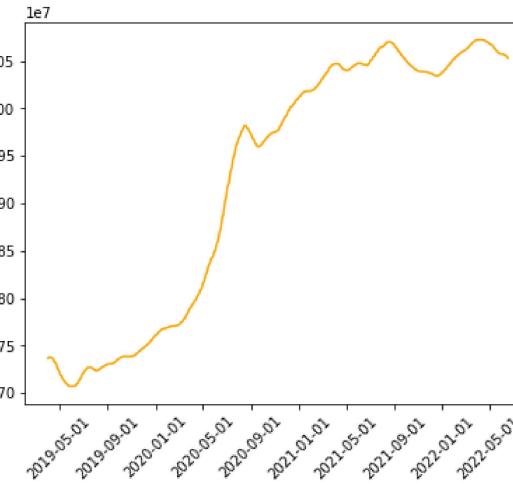
test cv mean error, stdev (10 folds): 3.572171330127623 5.147324164231099

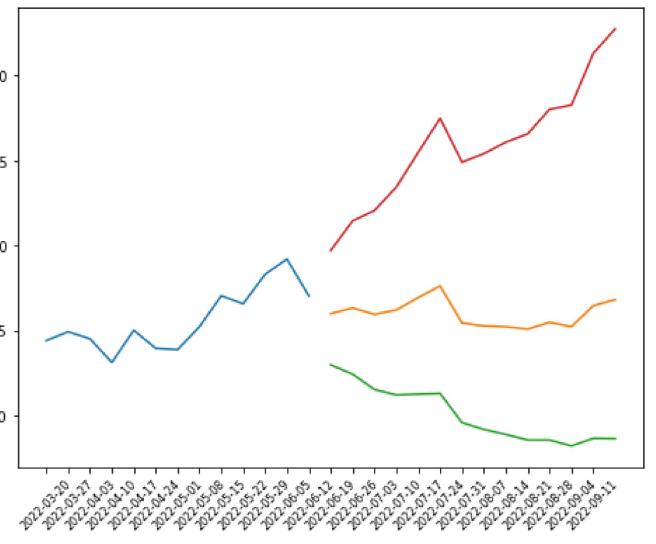
sell date: 2022-07-24

expected return: 0.005320444476753903

discounted return: 0.00014740922241451848

quarter return: 1.0136530116318712





```
[ 'options', ('2022-07-15',) ]
symbol: PBF
sector: Energy
Index: SP600
vol_30d_2yr: 92668774.0234375
Sector 1YMF: 17.619998931884766
1YMF: 17.619998931884766
risk trend factor: 0.8876574451557954
    beta currentRatio debtToEquity      ebitda ebitdaMargins  forwardPE \
PBF  2.259981      1.254     197.914   690400000      0.02194    11.930909
          freeCashflow grossMargins grossProfits heldPercentInstitutions \
PBF  284750016      0.0362     671100000      0.80139
```

```
industry marketCap operatingCashflow \
PBF Oil & Gas Refining & Marketing 3964366848      803299968
operatingMargins payoutRatio pegRatio priceToBook \
PBF      0.0135      0     -0.18     2.070946
priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
PBF      0.125972      0.00798     0.629      0.02192
returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \
PBF      0.14223      0.856     261.505 Energy      120828000
shortRatio totalCash totalCashPerShare totalDebt totalRevenue \
PBF      2.81  1434599936      11.873  4999499776  31470299136
```

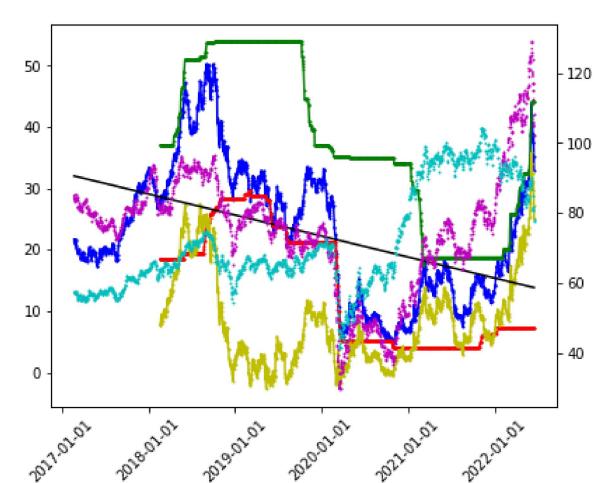
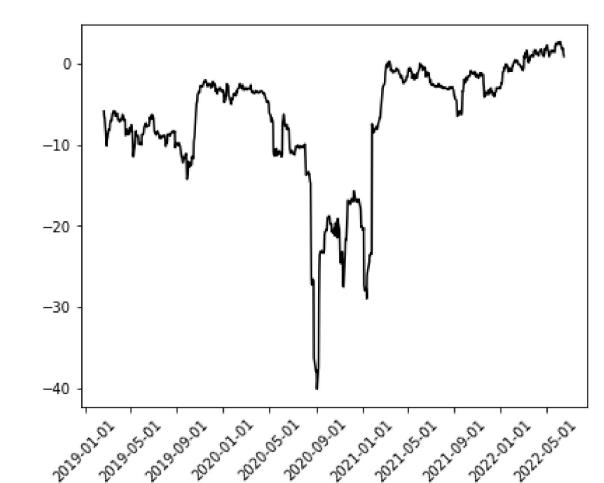
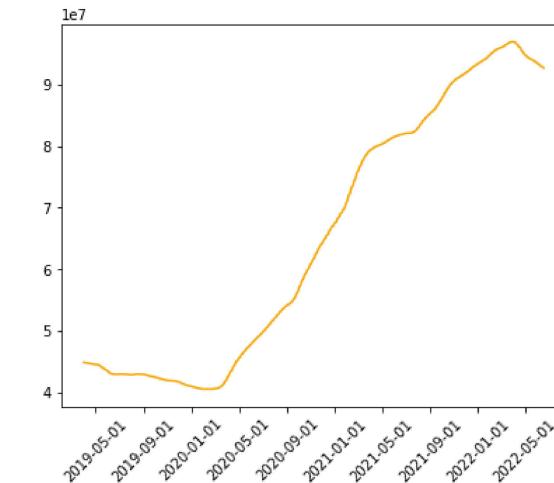
```
trailingPE
PBF  15.904024
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper
2022-06-17 32.98 27.175062 35.668889 44.162716 29.964286 5.34115 19.281986 40.646585
```

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
PBF	0.835417	32.98	92668774.023438	0.721917	0.581704	0.554972

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

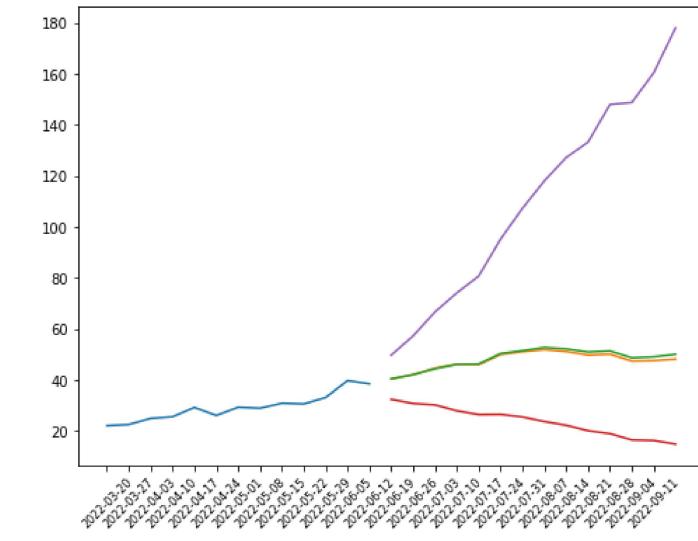
Sector 1YMF: -3.82000732421875  
Sector Volume Factor: 0.8966412344901694  
Sector Risk Trend Factor: -0.12330558135216596  
Index 1YMF: -77.27001953125  
Index Volume Factor: 1.232760496116622  
Index Risk Trend Factor: -5.242200185196592



```

sets next 13 weeks
inner cv scores:
best model: ['add', 'mul', True]
best inner cv score, sdev (11 folds): 34.29026533421989 23.683932597018416
test cv mean error, stdev (10 folds): 29.947934102695836 20.23875570492777
sell date: 2022-08-07
expected return: 0.5722785277771747
discounted return: 0.009091596944749591
quarter return: 2.2993985304856697

```



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

```
symbol: GO
```

```
sector: Consumer Defensive
```

```
Index: SP400
```

```
vol_30d_2yr: 21744971.2890625
```

```
Sector 1YMF: 9.000003967285156
```

```
1YMF: 9.090003967285156
```

```
risk trend factor: 0.8421349867224205
```

```
    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
--	-----------	---------	----------	---------	--------	---------	-----------	-----------

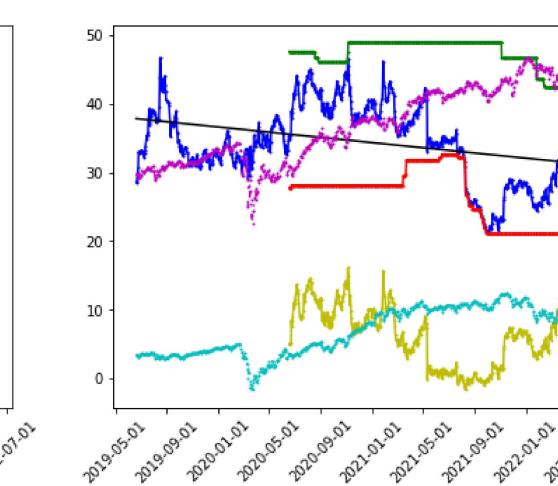
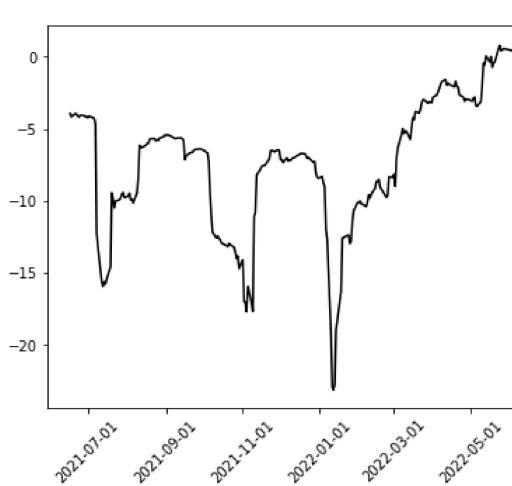
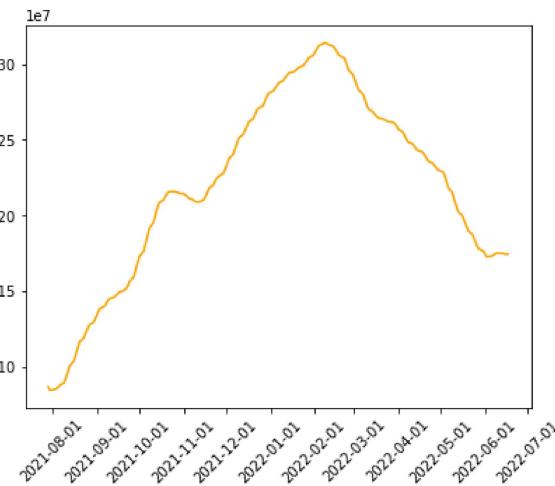
2022-06-17	40.150002	35.915072	38.024936	40.134801	35.226667	2.439389	30.347888	40.105445
------------	-----------	-----------	-----------	-----------	-----------	----------	-----------	-----------

2022-06-17	35.915072	38.024936	40.134801	35.226667	2.439389	30.347888	40.105445
------------	-----------	-----------	-----------	-----------	----------	-----------	-----------

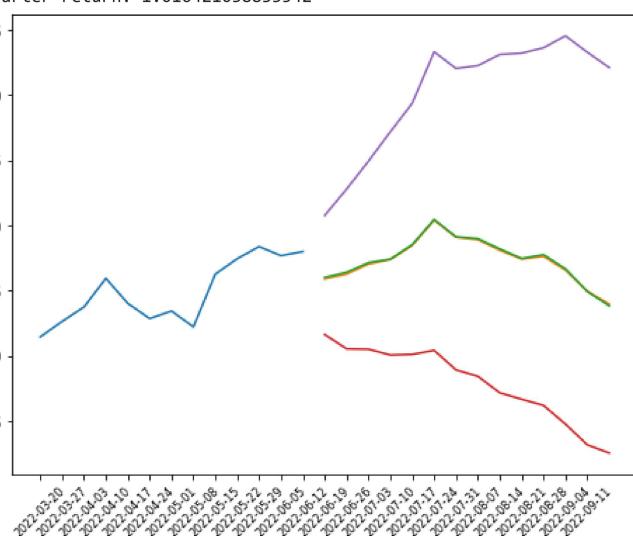
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
GO	1.191531	40.150002	21744971.289062	0.687007	0.173605	0.403873

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: -74.80001831054688  
Sector Volume Factor: 1.4135920452708397  
Sector Risk Trend Factor: -2.283970024749523  
Index 1YMF: -69.05999755859375  
Index Volume Factor: 0.5765983741853883  
Index Risk Trend Factor: -5.134573474205833



ets next 13 weeks  
inner cv scores:  
best model: ['add', 'mul', True]  
best inner cv score, sdev (11 folds): 15.809878099615663 6.8291644035736905  
test cv mean error, stdev (10 folds): 15.809879339831612 6.829165054824745  
sell date: 2022-07-24  
expected return: 0.0063937902839149635  
discounted return: 0.00017705558133318533  
quarter return: 1.016421038833542



```

['options', ('2022-07-15', '2023-01-20', '2024-01-19')]
symbol: HRB
sector: Consumer Cyclical
Index: SP400
vol_30d_2yr: 54249330.46875
Sector 1YMF: 9.64000129699707
1YMF: 9.64000129699707
risk trend factor: 0.73141120475963
    beta currentRatio debtToEquity dividendRate dividendYield \
HRB 0.695099 1.103 5314.905 1.08 0.0327

    earningsGrowth ebitda ebitdaMargins forwardPE grossMargins \
HRB -0.008 806428032 0.30238 8.967391 0.472

    grossProfits heldPercentInstitutions industry marketCap \
HRB 1400058000 0.93136 Personal Services 5266601984

    operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
HRB 80728000 0.25066 0.3344 0.99 117.43773

    priceToSalesTrailing12Months profitMargins quickRatio revenueGrowth \
HRB 1.97476 0.16063 0.971 0.039

    revenuePerShare sector sharesOutstanding shortRatio \
HRB 15.645 Consumer Cyclical 159594000 3.1

    totalCash totalCashPerShare totalDebt totalRevenue trailingPE
HRB 1041740032 6.527 2384054016 2666958080 13.502455

```

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

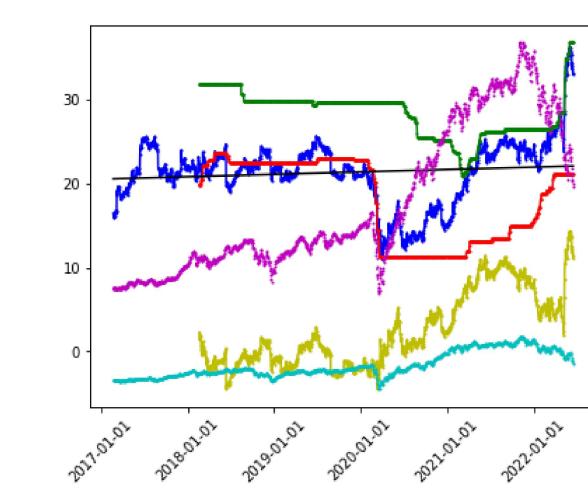
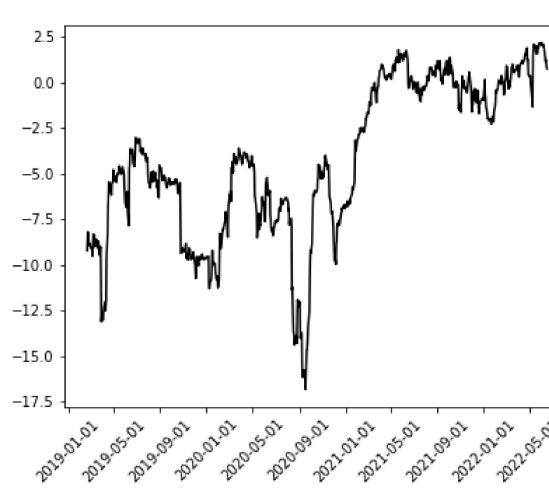
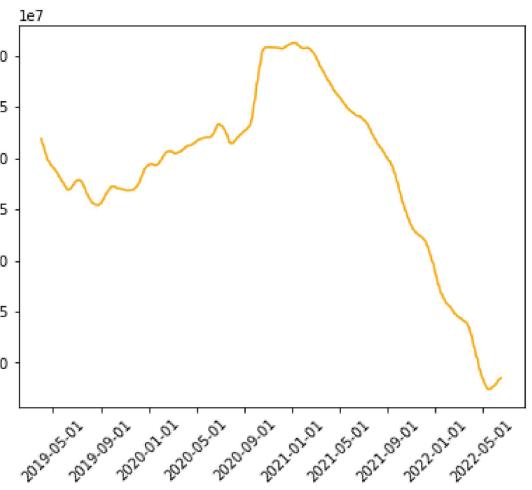
2022-06-17	33.0	32.411108	34.624444	36.837781	29.692222	4.042801	21.60662	37.777824
------------	------	-----------	-----------	-----------	-----------	----------	----------	-----------

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

HRB	0.963511	33.0	54249330.46875	0.83894	0.727369	0.435637
-----	----------	------	----------------	---------	----------	----------

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		

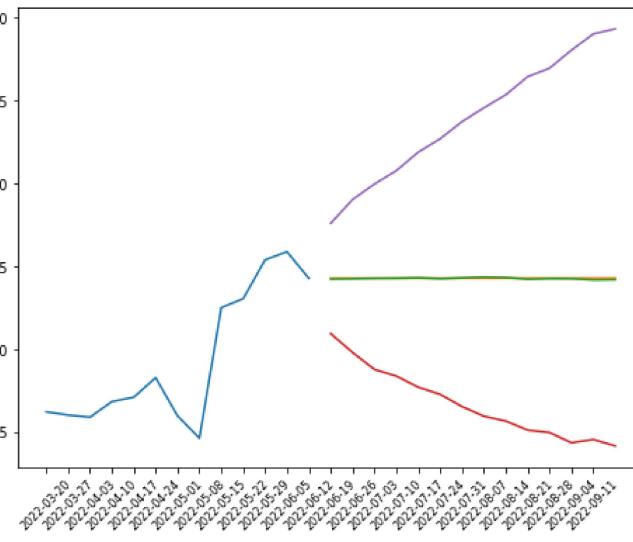
Sector 1YMF: -359.96002197265625  
Sector Volume Factor: 1.2928194874233667  
Sector Risk Trend Factor: -4.72140697901556  
Index 1YMF: -69.05999755859375  
Index Volume Factor: 0.5765983741853883  
Index Risk Trend Factor: -5.134573474205833



```

ets next 13 weeks
inner cv scores:
best model: [None, 'mul', True]
best inner cv score, sdev (11 folds): 6.810426445471288 7.0714351587462385
test cv mean error, stdev (10 folds): 7.190817226155514 7.30849167762353
sell date: 2022-09-18
expected return: 0.03855437643735156
discounted return: 0.00041127719823297326
quarter return: 1.0385543764373528

```



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

symbol: AZPN

sector: Technology

Index: SP400

vol\_30d\_2yr: 9413646.875

Sector 1YMF: 44.3599853515625

1YMF: 44.3599853515625

risk trend factor: 0.7193120754472356

```
currentRatio debtToEquity earningsGrowth ebitda ebitdaMargins \
AZPN      1.176     40.561      0.231  27337000      0.08523
```

```
forwardPE grossMargins grossProfits heldPercentInstitutions \
AZPN  34.490196     0.46746    137630000      1.03086
```

```
industry marketCap operatingCashflow operatingMargins \
AZPN Software—Application 12029022208      45755000      -0.08421
```

```
payoutRatio pegRatio priceToBook priceToSalesTrailing12Months \
AZPN      0      4.59     16.632854      37.503967
```

```
profitMargins quickRatio revenueGrowth revenuePerShare sector \
AZPN     -0.07406     1.116      0.154      4.811  Technology
```

```
sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
AZPN      62168700      2.78   285216992      4.282  314292000
```

```
totalRevenue
AZPN      320740000
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDDev	90d_lower	90d_upper
2022-06-17	189.199997	179.517829	194.02619	208.534551	172.712063	17.04983	138.612402	206.811723

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
AZPN	0.677612	189.199997	9413646.875	0.817172	0.799656	0.381343

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: -363.4599914550781

Sector Volume Factor: 1.1528457613891094

Sector Risk Trend Factor: -4.954471974241429

Index 1YMF: -69.05999755859375

Index Volume Factor: 0.5765983741853883

Index Risk Trend Factor: -5.134573474205833

legend

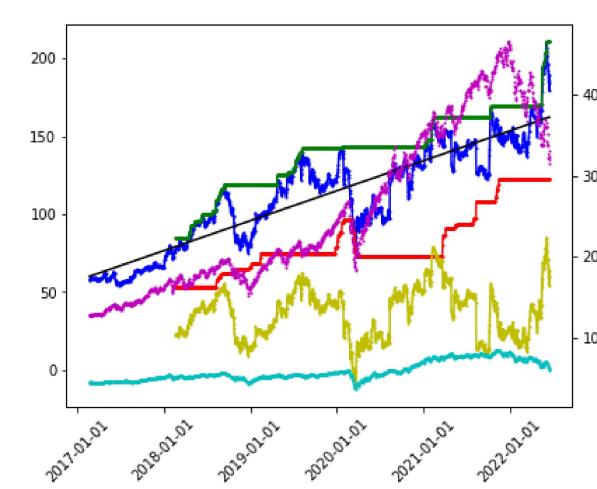
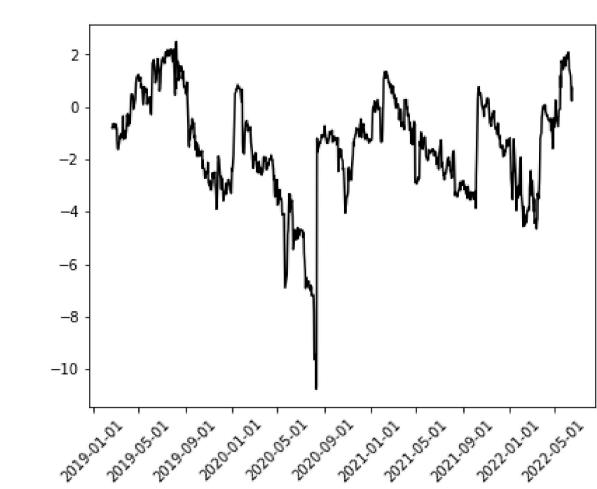
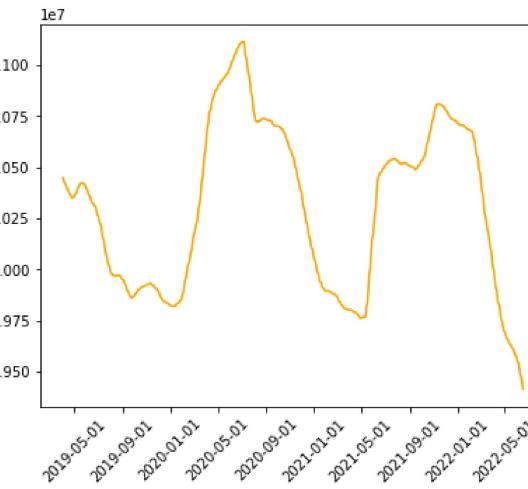
legend

magenta

sector

cyan

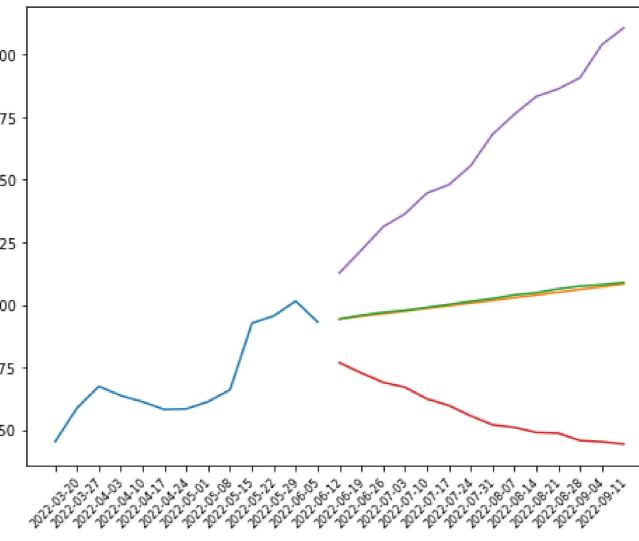
index



```

sets next 13 weeks
inner cv scores:
best model: [None, 'mul', False]
best inner cv score, sdev (11 folds): 455.88267076129983 541.1075629116453
test cv mean error, stdev (10 folds): 500.50451604473744 547.8829654623287
sell date: 2022-09-18
expected return: 0.10134786512475712
discounted return: 0.0010498415855568766
quarter return: 1.1013478651247464

```



```

['options', ('2022-07-15', '2022-12-16')]
symbol: CEIX
sector: Energy
Index: SP600
vol_30d_2yr: 10292389.84375
Sector 1YMF: 13.870006561279297
1YMF: 13.870006561279297
risk trend factor: 0.677246429262603
    beta currentratio debtToEquity      ebitda ebitdaMargins forwardPE \
CEIX  2.034072        0.842       95.981  241890000        0.16404  2.585434

```

```

freeCashflow grossMargins grossProfits heldPercentInstitutions \
CEIX   252373632        0.3951     422536000        0.82577

```

```

industry marketCap operatingCashflow operatingMargins payoutRatio \
CEIX  Thermal Coal  1606689280        375780000        0.01441        0

```

```

priceToBook priceToSalesTrailing12Months profitMargins quickRatio \
CEIX   2.403771        1.089613        0.00221        0.658

```

```

returnOnAssets returnOnEquity revenueGrowth revenuePerShare sector \
CEIX     0.00507        0.0052        0.616      42.718 Energy

```

```

sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
CEIX   34814500        2.05  222906000        6.403  641545984

```

```

totalRevenue trailingPE
CEIX   1474550016      512.7778

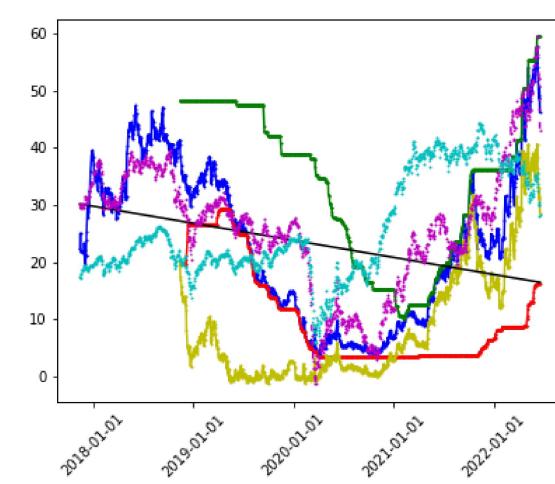
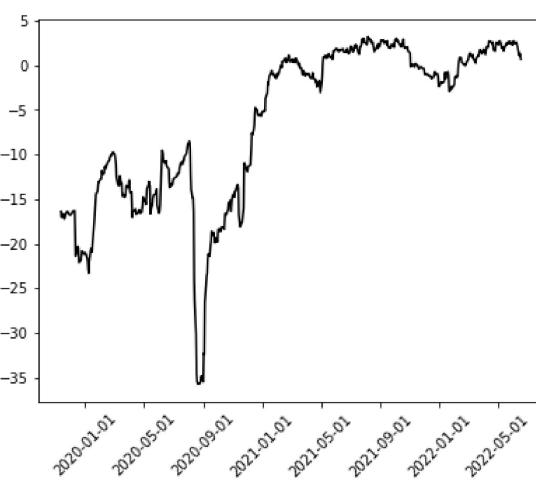
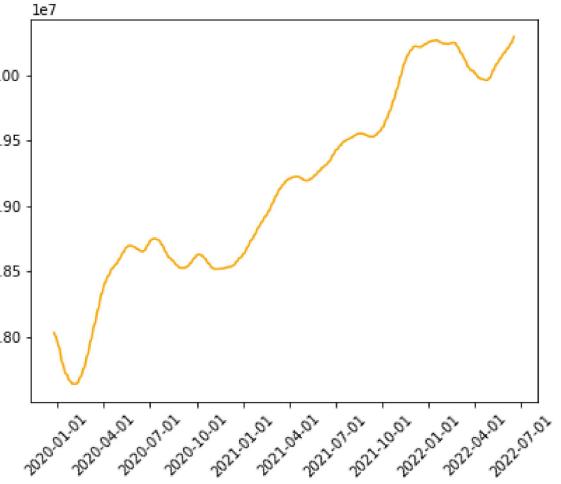
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	46.150002	47.268535	52.341873	57.415211	46.69127	6.413974	33.863321	59.519218

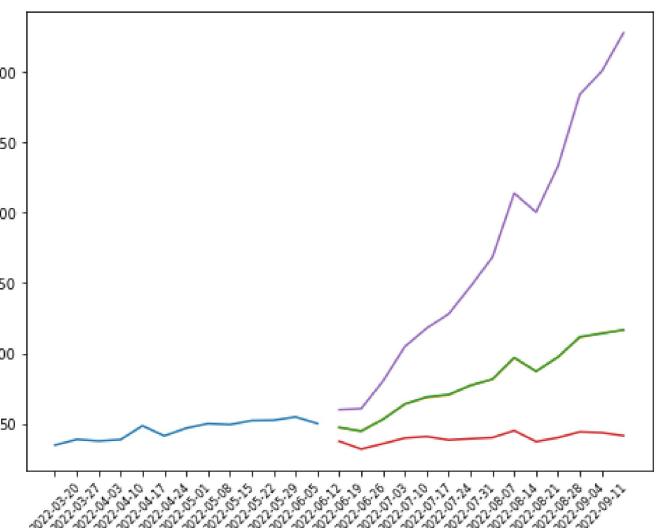
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
CEIX	1.548727	46.150002	10292389.84375	0.762563	0.855686	0.521917

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: -3.82000732421875  
Sector Volume Factor: 0.8966412344901694  
Sector Risk Trend Factor: -0.12330558135216596  
Index 1YMF: -77.27001953125  
Index Volume Factor: 1.232760496116622  
Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks  
inner cv scores:  
best model: ['mul', 'mul', False]  
best inner cv score, sdev (11 folds): 36.976321206260096 64.10182322768459  
test cv mean error, stdev (10 folds): 36.976336010190934 64.10181980239541  
sell date: 2022-09-18  
expected return: 1.5253203600537018  
discounted return: 0.01012008177233592  
quarter return: 2.525320360053713



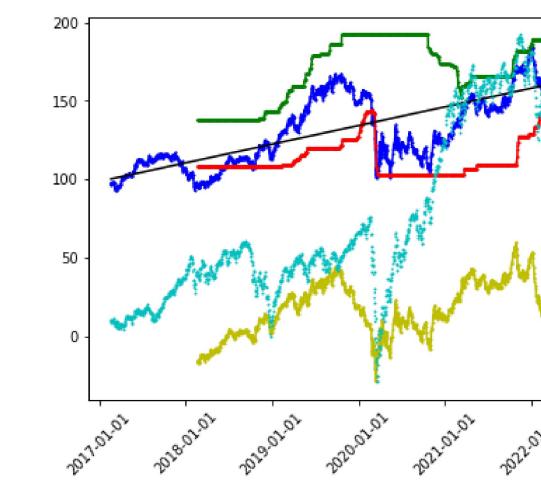
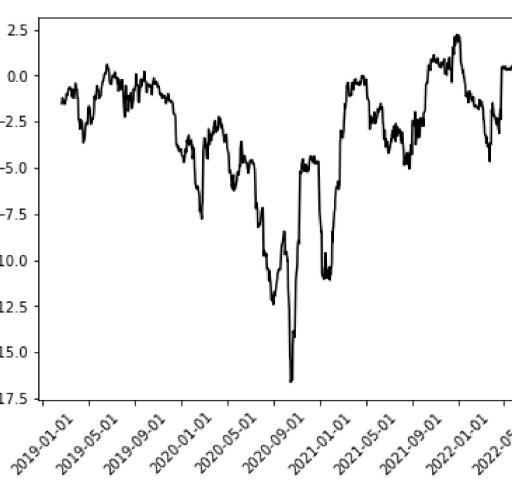
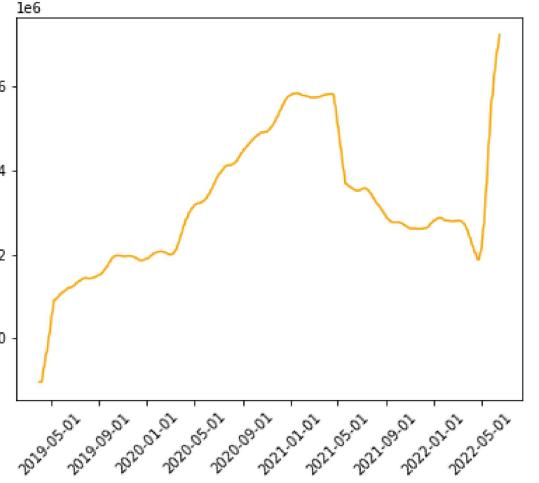
['options', ('2022-08-19',)]  
symbol: PSB  
sector: error  
sector: error  
Index: SP400  
vol\_30d\_2yr: 2723370.8984375  
Sector 1YMF: 12.849990844726562  
1YMF: 12.849990844726562  
risk trend factor: 0.576750069513787  
Empty DataFrame  
Columns: []  
Index: [PSB]

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	185.919998	185.696223	186.664367	187.632511	178.031091	10.476157	157.078776	198.983405

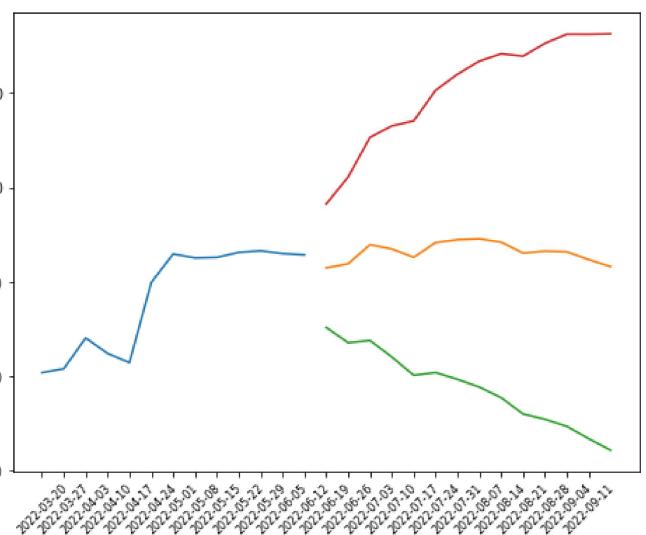
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
PSB	2.540601	185.919998	2723370.898438	0.951471	0.840486	0.47672

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: -69.05999755859375  
Index Volume Factor: 0.5765983741853883  
Index Risk Trend Factor: -5.134573474205833



ets next 13 weeks  
inner cv scores:  
best model: ['add', 'add', True]  
best inner cv score, sdev (11 folds): 338.2036909355542 505.799897507174  
test cv mean error, stdev (10 folds): 371.31200217226143 518.9986598445007  
sell date: 2022-08-07  
expected return: 0.017148258571142442  
discounted return: 0.00034011556113511254  
quarter return: 1.0317798406686582



symbol: MCK  
sector: Healthcare  
Index: SP500  
vol\_30d\_2yr: 22868822.0703125  
Sector 1YMF: 23.670013427734375  
1YMF: 23.670013427734375  
risk trend factor: 0.5738185073390152  
beta currentRatio dividendRate dividendYield ebitda \  
MCK 0.716666 0.98 1.88 0.0058 3516999936  
ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \  
MCK 0.01368 13.643667 2778374912 0.0503 11967000000  
heldPercentInstitutions industry marketCap \  
MCK 0.898 Medical Distribution 45891629056  
operatingCashflow operatingMargins payoutRatio pegRatio \  
MCK 4917000192 0.0105 0.2521 1.05  
priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \  
MCK 0.178562 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 90dSD 90d\_lower 90d\_upper

2022-06-17 300.570007 299.443248 318.421081 337.398913 317.445859 10.066372 297.313115 337.578604

volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst

MCK 1.048139 300.570007 22868822.070312 0.803327 0.997242 0.461301

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: -122.20997619628906

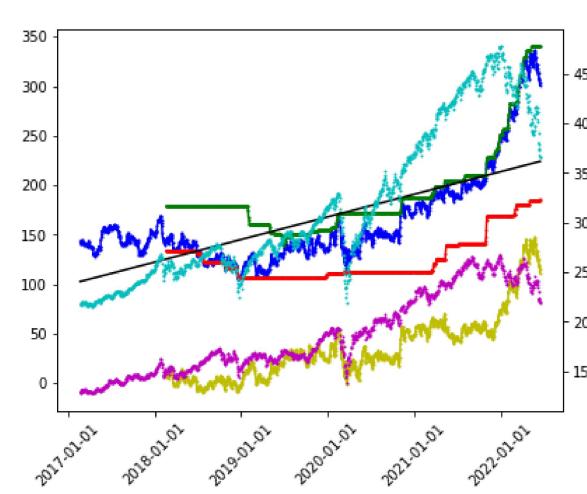
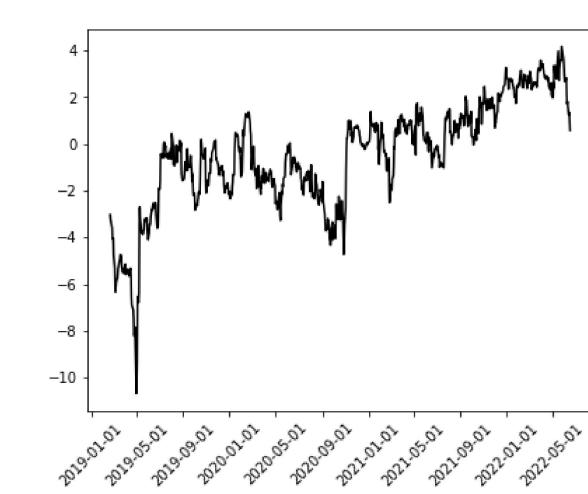
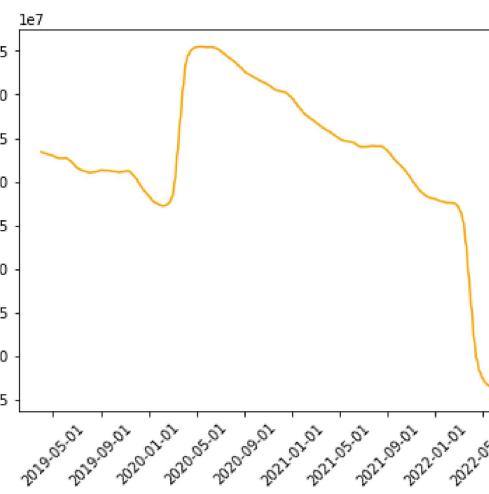
Sector Volume Factor: 1.2238851152317325

Sector Risk Trend Factor: -3.3236323632363236

Index 1YMF: -287.8400573730469

Index Volume Factor: 1.1835166983613057

Index Risk Trend Factor: -3.791860877423899



ets next 13 weeks

inner cv scores:

best model: [None, 'add', True]

best inner cv score, sdev (11 folds): 518.2206827971352 568.7446331297658

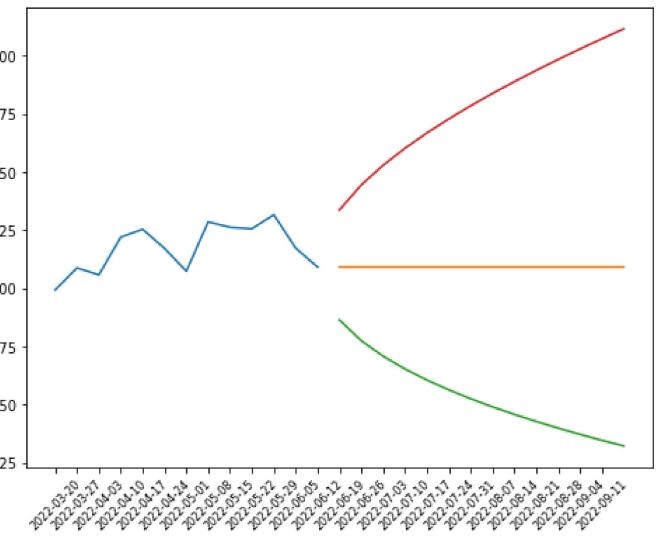
test cv mean error, stdev (10 folds): 542.1495065634238 591.2014883903353

sell date: 2022-06-19

expected return: 0.028401984075183757

discounted return: 0.028401984075183684

quarter return: 13.151864867613655



	2021-12-31	2021-09-30	2021-06-30	\
['quarterly_balance_sheet',				
Intangible Assets	2.130000e+09	2.385000e+09	2.797000e+09	
Capital Surplus	7.411000e+09	7.311000e+09	7.057000e+09	
Total Liab	6.449500e+10	6.368800e+10	6.293200e+10	
Total Stockholder Equity	-1.274000e+09	-5.710000e+08	-5.290000e+08	
Minority Interest	4.870000e+08	4.840000e+08	4.910000e+08	
Other Current Liab	5.975000e+09	3.504000e+09	6.850000e+08	
Total Assets	6.370800e+10	6.360100e+10	6.289400e+10	
Common Stock	2.000000e+06	2.000000e+06	2.000000e+06	
Other Current Assets	5.940000e+09	3.470000e+09	1.230000e+08	
Retained Earnings	8.734000e+09	8.812000e+09	8.618000e+09	
Other Liab	1.007600e+10	9.988000e+09	1.065700e+10	
Good Will	9.462000e+09	9.473000e+09	9.520000e+09	
Treasury Stock	-1.742100e+10	-1.669600e+10	-1.620600e+10	
Other Assets	1.971000e+09	2.173000e+09	2.607000e+09	
Cash	2.754000e+09	2.151000e+09	2.423000e+09	
Total Current Liabilities	4.745200e+10	4.607500e+10	4.383500e+10	
Short Long Term Debt	4.660000e+08	7.500000e+07	8.070000e+08	
Other Stockholder Equity	-1.655000e+09	-1.665000e+09	-1.627000e+09	
Property Plant Equipment	3.645000e+09	3.990000e+09	4.620000e+09	
Total Current Assets	4.649800e+10	4.558000e+10	4.335000e+10	
Long Term Investments	2.000000e+06	Nan	Nan	
Net Tangible Assets	-1.286600e+10	-1.242900e+10	-1.284600e+10	
Net Receivables	1.835500e+10	2.014000e+10	2.019800e+10	
Long Term Debt	5.323000e+09	5.769000e+09	6.282000e+09	
Inventory	1.902400e+10	1.934200e+10	2.001600e+10	
Accounts Payable	3.718300e+10	3.892200e+10	3.838900e+10	

	2021-03-31			
Intangible Assets	3.391000e+09			
Capital Surplus	6.925000e+09			
Total Liab	6.356900e+10			
Total Stockholder Equity	-2.100000e+07			
Minority Interest	1.467000e+09			
Other Current Liab	1.670000e+08			
Total Assets	6.501500e+10			
Common Stock	2.000000e+06			
Other Current Assets	1.340000e+08			
Retained Earnings	8.202000e+09			
Other Liab	1.110100e+10			
Good Will	9.493000e+09			
Treasury Stock	-1.515000e+10			
Other Assets	1.799000e+09			
Cash	6.278000e+09			
Total Current Liabilities	4.410300e+10			
Short Long Term Debt	7.740000e+08			
Other Stockholder Equity	-1.480000e+09			
Property Plant Equipment	4.681000e+09			
Total Current Assets	4.538200e+10			
Long Term Investments	2.690000e+08			
Net Tangible Assets	-1.290500e+10			
Net Receivables	1.918100e+10			
Long Term Debt	6.292000e+09			
Inventory	1.924600e+10			
Accounts Payable	3.897500e+10	]		

	2021-12-31	2021-09-30	\
[ 'quarterly_cashflow',			
Change To Liabilities	1.810000e+08	2.040000e+09	
Total Cashflows From Investing Activities	-1.150000e+08	-5.800000e-07	
Net Borrowings	3.620000e+08	-1.136000e+09	
Total Cash From Financing Activities	-4.380000e+08	-1.743000e-09	
Change To Operating Activities	3.300000e+07	1.300000e+08	
Issuance Of Stock	6.300000e+07	4.000000e-07	
Net Income	-7.000000e+06	2.670000e+08	
Change In Cash	6.260000e+08	-2.000000e-06	
Repurchase Of Stock	-7.140000e+08	-2.640000e+08	
Effect Of Exchange Rate	1.700000e+07	7.000000e-06	
Total Cash From Operating Activities	1.377000e+09	1.792000e+09	
Depreciation	1.850000e+08	1.950000e-08	
Other Cashflows From Investing Activities	-3.000000e+07	-3.100000e+07	
Dividends Paid	-7.200000e+07	-6.500000e+07	
Change To Inventory	-4.950000e+08	-2.630000e-08	
Change To Account Receivables	3.860000e+08	-1.266000e+09	
Other Cashflows From Financing Activities	-7.700000e+07	-3.180000e+08	
Change To Netincome	9.580000e+08	5.950000e+08	
Capital Expenditures	-6.700000e+07	-9.300000e+07	

	2021-06-30	2021-03-31	
Change To Liabilities	-6.090000e+08	2.507000e+09	
Total Cashflows From Investing Activities	-9.900000e+07	-2.050000e+08	
Net Borrowings	-2.000000e+06	-1.620000e-08	
Total Cash From Financing Activities	-2.151000e+09	-5.170000e+08	
Change To Operating Activities	-1.650000e+08	3.700000e-07	
Issuance Of Stock	7.100000e+07	3.700000e+07	
Net Income	4.860000e+08	6.660000e-08	
Change In Cash	-3.861000e+09	2.664000e+09	
Repurchase Of Stock	-1.008000e+09	-2.440000e-08	
Effect Of Exchange Rate	1.100000e+07	1.600000e+07	
Total Cash From Operating Activities	-1.622000e+09	3.370000e+09	
Depreciation	2.180000e+08	2.210000e-08	
Other Cashflows From Investing Activities	-2.200000e+07	-6.400000e+07	
Dividends Paid	-6.900000e+07	-6.700000e+07	
Change To Inventory	-9.010000e+08	-2.300000e+08	

```

Change To Account Receivables      -1.045000e+09 -3.550000e+08
Other Cashflows From Financing Activities -1.143000e+09 -8.100000e+07
Change To Netincome                4.480000e+08  8.740000e+08
Capital Expenditures              -9.300000e+07 -1.580000e+08 ]
['quarterly_earnings',           Revenue   Earnings
Quarter
1Q2021    59142000000  666000000
2Q2021    62674000000  486000000
3Q2021    66576000000  267000000
4Q2021    68614000000  -7000000]

```

```

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

	2021-12-31	2021-09-30	\
Research Development	None	None	
Effect Of Accounting Charges	None	None	
Income Before Tax	277000000.0	442000000.0	
Minority Interest	487000000.0	484000000.0	
Net Income	-7000000.0	267000000.0	
Selling General Administrative	3105000000.0	2669000000.0	
Gross Profit	3428000000.0	3352000000.0	
Ebit	323000000.0	683000000.0	
Operating Income	323000000.0	683000000.0	
Other Operating Expenses	None	None	
Interest Expense	-41000000.0	-45000000.0	
Extraordinary Items	None	None	
Non Recurring	None	None	
Other Items	None	None	
Income Tax Expense	238000000.0	132000000.0	
Total Revenue	68614000000.0	66576000000.0	
Total Operating Expenses	68291000000.0	65893000000.0	
Cost Of Revenue	65186000000.0	63224000000.0	
Total Other Income Expense Net	-46000000.0	-241000000.0	
Discontinued Operations	NaN	NaN	
Net Income From Continuing Ops	39000000.0	31000000.0	
Net Income Applicable To Common Shares	-7000000.0	267000000.0	

	2021-06-30	2021-03-31	
Research Development	None	None	
Effect Of Accounting Charges	None	None	
Income Before Tax	562000000.0	1029000000.0	
Minority Interest	491000000.0	1467000000.0	
Net Income	486000000.0	666000000.0	
Selling General Administrative	2232000000.0	2224000000.0	
Gross Profit	3032000000.0	3116000000.0	
Ebit	800000000.0	892000000.0	
Operating Income	800000000.0	892000000.0	
Other Operating Expenses	None	None	
Interest Expense	-49000000.0	-52000000.0	
Extraordinary Items	None	None	
Non Recurring	None	None	
Other Items	None	None	
Income Tax Expense	26000000.0	316000000.0	
Total Revenue	62674000000.0	59142000000.0	
Total Operating Expenses	61874000000.0	58250000000.0	
Cost Of Revenue	59642000000.0	56026000000.0	
Total Other Income Expense Net	-238000000.0	137000000.0	
Discontinued Operations	-3000000.0	-3000000.0	
Net Income From Continuing Ops	536000000.0	713000000.0	
Net Income Applicable To Common Shares	486000000.0	666000000.0	]

```

['mutualfund_holders',           Holder   Shares Date Reported % Out \
0  Vanguard Total Stock Market Index Fund 4329453 2021-12-30 0.0298
1  Vanguard 500 Index Fund 3233507 2021-12-30 0.0222
2  MFS Series Trust I-MFS Value Fund 2893200 2022-02-27 0.0199
3  JP Morgan Large Cap Growth Fund 2293009 2021-12-30 0.0158
4  Vanguard Mid-Cap Index Fund 1726299 2021-12-30 0.0119
5  SPDR S&P 500 ETF Trust 1640864 2022-01-30 0.0113
6  Fidelity 500 Index Fund 1563585 2022-02-27 0.0108
7  iShares Core S&P 500 ETF 1269846 2022-01-30 0.0087
8  Putnam Large Cap Value Fund 1220237 2022-01-30 0.0084
9  Vanguard Index-Value Index Fund 1166709 2021-12-30 0.0080

```

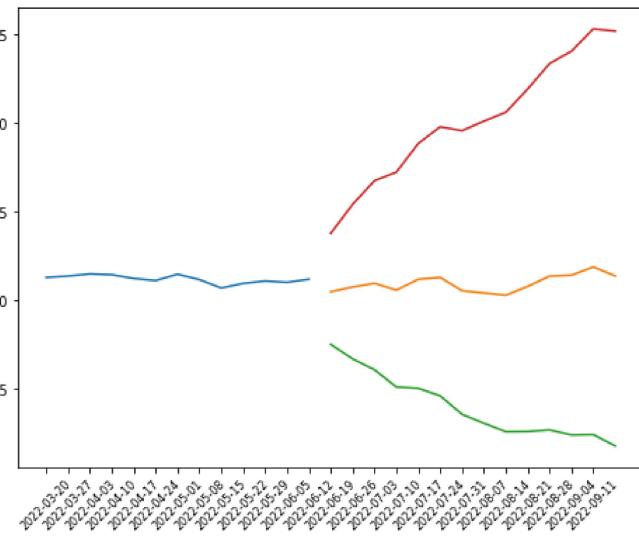
	Value
0	1076172132
1	803752834
2	795514272
3	569973247
4	429106142
5	421242606
6	429923331
7	325994865
8	313259242
9	290008856

```

['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

```





['options', ('2022-08-19', '2022-12-16')]

symbol: WRB

sector: Financial Services

Index: SP500

vol\_30d\_2yr: 24741280.6640625

Sector 1YMF: 2.7066688537597656

1YMF: 2.7066688537597656

risk trend factor: 0.37488481940951457

```
    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
<b>2022-06-17</b>	66.82	65.019435	68.896032	72.772628	67.946191	1.725853	64.494485	71.397896

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
<b>WRB</b>	1.220256	66.82	24741280.664062	0.845794	0.942554	0.452599

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: -72.2699966430664

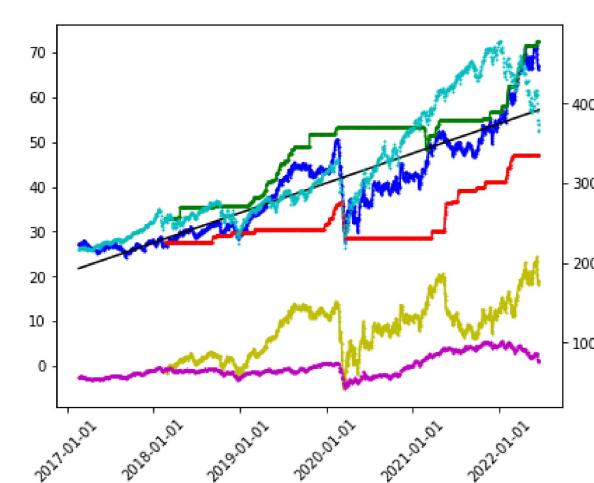
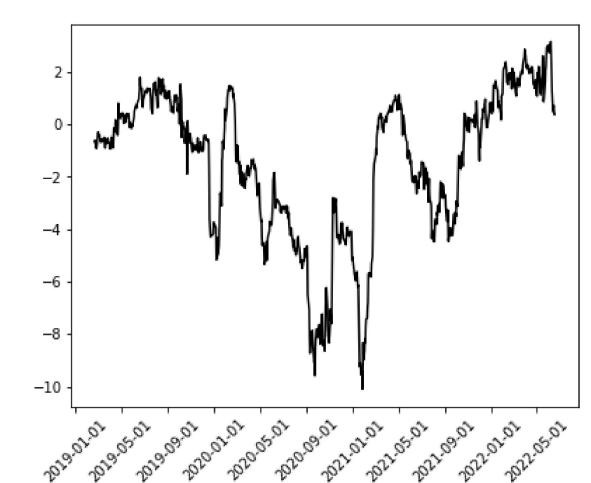
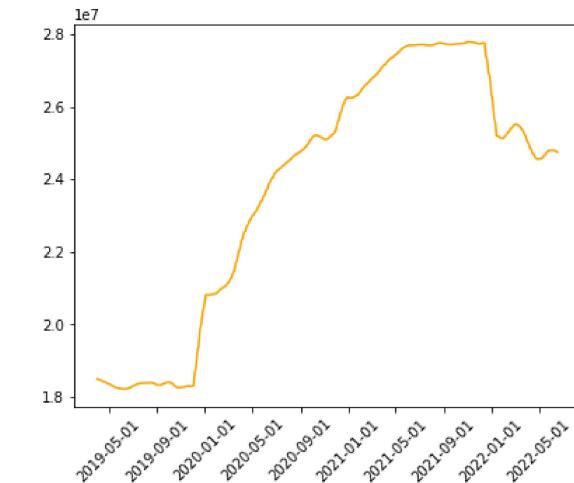
Sector Volume Factor: 1.2707168073107045

Sector Risk Trend Factor: -4.617890709055871

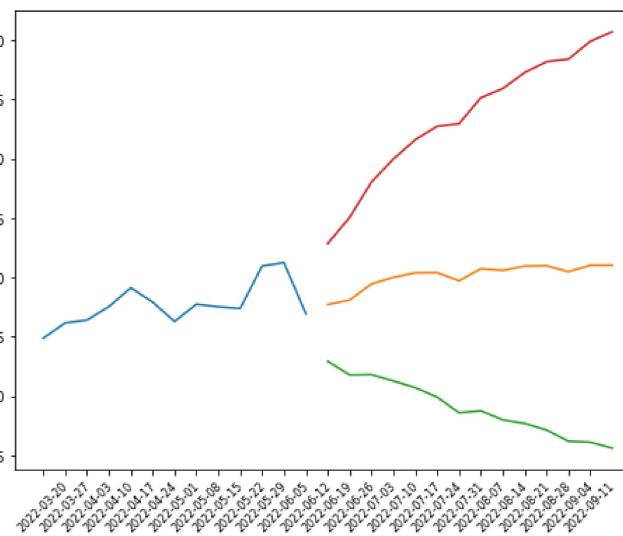
Index 1YMF: -287.8400573730469

Index Volume Factor: 1.1835166983613057

Index Risk Trend Factor: -3.791860877423899



```
ets next 13 weeks
inner cv scores:
best model: ['add', 'add', False]
best inner cv score, sdev (11 folds): 36.391371239272026 68.87309205240048
test cv mean error, stdev (10 folds): 39.75805827574408 71.36647056724222
sell date: 2022-09-11
expected return: 0.06296320305249105
discounted return: 0.000718616700517094
quarter return: 1.0683217860575231
```



```

['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: FCN
sector: error
sector: error
Index: SP400
vol_30d_2yr: 6853053.3203125
Sector 1YMF: 6.7500152587890625
1YMF: 6.7500152587890625
risk trend factor: 0.3590433065465876
Empty DataFrame
Columns: []
Index: [FCN]

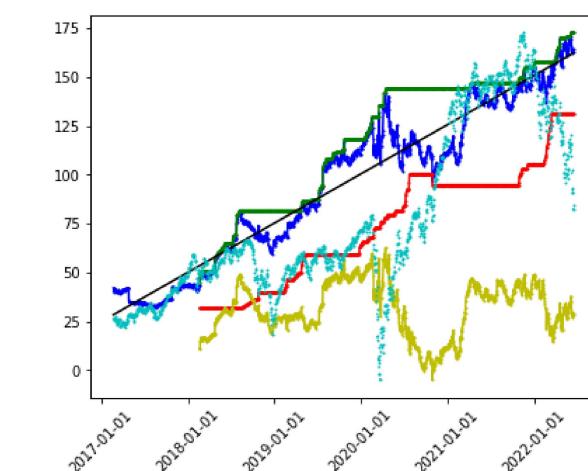
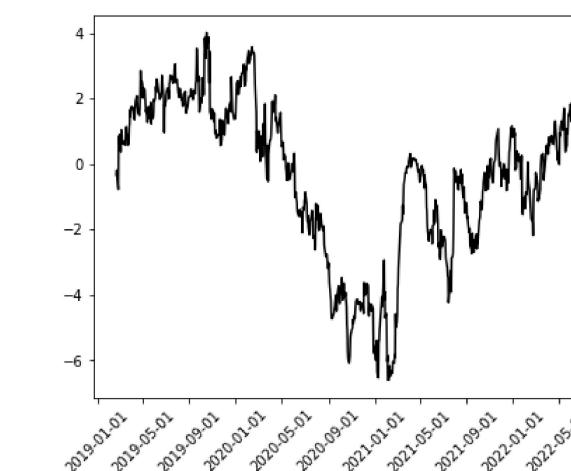
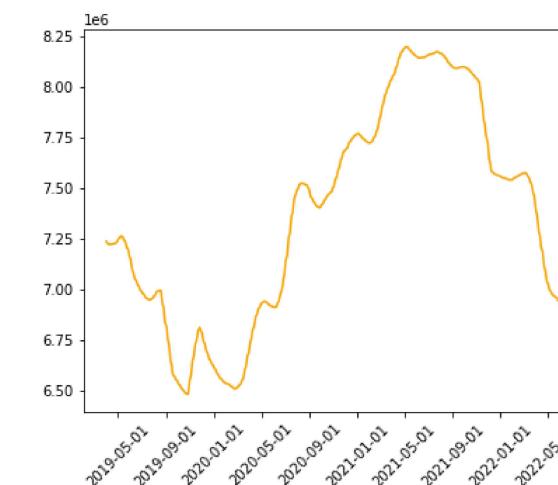
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
<b>2022-06-17</b>	164.020004	159.077845	165.278412	171.47898	162.282857	5.027495	152.227867	172.337847

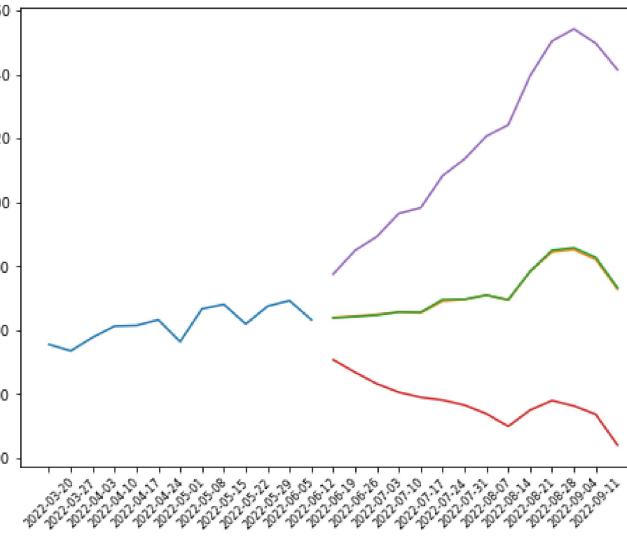
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
<b>FCN</b>	0.694756	164.020004	6853053.320312	0.888589	0.922824	0.404937

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: -69.05999755859375  
Index Volume Factor: 0.5765983741853883  
Index Risk Trend Factor: -5.134573474205833



ets next 13 weeks  
inner cv scores:  
best model: ['mul', 'add', True]  
best inner cv score, sdev (11 folds): 221.9363996832125 99.19003381369951  
test cv mean error, stdev (10 folds): 216.7443928056744 102.59619594941105  
sell date: 2022-09-04  
expected return: 0.12937876716759217  
discounted return: 0.0015610597253727931  
quarter return: 1.154313175112898



symbol: XOM  
sector: Energy  
Index: SP500  
vol\_30d\_2yr: 552640281.25  
Sector 1YMF: 9.1300048828125  
1YMF: 9.1300048828125  
risk trend factor: 0.34741268291096833  
beta currentRatio debtToEquity dividendRate dividendYield \  
XOM 1.040834 1.072 26.929 3.52 0.0409  
earningsGrowth ebitda ebitdaMargins forwardPE freeCashflow \  
XOM 1.003 53895000064 0.17427 9.558269 31484874752  
grossMargins grossProfits heldPercentInstitutions industry \  
XOM 0.31806 90045000000 0.56863 Oil & Gas Integrated  
marketCap operatingCashflow operatingMargins payoutRatio pegRatio \  
XOM 362840784896 53653000192 0.10859 0.5804 0.32  
priceToBook priceToSalesTrailing12Months profitMargins quickRatio \  
XOM 2.143942 1.173221 0.08339 0.739  
returnOnAssets returnOnEquity revenueGrowth revenuePerShare sector \  
XOM 0.06097 0.1559 0.525 72.369 Energy  
sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \  
XOM 4213199872 1.61 11073999872 2.629 47537000448  
totalRevenue trailingPE  
XOM 309269004288 14.281923  
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d\_lower 90d\_upper  


---

2022-06-17 86.120003 88.433461 96.553809 104.674158 88.917204 6.448671 76.019861 101.814547

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

XOM 1.153813 86.120003 552640281.25 0.738786 0.784328 0.530974

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: -3.82000732421875

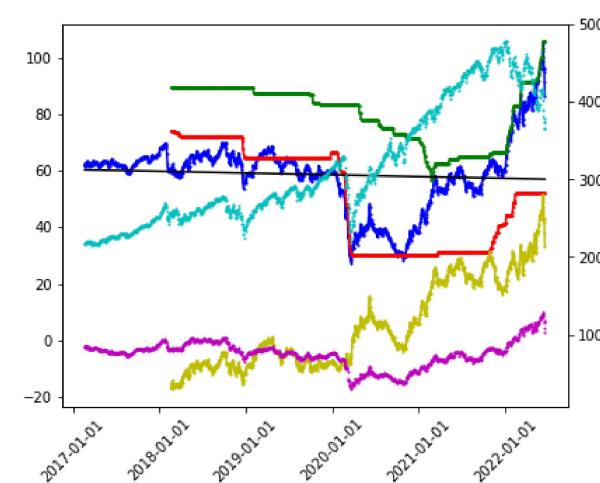
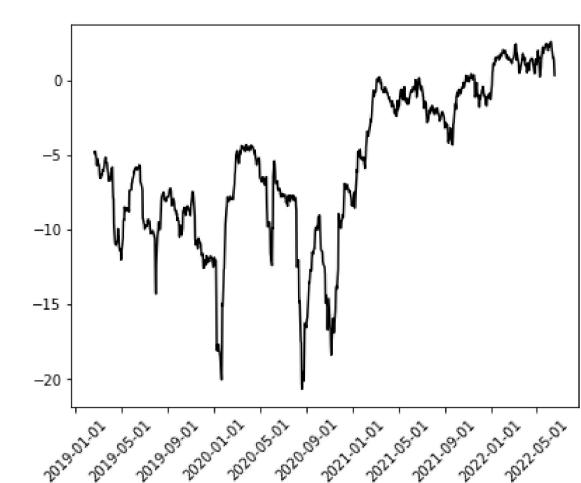
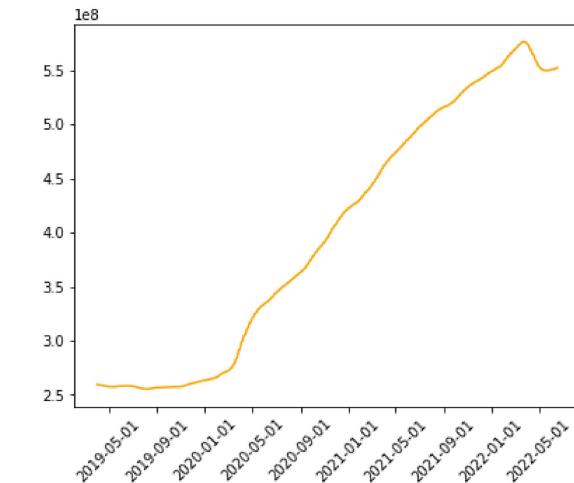
Sector Volume Factor: 0.8966412344901694

Sector Risk Trend Factor: -0.12330558135216596

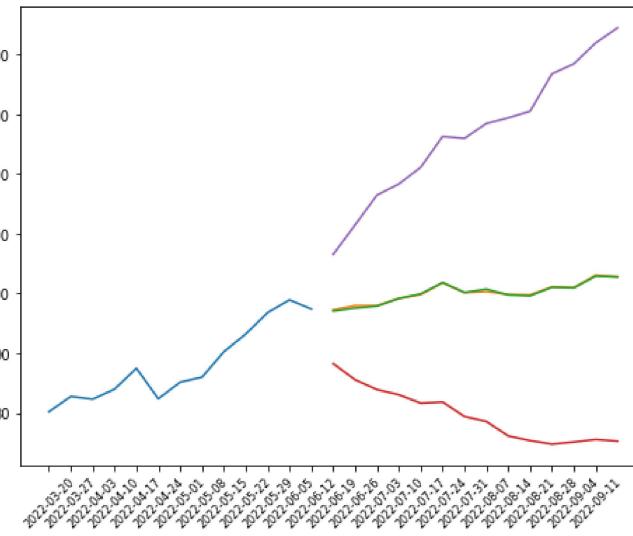
Index 1YMF: -287.8400573730469

Index Volume Factor: 1.1835166983613057

Index Risk Trend Factor: -3.791860877423899



```
ets next 13 weeks
inner cv scores:
best model: ['mul', 'add', False]
best inner cv score, sdev (11 folds): 91.49524310374426 82.24235870170313
test cv mean error, stdev (10 folds): 100.12742157673412 81.36662110947869
sell date: 2022-09-11
expected return: 0.1965755646592561
discounted return: 0.0021135690462554813
quarter return: 1.2143915279789432
```



```

['options', ('2022-07-15', '2023-01-20', '2024-01-19', '2026-02-21')]
[sustainability', Value
2022-5
palmOil False
controversialWeapons False
gambling False
socialScore 9.82
nuclear False
furLeather False
alcoholic False
gmo False
catholic False
socialPercentile None
peerCount 66
governanceScore 8.14
environmentPercentile None
animalTesting True
tobacco False
totalEsg 36.46
highestControversy 3
esgPerformance OUT_PERF
coal False
pesticides False
adult False
percentile 81.8
peerGroup Oil & Gas Producers
smallArms False
environmentScore 18.51
governancePercentile None
militaryContract False]
symbol: MANT
sector: Technology
Index: SP600
vol_30d_2yr: 4428022.265625
Sector 1YMF: 5.6399993896484375
1YMF: 5.6399993896484375
risk trend factor: 0.32063661839633545
    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


---


2022-06-17 94.790001 94.21236 94.956032 95.699705 88.233333 5.546632 77.140069 99.326598

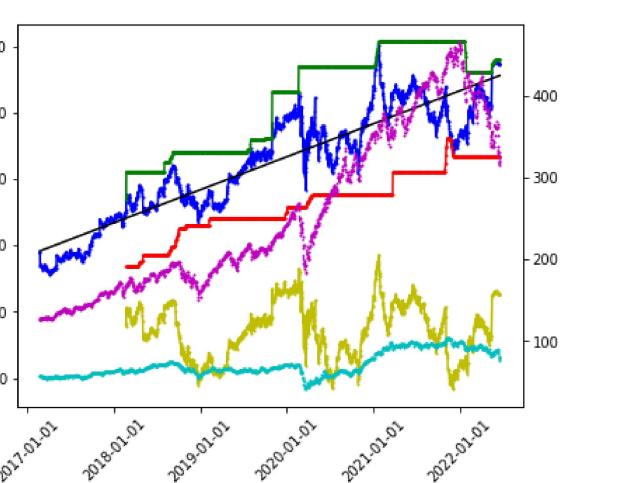
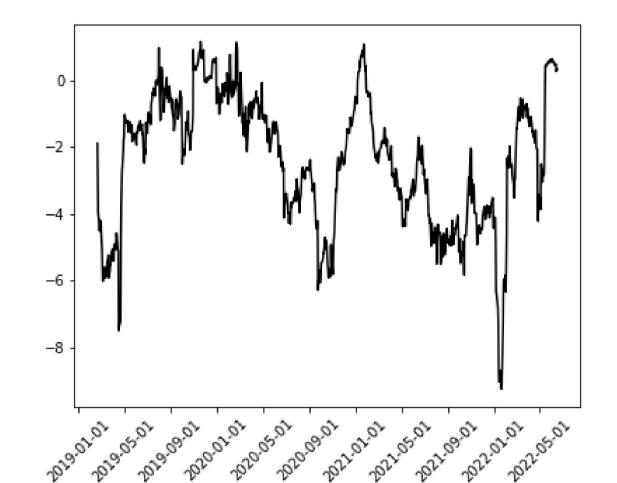
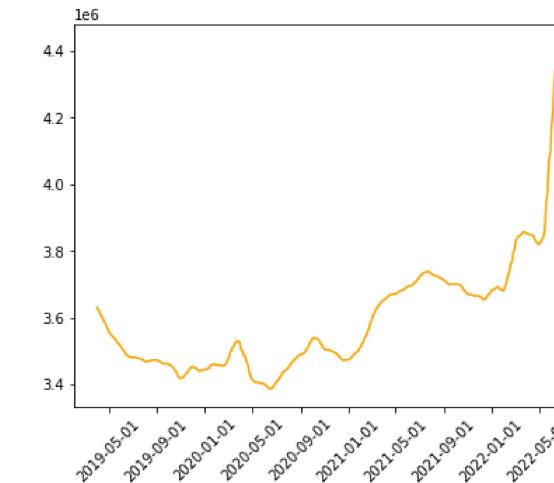
volume_factor latest_p vol_30d_2yr pct_2yr adf hurst


---


MANT 2.782348 94.790001 4428022.265625 0.833671 0.571232 0.363702

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: -363.4599914550781
Sector Volume Factor: 1.1528457613891094
Sector Risk Trend Factor: -4.954471974241429
Index 1YMF: -77.27001953125
Index Volume Factor: 1.232760496116622
Index Risk Trend Factor: -5.242200185196592

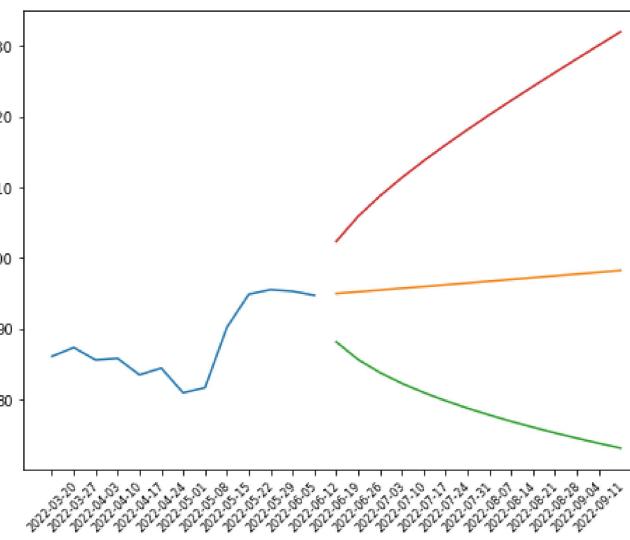
```



```

sets next 13 weeks
inner cv scores:
best model: [None, 'add', False]
best inner cv score, sdev (11 folds): 60.385622027777416 35.316278309518836
test cv mean error, stdev (10 folds): 57.005994391999096 35.30329377276276
sell date: 2022-09-18
expected return: 0.03629820039840771
discounted return: 0.0003876288112716342
quarter return: 1.0362982003984118

```



```

['options', ('2022-08-19',)]
symbol: SM
sector: Energy
Index: SP600
vol_30d_2yr: 85332599.609375
Sector 1YMF: 6.969999313354492
1YMF: 6.969999313354492
risk trend factor: 0.3050327621527311
    beta currentRatio debtToEquity dividendRate dividendYield      ebitda \
SM  5.488235      0.717     93.916      0.02      0.0006  1315937024

    ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
SM      0.45427   8.413136   570353344      0.8671   2136878000

    heldPercentInstitutions      industry marketCap operatingCashflow \
SM      0.88028 Oil & Gas E&P  4823732224      1396240000

    operatingMargins payoutRatio pegRatio priceToBook \
SM      0.18012      0.007      0.12     2.946938

    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
SM      1.66518      0.11608      0.7      0.06264

    returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \
SM      0.17312      0.931      23.974 Energy      121474000

    shortRatio totalCash totalCashPerShare totalDebt totalRevenue
SM      2.26  419887008      3.446  1986428032  2896824064

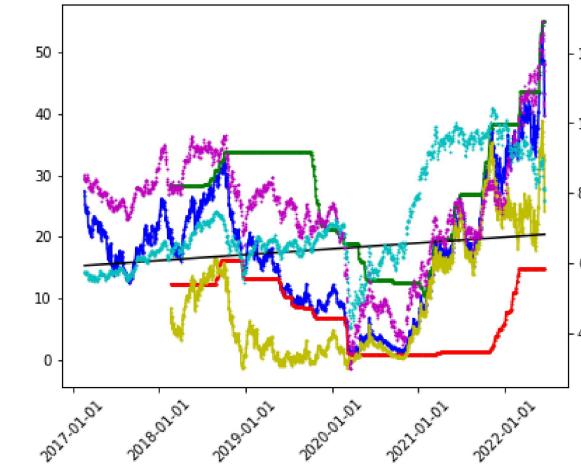
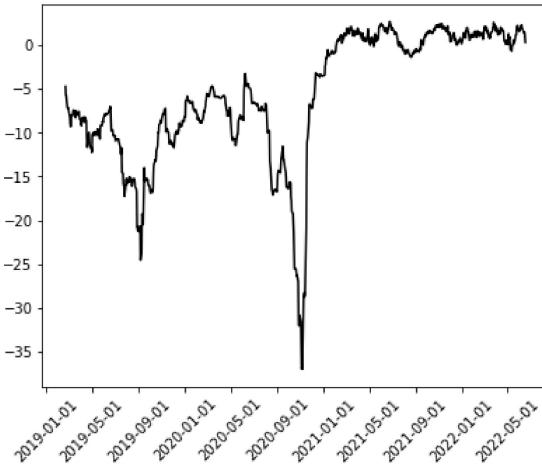
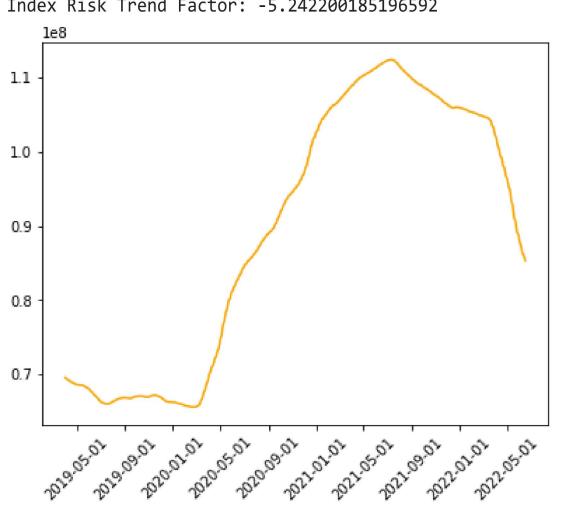
Adj Close  21dBOLD  21dMA-TP  21dBOLU  90dSMA  90dSDev  90d_lower  90d_upper
2022-06-17 39.709999 36.543497 46.618254 56.693011 41.080159 5.405133 30.269893 51.890424

volume_factor latest_p vol_30d_2yr pct_2yr adf hurst
SM  0.640686 39.709999 85332599.609375 0.715458 0.803847 0.471215

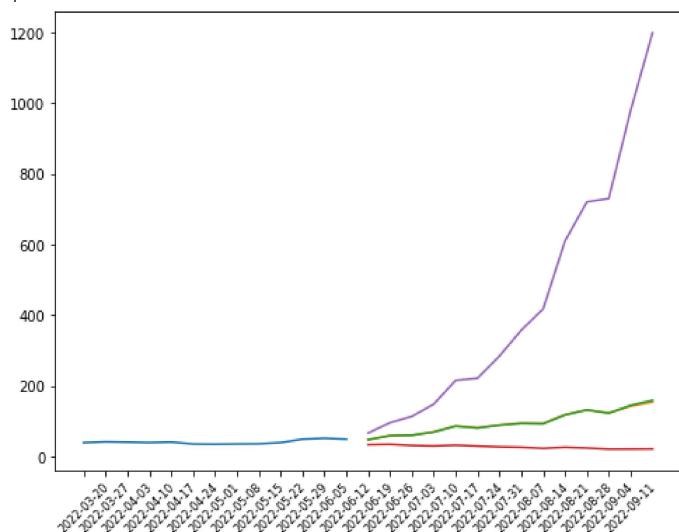
```

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: -3.82000732421875  
Sector Volume Factor: 0.8966412344901694  
Sector Risk Trend Factor: -0.12330558135216596  
Index 1YMF: -77.27001953125  
Index Volume Factor: 1.232760496116622  
Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks  
inner cv scores:  
best model: ['mul', 'mul', True]  
best inner cv score, sdev (11 folds): 42.37610152236556 58.106738953917485  
test cv mean error, stdev (10 folds): 46.450576534700396 59.425731885749904  
sell date: 2022-09-18  
expected return: 2.8759349619212884  
discounted return: 0.014834905637306273  
quarter return: 3.875934961921255



	2022-03-31	2021-12-31	2021-09-30	\
['quarterly_balance_sheet',				
Capital Surplus	1.844478e+09	1.840228e+09	1.838620e+09	
Total Liab	3.280672e+09	3.170846e+09	3.425061e+09	
Total Stockholder Equity	2.115109e+09	2.063131e+09	1.636899e+09	
Deferred Long Term Liab	2.300000e+06	2.700000e+06	3.100000e+06	
Other Current Liab	5.381270e+08	4.047460e+08	5.520440e+08	
Total Assets	5.395781e+09	5.233977e+09	5.061960e+09	
Common Stock	1.219000e+06	1.219000e+06	1.215000e+06	
Other Current Assets	9.649000e+06	2.409500e+07	2.451400e+07	
Retained Earnings	2.820790e+08	2.345330e+08	-1.903670e+08	
Other Liab	2.415590e+08	1.889150e+08	2.438640e+08	
Treasury Stock	-1.266700e+07	-1.284900e+07	-1.256900e+07	
Other Assets	5.397300e+07	2.576600e+07	6.020700e+07	
Cash	4.198870e+08	3.327160e+08	2.980000e+07	
Total Current Liabilities	1.058721e+09	8.893270e+08	1.103567e+09	
Other Stockholder Equity	-1.266700e+07	-1.284900e+07	-1.256900e+07	
Property Plant Equipment	4.582973e+09	4.595024e+09	4.665483e+09	
Total Current Assets	7.588350e+08	6.131870e+08	3.362700e+08	
Net Tangible Assets	2.115109e+09	2.063131e+09	1.636899e+09	
Net Receivables	3.210760e+08	2.472010e+08	2.722480e+08	
Long Term Debt	1.980392e+09	2.081164e+09	2.077630e+09	
Accounts Payable	5.145580e+08	2.507200e+07	5.424740e+08	

2021-06-30

Capital Surplus	1.838859e+09
Total Liab	3.500489e+09
Total Stockholder Equity	1.552509e+09
Deferred Long Term Liab	3.500000e+06
Other Current Liab	5.450620e+08
Total Assets	5.052998e+09
Common Stock	1.210000e+06
Other Current Assets	3.130300e+07
Retained Earnings	-2.747450e+08
Other Liab	2.566960e+08
Treasury Stock	-1.281500e+07
Other Assets	6.877900e+07
Cash	NaN
Total Current Liabilities	1.051668e+09
Other Stockholder Equity	-1.281500e+07
Property Plant Equipment	4.714809e+09
Total Current Assets	2.694100e+08
Net Tangible Assets	1.552509e+09
Net Receivables	2.295120e+08
Long Term Debt	2.192125e+09
Accounts Payable	4.962850e+08

]

2022-03-31 2021-12-31 \

['quarterly_cashflow',			
Change To Liabilities	0.0	218238000.0	
Total Cashflows From Investing Activities	-150127000.0	-122484000.0	
Net Borrowings	-104770000.0	-104770000.0	
Total Cash From Financing Activities	-104794000.0	-4230000.0	
Change To Operating Activities	-137962000.0	-51950000.0	
Net Income	48764000.0	424900000.0	
Change In Cash	87171000.0	302916000.0	
Total Cash From Operating Activities	342092000.0	429630000.0	
Depreciation	160481000.0	208761000.0	
Other Cashflows From Financing Activities	-24000.0	-4339000.0	
Change To Netincome	266799000.0	-273197000.0	
Capital Expenditures	-150127000.0	-124576000.0	
Issuance Of Stock	NaN	1324000.0	
Dividends Paid	NaN	-1215000.0	
Change To Account Receivables	NaN	-101047000.0	
Other Cashflows From Investing Activities	NaN	NaN	

2021-09-30 2021-06-30

Change To Liabilities	0.0	0.0
Total Cashflows From Investing Activities	-174795000.0	-222322000.0
Net Borrowings	-118792000.0	-74213000.0
Total Cash From Financing Activities	-123524000.0	-74077000.0
Change To Operating Activities	21078000.0	82529000.0
Net Income	85593000.0	-222995000.0
Change In Cash	29800000.0	29800000.0
Total Cash From Operating Activities	328119000.0	296399000.0
Depreciation	211451000.0	213464000.0
Other Cashflows From Financing Activities	-4732000.0	-1000.0
Change To Netincome	6092000.0	218679000.0
Capital Expenditures	-183409000.0	-222614000.0
Issuance Of Stock	1324000.0	1315000.0
Dividends Paid	-1215000.0	-1178000.0
Change To Account Receivables	-101047000.0	-101047000.0
Other Cashflows From Investing Activities	-221000.0	292000.0

]

Revenue Earnings

Quarter

2Q2021	538649000	-222995000
3Q2021	724539000	85593000
4Q2021	814260000	424900000
1Q2022	819376000	48764000

]

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

['quarterly_financials',			
Research Development	None	None	None
Effect Of Accounting Charges	None	None	None
Income Before Tax	61625000.0	434933000.0	85554000.0
Minority Interest	None	None	None
Net Income	48764000.0	424900000.0	85593000.0

Selling General Administrative	24996000.0	37062000.0	25530000.0
Gross Profit	723085000.0	714875000.0	629894000.0
Ebit	101736000.0	474411000.0	126257000.0
Operating Income	101736000.0	474411000.0	126257000.0
Other Operating Expenses	426826000.0	-17909000.0	257947000.0
Interest Expense	-39387000.0	-40085000.0	-40861000.0
Extraordinary Items	None	None	None
Non Recurring	None	None	None
Other Items	None	None	None
Income Tax Expense	12861000.0	10033000.0	-39000.0
Total Revenue	819376000.0	814260000.0	724539000.0
Total Operating Expenses	717640000.0	339849000.0	598282000.0
Cost Of Revenue	96291000.0	99385000.0	94645000.0
Total Other Income Expense Net	-40111000.0	-39478000.0	-40703000.0
Discontinued Operations	None	None	None
Net Income From Continuing Ops	48764000.0	424900000.0	85593000.0
Net Income Applicable To Common Shares	48764000.0	424900000.0	85593000.0

2021-06-30

Research Development	None
Effect Of Accounting Charges	None
Income Before Tax	-223157000.0
Minority Interest	None
Net Income	-222995000.0
Selling General Administrative	24639000.0
Gross Profit	443993000.0
Ebit	-180624000.0
Operating Income	-180624000.0
Other Operating Expenses	377800000.0
Interest Expense	-39536000.0
Extraordinary Items	None
Non Recurring	None
Other Items	None
Income Tax Expense	-162000.0
Total Revenue	538649000.0
Total Operating Expenses	719273000.0
Cost Of Revenue	94656000.0
Total Other Income Expense Net	-42533000.0
Discontinued Operations	None
Net Income From Continuing Ops	-222995000.0
Net Income Applicable To Common Shares	-222995000.0

```
[ 'mutualfund_holders', ]
Holder Shares Date Reported \
0 iShares Core S&P Smallcap ETF 8545223 2022-01-30
1 Vanguard Total Stock Market Index Fund 3454105 2021-12-30
2 Vanguard Small-Cap Index Fund 3058030 2021-12-30
3 iShares Russell 2000 ETF 2729906 2022-01-30
4 SPDR (R) Ser Tr-SPDR (R) S&P (R) Oil & Gas Exp... 2729590 2022-01-30
5 Vanguard Small Cap Value Index Fund 1938357 2021-12-30
6 Vanguard Extended Market Index Fund 1597503 2021-12-30
7 iShares S&P Small-Cap 600 Growth ETF 1404764 2022-01-30
8 First Trust NASDAQ Oil & Gas ETF 1361871 2022-02-27
9 iShares Russell 2000 Value ETF 1284094 2022-01-30
```

% Out	Value
0 0.0701	280368766
1 0.0283	101827015
2 0.0251	90150724
3 0.0224	89568215
4 0.0224	89557847
5 0.0159	57142764
6 0.0131	47094388
7 0.0115	46090306
8 0.0112	48360039
9 0.0105	42131124

[ 'options', ('2022-08-19', '2023-01-20', '2024-01-19') ]

symbol: DINO  
sector: Energy  
Index: SP400  
vol\_30d\_2yr: 51433534.1796875  
Sector 1YMF: 6.369998931884766  
1YMF: 6.369998931884766  
risk trend factor: 0.2699152264297761  
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
-----------	---------	----------	---------	--------	---------	-----------	-----------

2022-06-17	45.0	43.432974	51.035714	58.638454	43.785397	6.19363	31.398138	56.172656
------------	------	-----------	-----------	-----------	-----------	---------	-----------	-----------

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

DINO	1.094012	45.0	51433534.179688	0.676181	0.488602	0.560442
------	----------	------	-----------------	----------	----------	----------

l axis r axis

legend 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: -3.82000732421875

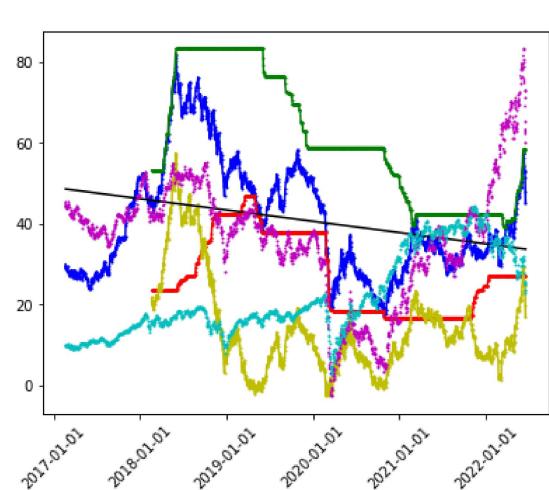
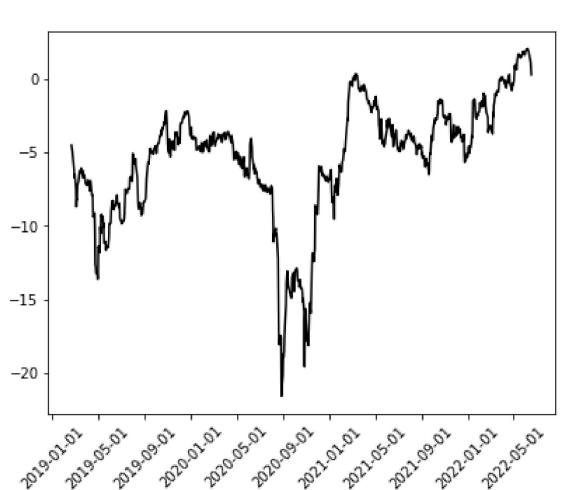
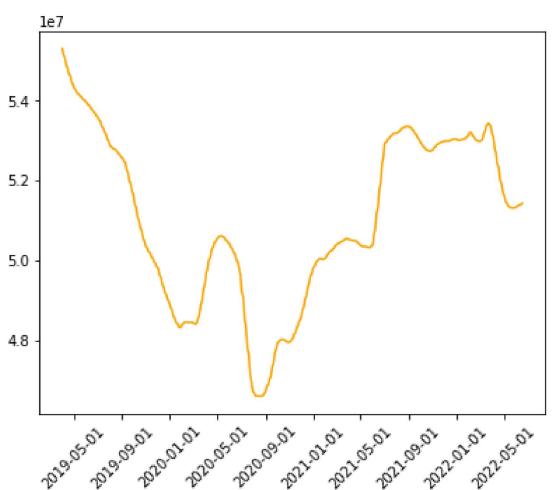
Sector Volume Factor: 0.8966412344901694

Sector Risk Trend Factor: -0.12330558135216596

Index 1YMF: -69.05999755859375

Index Volume Factor: 0.5765983741853883

Index Risk Trend Factor: -5.134573474205833



ets next 13 weeks

inner cv scores:

best model: [None, 'add', True]

best inner cv score, sdev (11 folds): 68.74363453666071 61.18344803930672

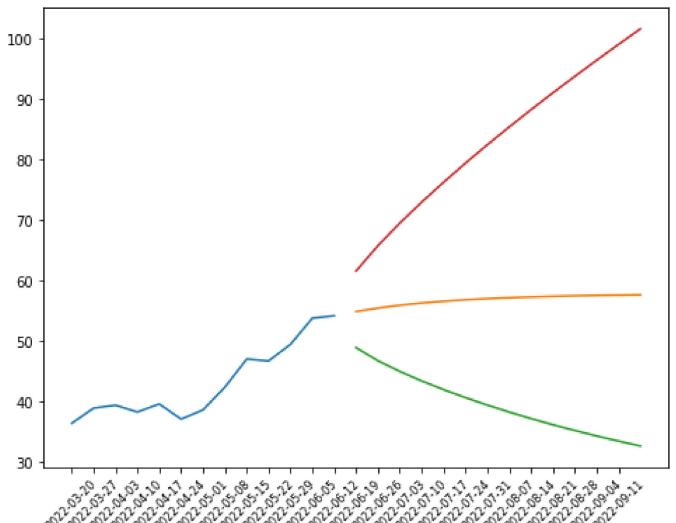
test cv mean error, stdev (10 folds): 74.39993477363797 61.36632124815793

sell date: 2022-09-18

expected return: 0.2808344011369161

discounted return: 0.0026939672414314497

quarter return: 1.2808344011369226



symbol: PLAB  
sector: Technology  
Index: SP600  
vol\_30d\_2yr: 10786618.9453125  
Sector 1YMF: 2.2899999618530273  
1YMF: 2.2899999618530273  
risk trend factor: 0.26412914530661946  
beta currentRatio debtToEquity earningsGrowth ebitda \  
PLAB 0.980357 3.417 7.842 1.889 233440992  
ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \  
PLAB 0.31281 10.108109 90646496 0.30828 167044000  
heldPercentInstitutions industry marketCap \  
PLAB 0.90554 Semiconductor Equipment & Materials 1385207808  
operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \  
PLAB 195842000 0.19934 0 1.19 1.62538  
priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \  
PLAB 1.856183 0.12032 2.814 0.07156  
returnOnEquity revenueGrowth revenuePerShare sector \  
PLAB 0.12739 0.28 12.342 Technology  
sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \  
PLAB 61729400 3.37 329281984 5.433 82548000  
totalRevenue trailingPE  
PLAB 746267008 15.338346

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d\_lower 90d\_upper

2022-06-17 19.15 14.678059 19.802381 24.926703 17.249841 2.549321 12.151199 22.348483

volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst

PLAB 2.163783 19.15 10786618.945312 0.729861 0.736899 0.332818

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: -363.4599914550781

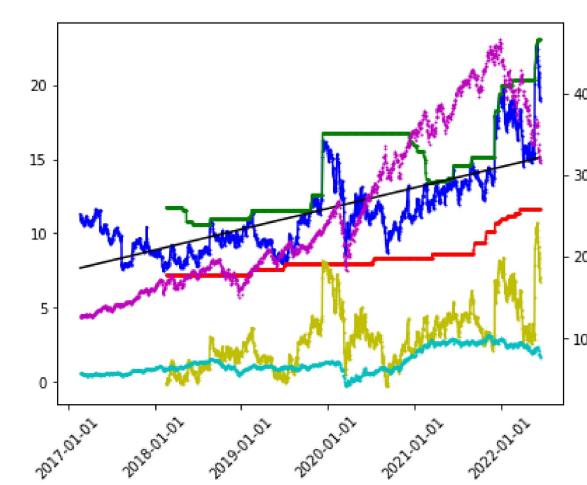
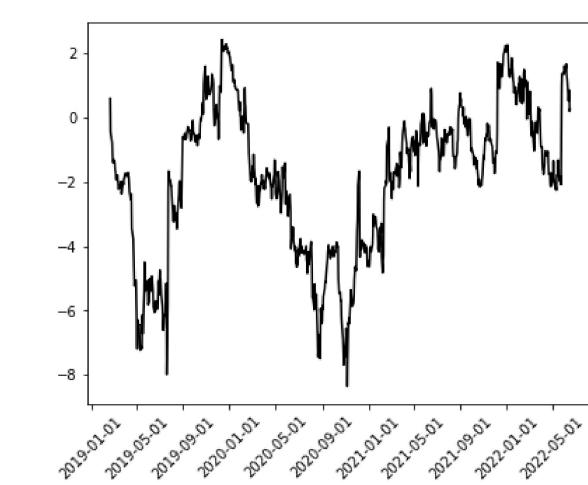
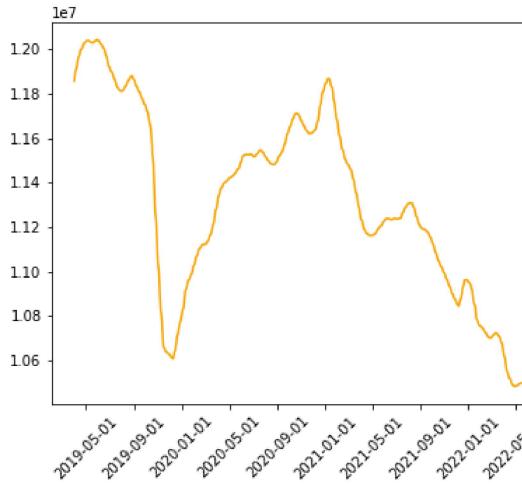
Sector Volume Factor: 1.1528457613891094

Sector Risk Trend Factor: -4.954471974241429

Index 1YMF: -77.27001953125

Index Volume Factor: 1.232760496116622

Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks

inner cv scores:

best model: ['mul', 'mul', False]

best inner cv score, sdev (11 folds): 3.334656929030538 2.7550711262742067

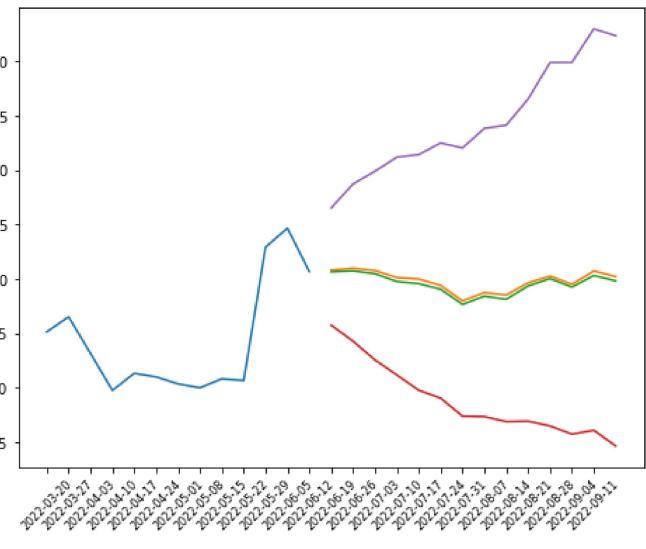
test cv mean error, stdev (10 folds): 3.3074930878853954 2.8881385112542737

sell date: 2022-06-26

expected return: 0.06992632909908494

discounted return: 0.008484515546484772

quarter return: 2.1755524670673285



```
[ 'options', ('2022-12-16',) ]
symbol: MPC
sector: Energy
Index: SP500
vol_30d_2yr: 141817662.109375
Sector 1YMF: 6.860008239746094
1YMF: 6.860008239746094
risk trend factor: 0.20927420668724137
    beta currentRatio debtToEquity dividendRate dividendYield      ebitda \
MPC  1.75499     1.449     89.568     2.32      0.0266  8572000256
```

```
ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
MPC      0.06306  11.191026  18097874944      0.08778  10443000000

heldPercentInstitutions           industry   marketCap \
MPC      0.79745  Oil & Gas Refining & Marketing  47223455744

operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
MPC      6418999808      0.0386     0.5472     0.35    1.98454

priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
MPC      0.347428     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  4.97776

Adj Close  21dBOLD  21dMA-TP  21dBOLU  90dSMA  90dSD  90d_lower  90d_upper
2022-06-17 87.290001 89.493723 102.090159 114.686595 92.392331 8.807067 74.778196 110.006465
```

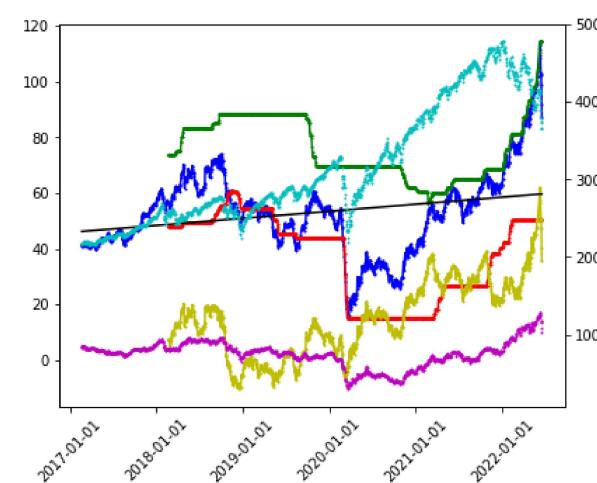
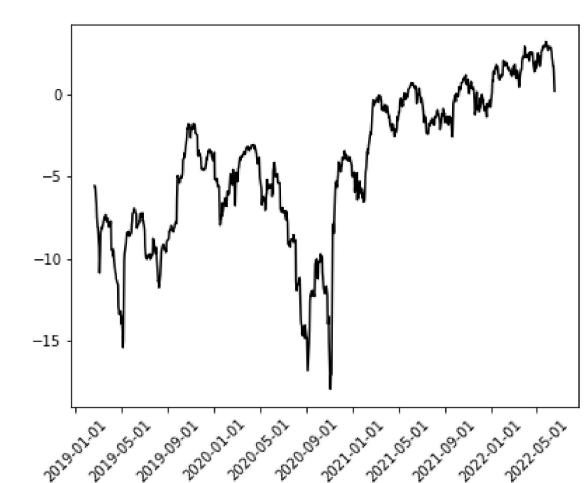
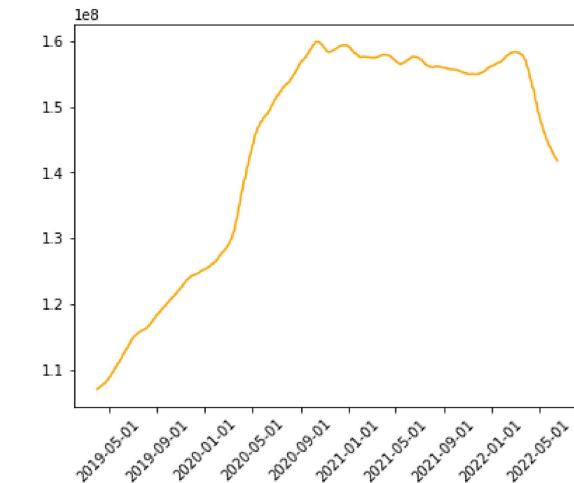
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
---------------	----------	-------------	---------	-----	-------

```
MPC      1.221452  87.290001  141817662.109375  0.691764  0.549549  0.514371
```

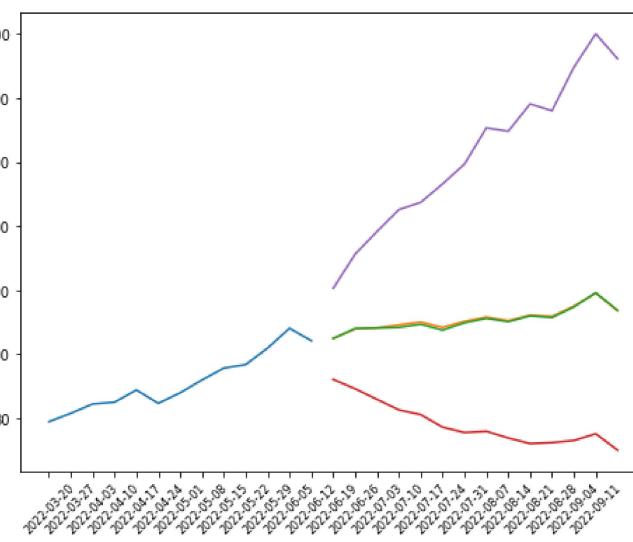
l axis r axis

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: -3.82000732421875  
Sector Volume Factor: 0.8966412344901694  
Sector Risk Trend Factor: -0.12330558135216596  
Index 1YMF: -287.8400573730469  
Index Volume Factor: 1.1835166983613057  
Index Risk Trend Factor: -3.791860877423899



```
ets next 13 weeks
inner cv scores:
best model: ['add', 'mul', False]
best inner cv score, sdev (11 folds): 140.0238200142677 139.69179090033344
test cv mean error, stdev (10 folds): 136.35409856051533 146.00360337831208
sell date: 2022-09-11
expected return: 0.36403694571141243
discounted return: 0.003659014914468406
quarter return: 1.399360021186027
```



```

['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: LLY
sector: Healthcare
Index: SP500
vol_30d_2yr: 70977344.3359375
Sector 1YMF: 8.8499755859375
1YMF: 8.8499755859375
risk trend factor: 0.18730107060185186
    beta currentRatio debtToEquity dividendRate dividendYield \
LLY 0.430392 1.267 174.931 3.92 0.0134

    earningsGrowth ebitda ebitdaMargins forwardPE freeCashflow \
LLY 0.409 10721399808 0.36563 38.83845 4736287744

    grossMargins grossProfits heldPercentInstitutions \
LLY 0.7556 21345300000 0.84303

    industry marketCap operatingCashflow \
LLY Drug Manufacturers-General 278272606208 8062499840

    operatingMargins payoutRatio pegRatio priceToBook \
LLY 0.30994 0.5245 5.44 34.015434

    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
LLY 9.489974 0.20903 0.772 0.12117

    returnOnEquity revenueGrowth revenuePerShare sector \
LLY 0.74019 0.148 32.376 Healthcare

    sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
LLY 956592000 1.74 2571599872 2.857 16551999488

    totalRevenue trailingPE
LLY 29322799104 44.412212

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

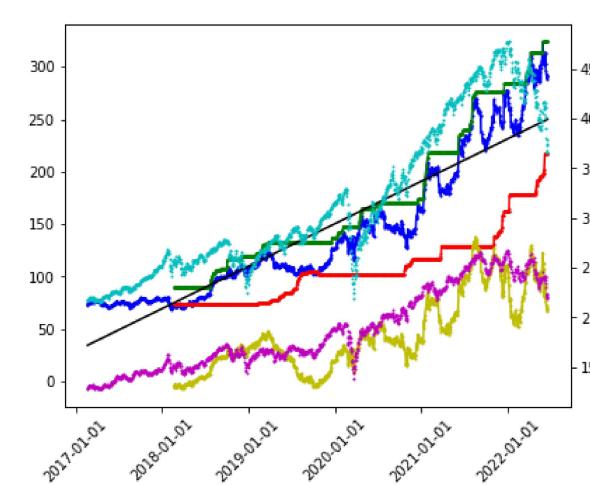
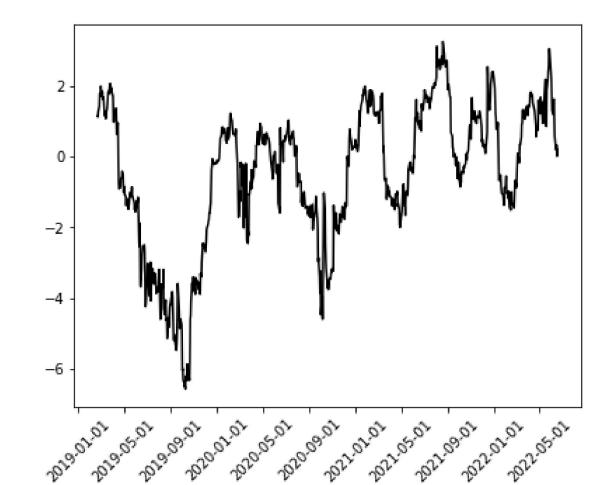
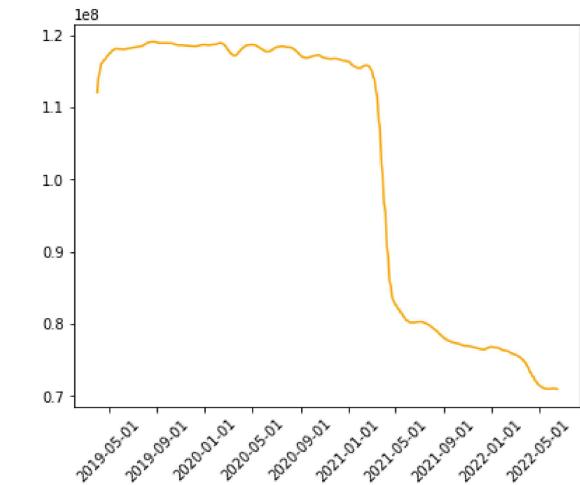
```

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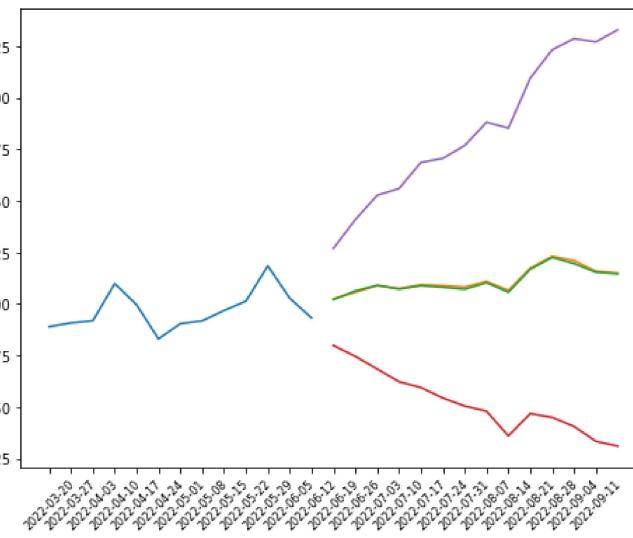
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst			
LLY	0.967658	290.899994	284.096885	302.232381	320.367877	296.315556	9.524706	277.266144	315.364968

Sector 1YMF: -122.20997619628906  
Sector Volume Factor: 1.2238851152317325  
Sector Risk Trend Factor: -3.3236323632363236  
Index 1YMF: -287.8400573730469  
Index Volume Factor: 1.1835166983613057  
Index Risk Trend Factor: -3.791860877423899

	l axis	r axis
	<b>legend</b>	<b>legend</b>
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): 459.6304362722876 543.8838721179123
test cv mean error, stdev (10 folds): 480.5258484532119 566.2048214421843
sell date: 2022-08-28
expected return: 0.11058611715620836
discounted return: 0.0014783862361804623
quarter return: 1.1455800400356924
```



	2022-03-31	2021-12-31	2021-09-30	\
['quarterly_balance_sheet',				
Intangible Assets	7.482400e+09	7.691900e+09	7.887700e+09	
Capital Surplus	6.656300e+09	6.833400e+09	6.758000e+09	
Total Liab	3.745730e+10	3.965120e+10	4.023290e+10	
Total Stockholder Equity	9.330800e+09	8.979200e+09	7.757000e+09	
Minority Interest	1.312000e+08	1.756000e+08	1.971000e+08	
Other Current Liab	3.135000e+09	3.814100e+09	2.513000e+09	
Total Assets	4.691930e+10	4.880600e+10	4.818700e+10	
Common Stock	5.941000e+08	5.963000e+08	5.982000e+08	
Other Current Assets	3.880000e+07	9.000000e+06	5.500000e+06	
Retained Earnings	9.369400e+09	8.958500e+09	9.639400e+09	
Other Liab	8.875200e+09	8.674200e+09	1.099380e+10	
Good Will	3.892000e+09	3.892000e+09	3.884100e+09	
Treasury Stock	-7.289000e+09	-7.409000e+09	-9.238600e+09	
Other Assets	6.506600e+09	6.380000e+09	6.122000e+09	
Cash	2.459200e+09	3.818500e+09	3.788200e+09	
Total Current Liabilities	1.338600e+10	1.505270e+10	1.368200e+10	
Deferred Long Term Asset Charges	2.464900e+09	2.489300e+09	2.625600e+09	
Short Long Term Debt	1.355900e+09	1.539500e+09	1.580000e+09	
Other Stockholder Equity	-7.238500e+09	-7.356300e+09	-9.185900e+09	
Property Plant Equipment	9.102700e+09	8.985100e+09	8.920400e+09	
Total Current Assets	1.696478e+10	1.845240e+10	1.780830e+10	
Long Term Investments	2.970900e+09	3.404600e+09	3.564500e+09	
Net Tangible Assets	-2.043600e+09	-2.604700e+09	-4.014800e+09	
Short Term Investments	1.091000e+08	9.010000e+07	3.710000e+07	
Net Receivables	7.763600e+09	8.112500e+09	6.992300e+09	
Long Term Debt	1.519610e+10	1.538700e+10	1.555710e+10	
Inventory	3.893000e+09	3.886000e+09	3.907400e+09	
Accounts Payable	1.433300e+09	1.670600e+09	1.566800e+09	

	2021-06-30			
Intangible Assets	7.985400e+09			
Capital Surplus	6.669200e+09			
Total Liab	4.114550e+10			
Total Stockholder Equity	6.444400e+09			
Minority Interest	2.191000e+08			
Other Current Liab	3.878400e+09			
Total Assets	4.780900e+10			
Common Stock	5.981000e+08			
Other Current Assets	5.400000e+06			
Retained Earnings	8.538100e+09			
Other Liab	1.127500e+10			
Good Will	3.884200e+09			
Treasury Stock	-9.353000e+09			
Other Assets	6.104000e+09			
Cash	3.220000e+09			
Total Current Liabilities	1.509320e+10			
Deferred Long Term Asset Charges	2.674900e+09			
Short Long Term Debt	1.625700e+09			
Other Stockholder Equity	-9.300300e+09			
Property Plant Equipment	8.855500e+09			
Total Current Assets	1.729550e+10			
Long Term Investments	3.684400e+09			
Net Tangible Assets	-5.425200e+09			
Short Term Investments	5.120000e+07			
Net Receivables	6.869700e+09			
Long Term Debt	1.477730e+10			
Inventory	3.824900e+09			
Accounts Payable	1.597800e+09			]

	2022-03-31	2021-12-31	\
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['quarterly_cashflow',			
Investments	-2.320000e+07	-1.180000e+07	
Change To Liabilities	0.000000e+00	-6.641000e+08	
Total Cashflows From Investing Activities	-1.013800e+09	-3.790000e+08	
Net Borrowings	-2.104000e+08	-2.600000e+06	
Total Cash From Financing Activities	-2.878300e+09	-1.526500e+09	
Change To Operating Activities	-4.550000e+07	2.063500e+09	
Net Income	1.902900e+09	1.726100e+09	
Change In Cash	-1.359300e+09	3.030000e+07	
Repurchase Of Stock	-1.500000e+09	-7.500000e+08	
Effect Of Exchange Rate	3.360000e+07	-2.207000e+08	
Total Cash From Operating Activities	2.499200e+09	2.156500e+09	
Depreciation	4.357000e+08	4.457000e+08	
Other Cashflows From Investing Activities	-1.334000e+08	2.700000e+07	
Dividends Paid	-8.855000e+08	-7.733000e+08	
Other Cashflows From Financing Activities	-2.824000e+08	-6.000000e+05	
Change To Netincome	2.061000e+08	4.592000e+08	
Capital Expenditures	-3.654000e+08	-2.914000e+08	
Change To Inventory	Nan	-2.359000e+08	
Change To Account Receivables	Nan	-1.278300e+09	

	2021-09-30	2021-06-30	
Investments	-1.077000e+08	-2.440000e+07	
Change To Liabilities	0.000000e+00	0.000000e+00	
Total Cashflows From Investing Activities	-6.165000e+08	-4.833000e+08	
Net Borrowings	3.077000e+08	2.000000e+08	
Total Cash From Financing Activities	-4.632000e+08	-1.083200e+09	
Change To Operating Activities	-6.665000e+08	2.212000e+08	
Net Income	1.110100e+09	1.390200e+09	
Change In Cash	5.682000e+08	2.176000e+08	
Repurchase Of Stock	-7.500000e+08	-5.000000e+08	
Effect Of Exchange Rate	1.660000e+07	8.600000e+06	
Total Cash From Operating Activities	1.631300e+09	1.775500e+09	

```

Depreciation 3.823000e+08 3.693000e+08
Other Cashflows From Investing Activities -5.320000e+07 7.240000e+07
Dividends Paid -7.704000e+08 -7.683000e+08
Other Cashflows From Financing Activities -5.000000e+05 -1.490000e+07
Change To Netincome 8.054000e+08 -2.052000e+08
Capital Expenditures -3.368000e+08 -3.813000e+08
Change To Inventory -2.359000e+08 -2.359000e+08
Change To Account Receivables -1.278300e+09 -1.278300e+09 ]
['quarterly_earnings', Revenue Earnings
Quarter
2Q2021 6740100000 1390200000
3Q2021 6772800000 1110100000
4Q2021 7999900000 1726100000
1Q2022 7810000000 1902900000]

```

```
['quarterly_financials', 2022-03-31 2021-12-31 \
```

Research Development	1610100000.0	1959400000.0
Effect Of Accounting Charges	None	None
Income Before Tax	2053600000.0	1839900000.0
Minority Interest	131200000.0	175600000.0
Net Income	1902900000.0	1726100000.0
Selling General Administrative	1464600000.0	1519400000.0
Gross Profit	5737900000.0	5854300000.0
Ebit	2663200000.0	2375500000.0
Operating Income	2663200000.0	2375500000.0
Other Operating Expenses	None	None
Interest Expense	-84900000.0	-81400000.0
Extraordinary Items	None	None
Non Recurring	None	None
Other Items	None	None
Income Tax Expense	1507000000.0	1138000000.0
Total Revenue	7810000000.0	7999900000.0
Total Operating Expenses	5146800000.0	5624400000.0
Cost Of Revenue	2072100000.0	2145600000.0
Total Other Income Expense Net	-609600000.0	-535600000.0
Discontinued Operations	None	None
Net Income From Continuing Ops	1902900000.0	1726100000.0
Net Income Applicable To Common Shares	1902900000.0	1726100000.0

	2021-09-30	2021-06-30
Research Development	1708900000.0	1672800000.0
Effect Of Accounting Charges	None	None
Income Before Tax	1245300000.0	1593900000.0
Minority Interest	197100000.0	219100000.0
Net Income	1110100000.0	1390200000.0
Selling General Administrative	1505300000.0	1614600000.0
Gross Profit	5342000000.0	5209900000.0
Ebit	2127800000.0	1922500000.0
Operating Income	2127800000.0	1922500000.0
Other Operating Expenses	None	None
Interest Expense	-83600000.0	-86900000.0
Extraordinary Items	None	None
Non Recurring	None	None
Other Items	None	None
Income Tax Expense	135200000.0	203700000.0
Total Revenue	6772800000.0	6740100000.0
Total Operating Expenses	4645000000.0	4817600000.0
Cost Of Revenue	1430800000.0	1530200000.0
Total Other Income Expense Net	-882500000.0	-328600000.0
Discontinued Operations	None	None
Net Income From Continuing Ops	1110100000.0	1390200000.0
Net Income Applicable To Common Shares	1110100000.0	1390200000.0

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

0	Vanguard Total Stock Market Index Fund	24466874	2021-12-30
1	Vanguard 500 Index Fund	16814257	2021-12-30
2	Vanguard/Primecap Fund	16263808	2021-12-30
3	Vanguard Specialized-Health Care Fund	10213125	2022-01-30
4	SPDR S&P 500 ETF Trust	8436788	2022-01-30
5	Fidelity 500 Index Fund	8130898	2022-02-27
6	iShares Core S&P 500 ETF	6602520	2022-01-30
7	Vanguard Index-Value Index Fund	6578581	2021-12-30
8	Fidelity Contrafund Inc	6465969	2022-02-27
9	Vanguard Institutional Index Fund-Institutiona...	5982359	2021-12-30

% Out	Value
0 0.0258	6758239936
1 0.0177	4644434068
2 0.0171	4492389045
3 0.0107	2506198743
4 0.0089	2070303407
5 0.0086	2032317955
6 0.0069	1620192382
7 0.0069	1817135643
8 0.0068	1616168951
9 0.0063	1652447202 ]

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

```
['sustainability', Value
```

2022-5

palmOil	False
controversialWeapons	False
gambling	False
socialScore	17.4
nuclear	False

```

furLeather      False
alcoholic       False
gmo             True
catholic        0
socialPercentile 83
peerCount       11.56
environmentPercentile 0
animalTesting   True
tobacco         False
totalEsg        32.4
highestControversy 2
esgPerformance LEAD_PERF
coal            False
pesticides      False
adult           False
percentile     70.21
peerGroup       Pharmaceuticals
smallArms       False
environmentScore 3.43
governancePercentile 0
militaryContract False]
symbol: VLO
sector: Energy
Index: SP500
vol_30d_2yr: 90552079.1015625
Sector 1YMF: 9.160011291503906
1YMF: 9.160011291503906
risk trend factor: 0.1828345622851758
          beta currentRatio debtToEquity dividendRate dividendYield \
VLO  1.762704      1.178      64.483      3.92      0.0349

          ebitda ebitdaMargins forwardPE freeCashflow grossMargins \
VLO  6672999936      0.05306    9.871818    4647625216      0.05998

          grossProfits heldPercentInstitutions industry \
VLO  5487000000      0.80514      Oil & Gas Refining & Marketing

          marketCap operatingCashflow operatingMargins payoutRatio pegRatio \
VLO  45886316544      6498999808      0.0341      0.6312      0.36

          priceToBook priceToSalesTrailing12Months profitMargins quickRatio \
VLO  2.438094      0.364858      0.02019      0.7

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

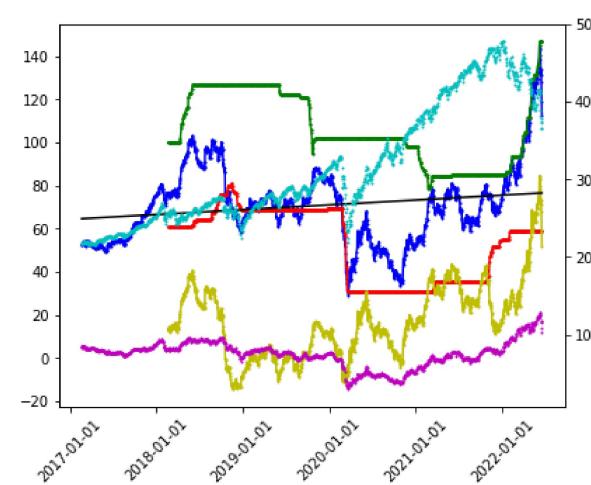
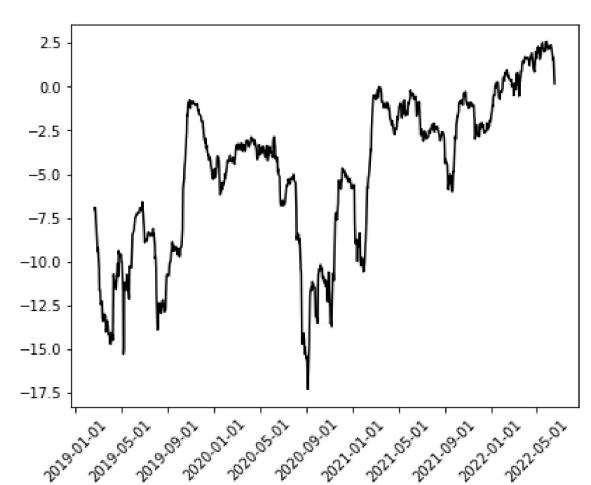
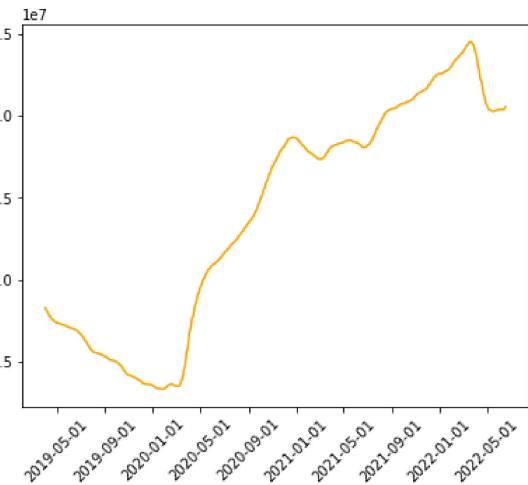
          sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
VLO      408096000      1.46      2638000128      6.464      13160999936

          totalRevenue trailingPE
VLO  125765001216      18.10045

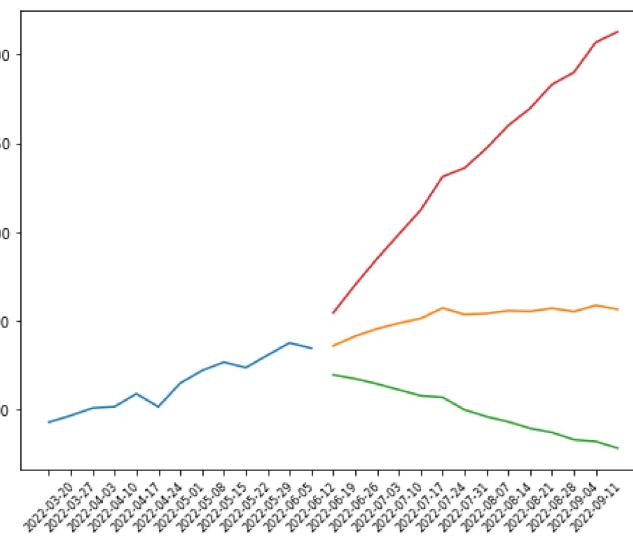
          Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper

```

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
VLO	1.3872	112.440002	90552079.101562	0.691389	0.569718	0.530999
l axis			r axis			
blue	symbol	magenta	sector	cyan	index	
green	trailing_1yr_max					
red	trailing_1yr_min					
orange	30d_vol_2yr					
black	risk_trend_factor/linear					
yellow	supply_trend_1yr					
Sector 1YMF: -3.82000732421875						
Sector Volume Factor: 0.8966412344901694						
Sector Risk Trend Factor: -0.12330558135216596						
Index 1YMF: -287.8400573730469						
Index Volume Factor: 1.1835166983613057						
Index Risk Trend Factor: -2.791820877422900						



```
ets next 13 weeks
inner cv scores:
best model: ['add', 'add', True]
best inner cv score, sdev (11 folds): 298.2478164675302 228.5074417183918
test cv mean error, stdev (10 folds): 310.914548290311 235.94980353237582
sell date: 2022-09-11
expected return: 0.41176994172704795
discounted return: 0.004065231256000779
quarter return: 1.45243742615299
```



```

['options', ('2023-01-20', '2024-01-19')]
['sustainability', Value
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: APA
sector: Energy
Index: SP500
vol_30d_2yr: 204531248.4375
Sector 1YMF: 2.8700027465820312
1YMF: 2.8700027465820312
risk trend factor: 0.1813014791288129
    beta currentRatio dividendRate dividendYield earningsGrowth \
APA 4.42549      1.124      0.5      0.0122      38.999

    ebitda ebitdaMargins freeCashflow grossMargins grossProfits \
APA 4470000128      0.55701    2259500032      0.63302    5080000000

    heldPercentInstitutions industry operatingCashflow operatingMargins \
APA      0.92629 Oil & Gas E&P      3496000000      0.3696

    payoutRatio pegRatio profitMargins quickRatio returnOnAssets \
APA      0.0339      0.16      0.12125      0.801      0.14233

    returnOnEquity revenueGrowth revenuePerShare sector shortRatio \
APA      27.07216      0.905      21.457 Energy      1.45

    totalCash totalCashPerShare totalDebt totalRevenue
APA 302000000      0.871    7760999936    8024999936

```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSD	90d_lower	90d_upper
<b>2022-06-17</b>	39.220001	39.703868	46.051746	52.399625	42.946032	3.294685	36.356662	49.535402

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
<b>APA</b>	0.999608	39.220001	204531248.4375	0.713933	0.302651	0.445144

l axis r axis

	legend	legend
--	--------	--------

<b>blue</b>	symbol	<b>magenta</b>	sector
-------------	--------	----------------	--------

<b>green</b>	trailing_1yr_max	<b>cyan</b>	index
--------------	------------------	-------------	-------

<b>red</b>	trailing_1yr_min		
------------	------------------	--	--

<b>orange</b>	30d_vol_2yr		
---------------	-------------	--	--

<b>black</b>	risk_trend_factor/linear		
--------------	--------------------------	--	--

<b>yellow</b>	supply_trend_1yr		
---------------	------------------	--	--

Sector 1YMF: -3.82000732421875

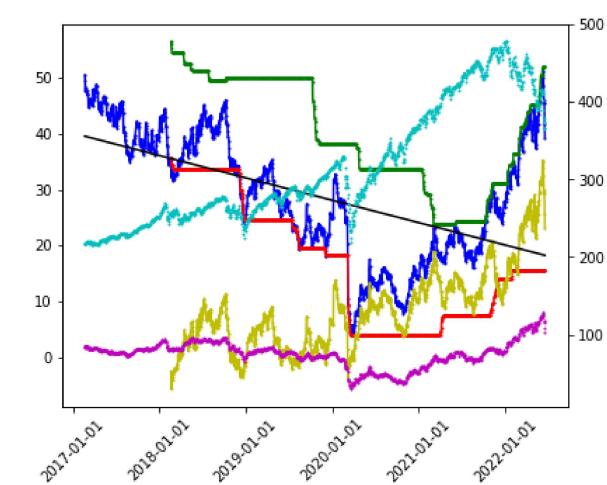
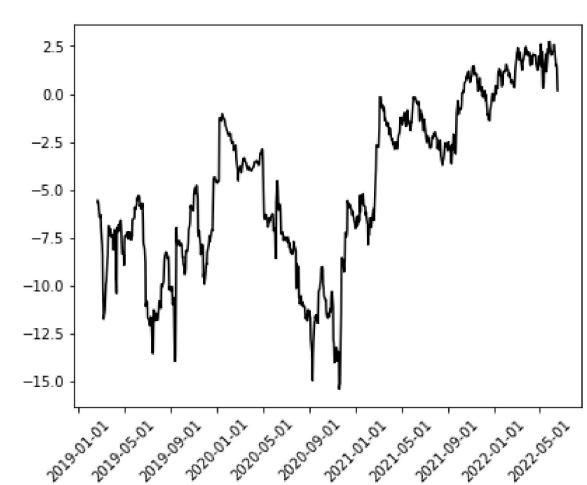
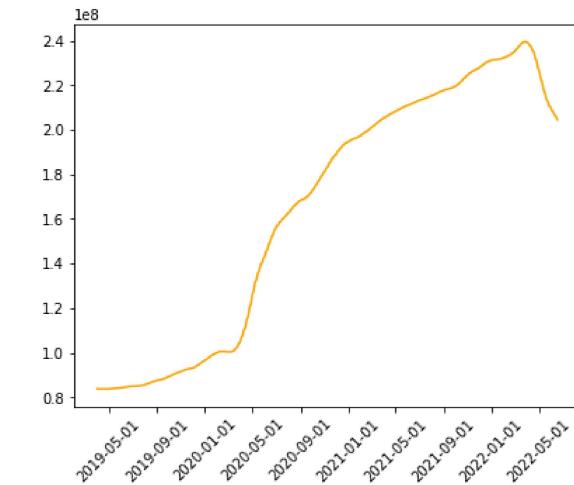
Sector Volume Factor: 0.8966412344901694

Sector Risk Trend Factor: -0.12330558135216596

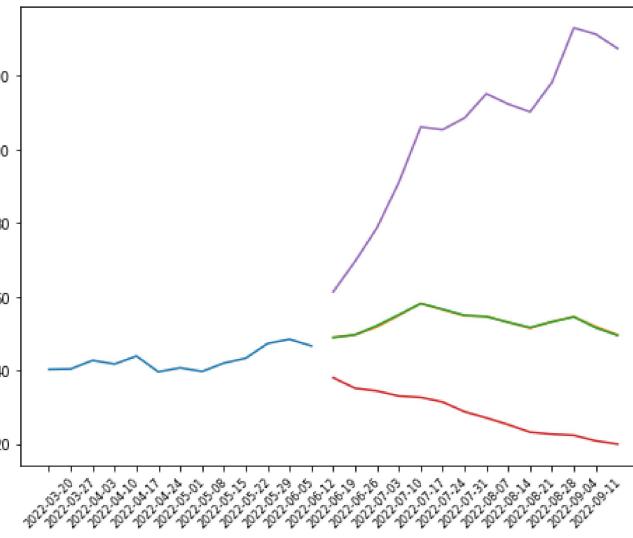
Index 1YMF: -287.8400573730469

Index Volume Factor: 1.1835166983613057

Index Risk Trend Factor: -3.791860877423899



```
ets next 13 weeks
inner cv scores:
best model: ['mul', 'add', False]
best inner cv score, sdev (11 folds): 46.85249904087894 42.24639199225648
test cv mean error, stdev (10 folds): 51.13208195708758 41.97344746396891
sell date: 2022-07-17
expected return: 0.48386219496704636
discounted return: 0.013701579315026358
quarter return: 3.4972874249785675
```



	2021-12-31	2021-09-30	2021-06-30	\
['quarterly_balance_sheet',				
Capital Surplus	1.164500e+10	1.168600e+10	1.170400e+10	
Total Liab	1.330800e+10	1.270500e+10	1.281900e+10	
Total Stockholder Equity	-1.595000e+09	-1.095000e+09	-9.640000e+08	
Minority Interest	1.590000e+09	1.580000e+09	1.657000e+09	
Deferred Long Term Liab	5.700000e+08	5.150000e+08	5.120000e+08	
Other Current Liab	3.370000e+08	2.760000e+08	2.990000e+08	
Total Assets	1.338300e+10	1.331000e+10	1.351200e+10	
Common Stock	2.620000e+08	2.620000e+08	2.620000e+08	
Other Current Assets	1.550000e+08	1.020000e+08	7.600000e+07	
Retained Earnings	-9.488000e+09	-9.870000e+09	-9.757000e+09	
Other Liab	3.744000e+09	3.673000e+09	2.626000e+09	
Treasury Stock	-4.014000e+09	-3.173000e+09	-3.173000e+09	
Other Assets	1.223000e+09	1.255000e+09	5.120000e+08	
Cash	3.020000e+08	3.770000e+08	1.249000e+09	
Total Current Liabilities	2.117000e+09	1.839000e+09	1.773000e+09	
Deferred Long Term Asset Charges	1.300000e+07	NaN	NaN	
Other Stockholder Equity	2.200000e+07	1.500000e+07	1.500000e+07	
Property Plant Equipment	8.335000e+09	8.336000e+09	8.501000e+09	
Total Current Assets	2.380000e+09	2.181000e+09	2.945000e+09	
Long Term Investments	1.365000e+09	1.538000e+09	1.554000e+09	
Net Tangible Assets	-1.595000e+09	-1.095000e+09	-9.640000e+08	
Net Receivables	1.394000e+09	1.170000e+09	1.068000e+09	
Long Term Debt	7.261000e+09	7.159000e+09	8.386000e+09	
Inventory	4.730000e+08	4.760000e+08	4.790000e+08	
Accounts Payable	7.310000e+08	6.870000e+08	6.030000e+08	
Short Long Term Debt	NaN	2.130000e+08	2.130000e+08	

	2021-03-31			
Capital Surplus	1.172700e+10			
Total Liab	1.278300e+10			
Total Stockholder Equity	-1.258000e+09			
Minority Interest	1.602000e+09			
Deferred Long Term Liab	4.930000e+08			
Other Current Liab	2.000000e+08			
Total Assets	1.312700e+10			
Common Stock	2.620000e+08			
Other Current Assets	1.450000e+08			
Retained Earnings	-1.007300e+10			
Other Liab	2.732000e+09			
Treasury Stock	-3.174000e+09			
Other Assets	4.970000e+08			
Cash	5.380000e+08			
Total Current Liabilities	1.338000e+09			
Deferred Long Term Asset Charges	NaN			
Other Stockholder Equity	1.500000e+07			
Property Plant Equipment	8.718000e+09			
Total Current Assets	2.345000e+09			
Long Term Investments	1.567000e+09			
Net Tangible Assets	-1.258000e+09			
Net Receivables	1.071000e+09			
Long Term Debt	8.678000e+09			
Inventory	5.020000e+08			
Accounts Payable	5.240000e+08			
Short Long Term Debt	NaN	]		

	2021-12-31	2021-09-30	\
['quarterly_cashflow',			
Investments	-1.000000e+06	-3.000000e+06	
Change To Liabilities	2.600000e+07	6.200000e+07	
Total Cashflows From Investing Activities	-2.910000e+08	-1.490000e+08	
Net Borrowings	1.020000e+08	-1.335000e+09	
Total Cash From Financing Activities	-8.690000e+08	-1.494000e+09	
Change To Operating Activities	1.800000e+08	-1.800000e+07	
Net Income	3.820000e+08	-1.130000e+08	
Change In Cash	-7.500000e+07	-8.720000e+08	
Repurchase Of Stock	-8.470000e+08	-8.470000e+08	
Total Cash From Operating Activities	1.085000e+09	7.710000e+08	
Depreciation	3.650000e+08	3.690000e+08	
Other Cashflows From Investing Activities	8.000000e+06	3.200000e+07	
Dividends Paid	-2.400000e+07	-9.000000e+06	
Change To Inventory	1.000000e+07	-3.900000e+07	
Change To Account Receivables	-1.210000e+08	-1.000000e+08	
Other Cashflows From Financing Activities	-1.000000e+08	-1.500000e+08	
Change To Netincome	2.430000e+08	6.100000e+08	
Capital Expenditures	-3.150000e+08	-2.360000e+08	

	2021-06-30	2021-03-31	
Investments	-3000000.0	-2100000.0	
Change To Liabilities	8200000.0	7500000.0	
Total Cashflows From Investing Activities	-12600000.0	-26700000.0	
Net Borrowings	-7900000.0	-5800000.0	
Total Cash From Financing Activities	-13200000.0	-12800000.0	
Change To Operating Activities	18400000.0	-7900000.0	
Net Income	31600000.0	38800000.0	
Change In Cash	71100000.0	27600000.0	
Repurchase Of Stock	-84700000.0	-84700000.0	
Total Cash From Operating Activities	96900000.0	67100000.0	
Depreciation	38200000.0	38800000.0	
Other Cashflows From Investing Activities	5000000.0	7000000.0	
Dividends Paid	-10000000.0	-9000000.0	
Change To Inventory	23000000.0	-3000000.0	
Change To Account Receivables	3000000.0	-16800000.0	
Other Cashflows From Financing Activities	-43000000.0	-6100000.0	

```

Change To Netincome 59000000.0 70000000.0
Capital Expenditures -30600000.0 -25600000.0 ]
['quarterly_earnings', Revenue Earnings
Quarter
1Q2021 1932000000 388000000
2Q2021 1830000000 316000000
3Q2021 2099000000 -113000000
4Q2021 2164000000 382000000]
['quarterly_financials',
Research Development None None
Effect Of Accounting Charges None None
Income Before Tax 654000000.0 122000000.0
Minority Interest 1590000000.0 1580000000.0
Net Income 382000000.0 -113000000.0
Selling General Administrative 137000000.0 70000000.0
Gross Profit 1467000000.0 1301000000.0
Ebit 937000000.0 774000000.0
Operating Income 937000000.0 774000000.0
Other Operating Expenses 15000000.0 88000000.0
Interest Expense -94000000.0 -101000000.0
Extraordinary Items None None
Non Recurring None None
Other Items None None
Income Tax Expense 169000000.0 152000000.0
Total Revenue 2164000000.0 2099000000.0
Total Operating Expenses 1227000000.0 1325000000.0
Cost Of Revenue 697000000.0 798000000.0
Total Other Income Expense Net -283000000.0 -652000000.0
Discontinued Operations None None
Net Income From Continuing Ops 485000000.0 -30000000.0
Net Income Applicable To Common Shares 382000000.0 -113000000.0

2021-06-30 2021-03-31
Research Development None None
Effect Of Accounting Charges None None
Income Before Tax 495000000.0 620000000.0
Minority Interest 1657000000.0 1602000000.0
Net Income 316000000.0 388000000.0
Selling General Administrative 86000000.0 83000000.0
Gross Profit 1196000000.0 1116000000.0
Ebit 510000000.0 745000000.0
Operating Income 510000000.0 745000000.0
Other Operating Expenses 223000000.0 -103000000.0
Interest Expense -111000000.0 -112000000.0
Extraordinary Items None None
Non Recurring None None
Other Items None None
Income Tax Expense 87000000.0 170000000.0
Total Revenue 1830000000.0 1932000000.0
Total Operating Expenses 1320000000.0 1187000000.0
Cost Of Revenue 634000000.0 816000000.0
Total Other Income Expense Net -15000000.0 -125000000.0
Discontinued Operations None None
Net Income From Continuing Ops 408000000.0 450000000.0
Net Income Applicable To Common Shares 316000000.0 388000000.0 ]
['mutualfund_holders',
Holder Shares Date Reported % Out \
0 Oakmark Fund 12743809 2021-12-30 0.0377
1 Select Sector SPDR Fund-Energy Select 10683025 2022-01-30 0.0316
2 Vanguard Total Stock Market Index Fund 10325855 2021-12-30 0.0305
3 Vanguard Small-Cap Index Fund 9149341 2021-12-30 0.0271
4 Vanguard/Windsor II 8002477 2022-01-30 0.0237
5 Vanguard 500 Index Fund 7693595 2021-12-30 0.0227
6 Vanguard Small Cap Value Index Fund 5800585 2021-12-30 0.0171
7 Oakmark Select Fund 5500000 2021-12-30 0.0163
8 SPDR S&P 500 ETF Trust 4043068 2022-01-30 0.0120
9 Fidelity 500 Index Fund 3720217 2022-02-27 0.0110

Value
0 342681024
1 354783260
2 277662240
3 246025779
4 265762261
5 206880769
6 155977730
7 147895000
8 134270288
9 132551331 ]
['options', ('2022-07-15', '2023-01-20', '2024-01-19')]
symbol: PPC
sector: Consumer Defensive
Index: SP400
vol_30d_2yr: 17241312.5
Sector 1YMF: 1.4799995422363281
1YMF: 1.4799995422363281
risk trend factor: 0.1778845668897103
beta currentRatio debtToEquity earningsGrowth ebitda \
PPC 1.12745 1.532 134.448 1.805 1548861056
ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
PPC 0.09838 11.328186 873572608 0.10458 1365827000

```

```

heldPercentInstitutions      industry   marketCap operatingCashflow \
PPC          0.19334    Packaged Foods 7149453824       697006016

operatingMargins payoutRatio pegRatio priceToBook \
PPC        0.0732         0     0.59    2.745392

priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
PPC        0.454094     0.01342     0.724     0.08575

returnOnEquity revenueGrowth revenuePerShare           sector \
PPC        0.07645       0.295      64.613 Consumer Defensive

sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
PPC        243676000      2.43    725539968      3.019 3755959040

totalRevenue
PPC 15744428032

```

**Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSD 90d\_lower 90d\_upper**

**2022-06-17** 29.34 28.165931 31.419048 34.672164 28.426667 2.86898 22.688707 34.164626

**volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst**

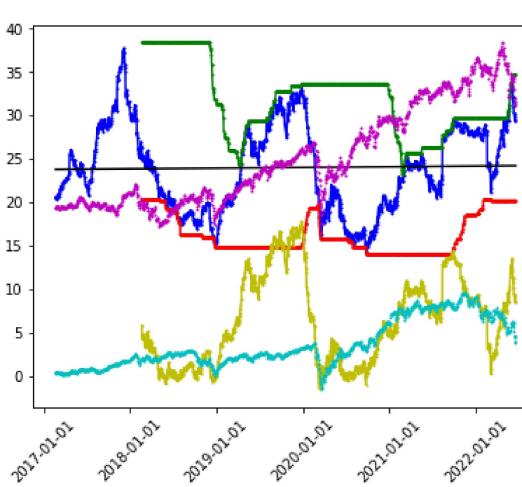
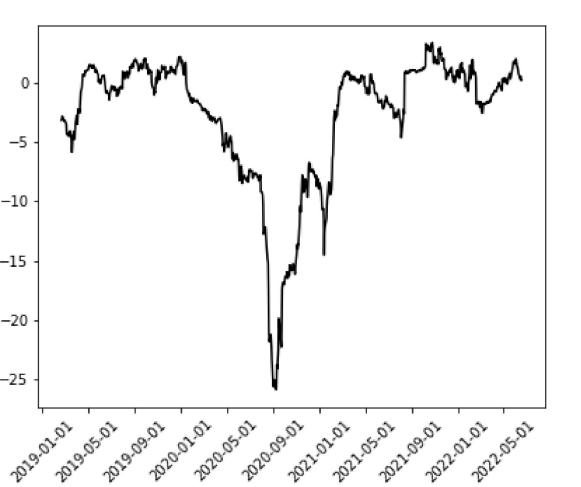
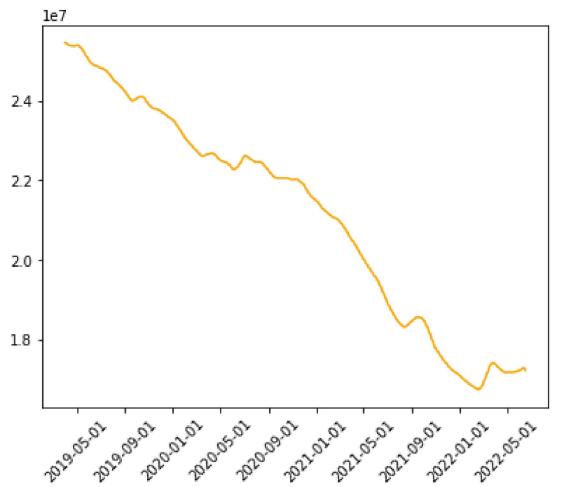
**PPC** 1.275425 29.34 17241312.5 0.741748 0.282386 0.556574

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: -74.80001831054688  
Sector Volume Factor: 1.4135920452708397  
Sector Risk Trend Factor: -2.283970024749523  
Index 1YMF: -69.05999755859375  
Index Volume Factor: 0.5765983741853883  
Index Risk Trend Factor: -5.134573474205833



ets next 13 weeks

inner cv scores:

best model: [None, None]

best inner cv score, sdev (11 folds): 26.619523348246442 34.681389958125926

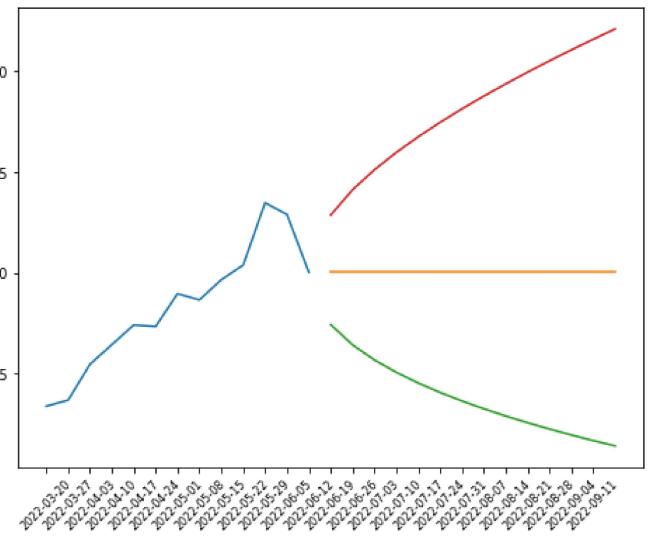
test cv mean error, stdev (10 folds): 27.98315577087452 36.09188638940738

sell date: 2022-06-19

expected return: 0.023072247777613367

discounted return: 0.023072247777613297

quarter return: 8.154173875454022



	2022-03-27	2021-12-26	2021-09-26	\
['quarterly_balance_sheet',				
Intangible Assets	9.385640e+08	9.632430e+08	1.028664e+09	
Capital Surplus	1.966066e+09	1.964028e+09	1.962750e+09	
Total Liab	6.524261e+09	6.324271e+09	6.216460e+09	
Total Stockholder Equity	2.781630e+09	2.577080e+09	2.604243e+09	
Minority Interest	1.197600e+07	1.185400e+07	1.214000e+07	
Other Current Liab	3.009220e+08	3.085060e+08	4.109530e+08	
Total Assets	9.317867e+09	8.913205e+09	8.832843e+09	
Common Stock	2.616000e+06	2.614000e+06	2.614000e+06	
Other Current Assets	6.858900e+07	4.054500e+07	6.656900e+07	
Retained Earnings	1.284007e+09	1.003569e+09	9.668150e+08	
Other Liab	4.077630e+08	4.709210e+08	5.265940e+08	
Good Will	1.320100e+09	1.337252e+09	1.381872e+09	
Treasury Stock	-4.710590e+08	-3.931310e+08	-3.279360e+08	
Other Assets	3.726000e+07	3.772400e+07	3.165500e+07	
Cash	7.255400e+08	4.276610e+08	5.110840e+08	
Total Current Liabilities	2.475775e+09	2.390823e+09	2.270929e+09	
Deferred Long Term Asset Charges	5.191000e+06	5.314000e+06	5.465000e+06	
Short Long Term Debt	3.616200e+07	2.541400e+07	2.023000e+07	
Other Stockholder Equity	-9.890200e+07	-4.799700e+07	1.719800e+07	
Property Plant Equipment	3.229118e+09	3.269032e+09	3.148945e+09	
Total Current Assets	3.792825e+09	3.305954e+09	3.241707e+09	
Net Tangible Assets	5.229660e+08	2.765850e+08	1.937070e+08	
Net Receivables	1.086588e+09	1.042610e+09	9.425350e+08	
Long Term Debt	3.373573e+09	3.187543e+09	3.191270e+09	
Inventory	1.708995e+09	1.575658e+09	1.556821e+09	
Accounts Payable	1.448846e+09	1.400394e+09	1.183460e+09	

	2021-06-27			
Intangible Assets	5.895360e+08			
Capital Surplus	1.959558e+09			
Total Liab	5.154333e+09			
Total Stockholder Equity	2.582482e+09			
Minority Interest	1.203000e+07			
Other Current Liab	5.448970e+08			
Total Assets	7.748845e+09			
Common Stock	2.614000e+06			
Other Current Assets	1.300070e+08			
Retained Earnings	9.068900e+08			
Other Liab	4.179760e+08			
Good Will	1.024900e+09			
Treasury Stock	-2.857800e+08			
Other Assets	3.233100e+07			
Cash	3.918050e+08			
Total Current Liabilities	2.244714e+09			
Deferred Long Term Asset Charges	5.494000e+06			
Short Long Term Debt	2.593100e+07			
Other Stockholder Equity	5.935400e+07			
Property Plant Equipment	2.972778e+09			
Total Current Assets	3.129300e+09			
Net Tangible Assets	9.680460e+08			
Net Receivables	9.186950e+08			
Long Term Debt	2.268842e+09			
Inventory	1.530014e+09			
Accounts Payable	1.100759e+09	]		

	2022-03-27	2021-12-26	\
['quarterly_cashflow',			
Change To Liabilities	-2454000.0	84657000.0	
Total Cashflows From Investing Activities	-85576000.0	-111842000.0	
Net Borrowings	196412000.0	-235000.0	
Total Cash From Financing Activities	166330000.0	-235000.0	
Change To Operating Activities	-8946000.0	-75981000.0	
Net Income	280438000.0	36754000.0	
Change In Cash	305677000.0	-115074000.0	
Repurchase Of Stock	-28984000.0	-28984000.0	
Effect Of Exchange Rate	-2073000.0	-1961000.0	
Total Cash From Operating Activities	226996000.0	-1036000.0	
Depreciation	102142000.0	106488000.0	
Change To Inventory	-146035000.0	-28211000.0	
Change To Account Receivables	-66669000.0	-120429000.0	
Other Cashflows From Financing Activities	-1098000.0	-1098000.0	
Change To Netincome	-17969000.0	-54879000.0	
Capital Expenditures	-81578000.0	-100851000.0	

	2021-09-26	2021-06-27	
Change To Liabilities	8.445000e+06	506670000.0	
Total Cashflows From Investing Activities	-1.049512e+09	-73266000.0	
Net Borrowings	9.280300e+08	-97181000.0	
Total Cash From Financing Activities	9.143870e+08	-105831000.0	
Change To Operating Activities	1.507300e+07	-25391000.0	
Net Income	6.072500e+07	-166687000.0	
Change In Cash	7.517800e+07	79777000.0	
Repurchase Of Stock	-2.898400e+07	-28984000.0	
Effect Of Exchange Rate	-2.240000e+06	371000.0	
Total Cash From Operating Activities	2.125430e+08	258503000.0	
Depreciation	9.207600e+07	95728000.0	
Change To Inventory	2.429400e+07	-91397000.0	
Change To Account Receivables	-2.133800e+07	-62718000.0	
Other Cashflows From Financing Activities	-1.364300e+07	-8650000.0	
Change To Netincome	1.158100e+07	-20393000.0	
Capital Expenditures	-9.707600e+07	-81577000.0	]
['quarterly_earnings',	Revenue	Earnings	
Quarter			

2Q2021 3637698000 -166687000  
3Q2021 3827566000 60725000  
4Q2021 4038769000 36754000  
1Q2022 4240395000 280438000]

[ 'quarterly\_financials', 2022-03-27 2021-12-26 \ ]

	None	None
Research Development	None	None
Effect Of Accounting Charges	None	None
Income Before Tax	355779000.0	41659000.0
Minority Interest	11976000.0	11854000.0
Net Income	280438000.0	36754000.0
Selling General Administrative	120323000.0	35329000.0
Gross Profit	541980000.0	352500000.0
Ebit	421657000.0	317171000.0
Operating Income	421657000.0	317171000.0
Other Operating Expenses	None	None
Interest Expense	-36296000.0	-34974000.0
Extraordinary Items	None	None
Non Recurring	None	None
Other Items	None	None
Income Tax Expense	75219000.0	5191000.0
Total Revenue	4240395000.0	4038769000.0
Total Operating Expenses	3818738000.0	3721598000.0
Cost Of Revenue	3698415000.0	3686269000.0
Total Other Income Expense Net	-65878000.0	-275512000.0
Discontinued Operations	None	None
Net Income From Continuing Ops	280560000.0	36468000.0
Net Income Applicable To Common Shares	280438000.0	36754000.0

	2021-09-26	2021-06-27
Research Development	None	None
Effect Of Accounting Charges	None	None
Income Before Tax	91220000.0	-176315000.0
Minority Interest	12140000.0	12030000.0
Net Income	60725000.0	-166687000.0
Selling General Administrative	250844000.0	102959000.0
Gross Profit	371843000.0	380241000.0
Ebit	120999000.0	277282000.0
Operating Income	120999000.0	277282000.0
Other Operating Expenses	None	None
Interest Expense	-29833000.0	-50651000.0
Extraordinary Items	None	None
Non Recurring	None	None
Other Items	None	None
Income Tax Expense	30385000.0	-9812000.0
Total Revenue	3827566000.0	3637698000.0
Total Operating Expenses	3706567000.0	3360416000.0
Cost Of Revenue	3455723000.0	3257457000.0
Total Other Income Expense Net	-29779000.0	-453597000.0
Discontinued Operations	None	None
Net Income From Continuing Ops	60835000.0	-166603000.0
Net Income Applicable To Common Shares	60725000.0	-166687000.0

[ 'mutualfund\_holders', Holder Shares Date Reported \ ]

0	Vanguard Total Stock Market Index Fund	1391177	2021-12-30
1	iShares Core S&P Midcap ETF	1354194	2022-01-30
2	Vanguard Small-Cap Index Fund	1226527	2021-12-30
3	Vanguard Small Cap Value Index Fund	778076	2021-12-30
4	Vanguard Extended Market Index Fund	647608	2021-12-30
5	DFA U.S. Small Cap Value Series	494751	2022-01-30
6	First Tr Exchg Tr AlphaDEX Fd-FT Consumer Stap...	488488	2022-02-27
7	SPDR S&P Mid Cap 400 ETF Trust	418251	2022-01-30
8	iShares S&P Midcap 400 Value ETF	353867	2022-01-30
9	Vanguard Consumer Staples Index Fund	342523	2022-02-27

% Out	Value
0 0.0058	39231191
1 0.0056	37876806
2 0.0051	34588061
3 0.0032	21941743
4 0.0027	18262545
5 0.0021	13838185
6 0.0020	11518547
7 0.0017	11698480
8 0.0015	9897659
9 0.0014	8076692

[ 'options', ('2023-01-20',)]

symbol: MRO

sector: Energy

Index: SP500

vol\_30d\_2yr: 490057840.234375

Sector 1YMF: 1.5699996948242188

1YMF: 1.5699996948242188

risk trend factor: 0.15110678525882204

beta currentRatio debtToEquity dividendRate dividendYield \

MRO 2.766666 1.112 38.48 0.32 0.0119

ebitda ebitdaMargins forwardPE freeCashflow grossMargins \

MRO 3308999936 0.58921 12.321428 1785500032 0.77546

grossProfits heldPercentInstitutions industry marketCap \

MRO 435500000 0.802 Oil & Gas E&P 18801668096

operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \

```

MRO      3239000064      0.20495      0.0769      0.59      1.764964
MRO      priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
MRO          3.347875      0.16845      1.052      0.04117

MRO      returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \
MRO      0.08905      1.091      7.136 Energy      778537024

MRO      shortRatio totalCash totalCashPerShare totalDebt totalRevenue
MRO      0.93 58000000      0.794 4112000000 5616000000

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper
2022-06-17    24.15 25.128986 29.471905 33.814823 26.957624 2.372893 22.211838 31.70341

```

volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst

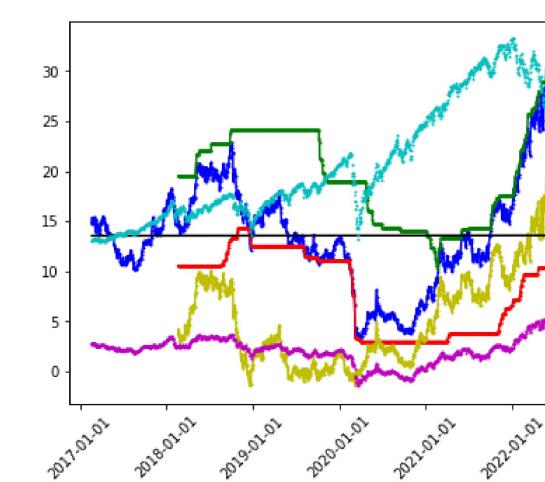
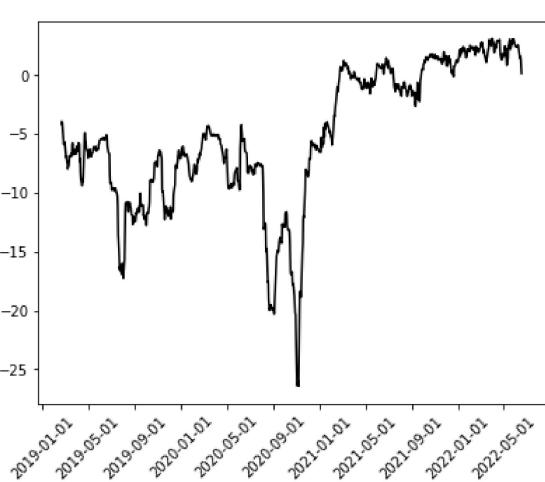
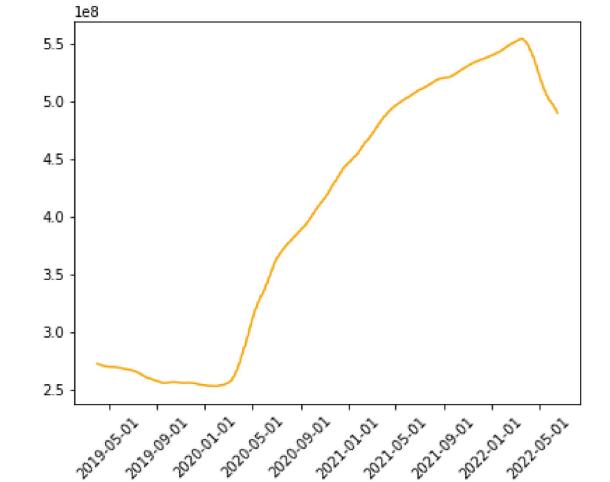
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MRO      1.000459    24.15 490057840.234375 0.691969 0.80545 0.53536
```

l axis r axis

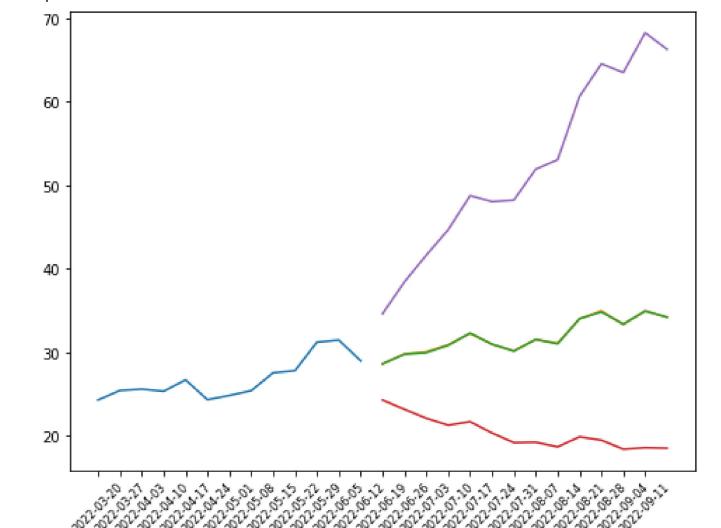
legend legend

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: -3.82000732421875  
Sector Volume Factor: 0.8966412344901694  
Sector Risk Trend Factor: -0.12330558135216596  
Index 1YMF: -287.8400573730469  
Index Volume Factor: 1.1835166983613057  
Index Risk Trend Factor: -3.791860877423899



ets next 13 weeks  
inner cv scores:  
best model: ['mul', 'add', False]  
best inner cv score, sdev (11 folds): 11.757844428500801 12.66763142304684  
test cv mean error, stdev (10 folds): 12.772815440925163 12.852390759891717  
sell date: 2022-08-28  
expected return: 0.4491975912453612  
discounted return: 0.005239169911774422  
quarter return: 1.6172794332125293



	2021-12-31	2021-09-30	2021-06-30	\
['quarterly_balance_sheet',				
Capital Surplus	7.221000e+09	7.213000e+09	7.201000e+09	
Total Liab	6.308000e+09	6.365000e+09	7.166000e+09	
Total Stockholder Equity	1.068600e+10	1.079600e+10	1.063400e+10	
Other Current Liab	3.680000e+08	4.960000e+08	5.020000e+08	
Total Assets	1.699400e+10	1.716100e+10	1.780000e+10	
Common Stock	9.370000e+08	9.370000e+08	9.370000e+08	
Other Current Assets	2.200000e+07	2.500000e+07	1.900000e+07	
Retained Earnings	7.271000e+09	6.669000e+09	6.524000e+09	
Other Liab	6.440000e+08	6.420000e+08	6.650000e+08	
Treasury Stock	-4.743000e+09	-4.023000e+09	-4.028000e+09	
Other Assets	1.100000e+08	1.040000e+08	9.300000e+07	
Cash	5.800000e+08	4.850000e+08	9.700000e+08	
Total Current Liabilities	1.637000e+09	1.676000e+09	1.575000e+09	
Short Long Term Debt	3.900000e+07	3.900000e+07	3.500000e+07	
Other Stockholder Equity	8.200000e+07	8.200000e+07	7.700000e+07	
Property Plant Equipment	1.458600e+10	1.484300e+10	1.511100e+10	
Total Current Assets	1.821000e+09	1.655000e+09	2.075000e+09	
Long Term Investments	4.770000e+08	5.590000e+08	5.210000e+08	
Net Tangible Assets	1.068600e+10	1.079600e+10	1.063400e+10	
Net Receivables	1.142000e+09	1.068000e+09	1.008000e+09	
Long Term Debt	3.980000e+09	3.983000e+09	4.882000e+09	
Inventory	7.700000e+07	7.700000e+07	7.800000e+07	
Accounts Payable	1.110000e+09	1.028000e+09	9.370000e+08	

2021-03-31

Capital Surplus	7.195000e+09
Total Liab	7.562000e+09
Total Stockholder Equity	1.067100e+10
Other Current Liab	3.810000e+08
Total Assets	1.823300e+10
Common Stock	9.370000e+08
Other Current Assets	2.600000e+07
Retained Earnings	6.540000e+09
Other Liab	6.950000e+08
Treasury Stock	-4.001000e+09
Other Assets	9.600000e+07
Cash	1.125000e+09
Total Current Liabilities	1.899000e+09
Short Long Term Debt	5.010000e+08
Other Stockholder Equity	1.120000e+08
Property Plant Equipment	1.542500e+10
Total Current Assets	2.150000e+09
Long Term Investments	5.620000e+08
Net Tangible Assets	1.067100e+10
Net Receivables	9.210000e+08
Long Term Debt	4.910000e+09
Inventory	7.800000e+07
Accounts Payable	9.180000e+08

]

2021-12-31 2021-09-30 \

['quarterly_cashflow',			
Investments	4.600000e+07	9.000000e+06	
Change To Liabilities	1.410000e+08	1.070000e+08	
Total Cashflows From Investing Activities	-2.820000e+08	-2.650000e+08	
Total Cash From Financing Activities	-7.690000e+08	-1.036000e+09	
Change To Operating Activities	-2.000000e+07	-7.000000e+06	
Net Income	6.490000e+08	1.840000e+08	
Change In Cash	9.500000e+07	-4.850000e+08	
Repurchase Of Stock	-7.240000e+08	-1.000000e+06	
Total Cash From Operating Activities	1.146000e+09	8.160000e+08	
Depreciation	4.630000e+08	5.830000e+08	
Dividends Paid	-4.700000e+07	-3.900000e+07	
Change To Account Receivables	-7.600000e+07	-6.000000e+07	
Other Cashflows From Financing Activities	2.000000e+06	-9.600000e+07	
Change To Netincome	-1.100000e+07	8.000000e+06	
Capital Expenditures	-2.740000e+08	-2.890000e+08	
Net Borrowings	NaN	-9.000000e+08	
Other Cashflows From Investing Activities	NaN	1.000000e+06	
Change To Inventory	NaN	1.000000e+06	

2021-06-30 2021-03-31

Investments	6000000.0	6000000.0
Change To Liabilities	20000000.0	101000000.0
Total Cashflows From Investing Activities	-256000000.0	-207000000.0
Total Cash From Financing Activities	-554000000.0	-32000000.0
Change To Operating Activities	12000000.0	61000000.0
Net Income	16000000.0	97000000.0
Change In Cash	-155000000.0	383000000.0
Repurchase Of Stock	-1000000.0	-9000000.0
Total Cash From Operating Activities	655000000.0	622000000.0
Depreciation	600000000.0	512000000.0
Dividends Paid	-32000000.0	-23000000.0
Change To Account Receivables	-78000000.0	-175000000.0
Other Cashflows From Financing Activities	-22000000.0	-22000000.0
Change To Netincome	85000000.0	28000000.0
Capital Expenditures	-274000000.0	-209000000.0
Net Borrowings	-500000000.0	-500000000.0
Other Cashflows From Investing Activities	1000000.0	-1000000.0
Change To Inventory	1000000.0	-2000000.0

]

['quarterly\_earnings',

Revenue Earnings

Quarter

1Q2021 118000000 97000000

2Q2021 125900000 16000000

	2021-12-31	2021-09-30	\	
['quarterly_financials',				
Research Development	None	None		
Effect Of Accounting Charges	None	None		
Income Before Tax	683000000.0	188000000.0		
Minority Interest	None	None		
Net Income	649000000.0	184000000.0		
Selling General Administrative	6100000.0	7000000.0		
Gross Profit	1393000000.0	1089000000.0		
Ebit	75500000.0	25400000.0		
Operating Income	75500000.0	25400000.0		
Other Operating Expenses	94000000.0	167000000.0		
Interest Expense	-7400000.0	-5700000.0		
Extraordinary Items	None	None		
Non Recurring	None	None		
Other Items	None	None		
Income Tax Expense	34000000.0	4000000.0		
Total Revenue	1738000000.0	1439000000.0		
Total Operating Expenses	983000000.0	1185000000.0		
Cost Of Revenue	345000000.0	350000000.0		
Total Other Income Expense Net	-72000000.0	-66000000.0		
Discontinued Operations	None	None		
Net Income From Continuing Ops	649000000.0	184000000.0		
Net Income Applicable To Common Shares	649000000.0	184000000.0		
	2021-06-30	2021-03-31		
Research Development	None	None		
Effect Of Accounting Charges	None	None		
Income Before Tax	26000000.0	107000000.0		
Minority Interest	None	None		
Net Income	16000000.0	97000000.0		
Selling General Administrative	69000000.0	75000000.0		
Gross Profit	966000000.0	907000000.0		
Ebit	54000000.0	87000000.0		
Operating Income	54000000.0	87000000.0		
Other Operating Expenses	240000000.0	227000000.0		
Interest Expense	-59000000.0	-13000000.0		
Extraordinary Items	None	None		
Non Recurring	None	None		
Other Items	None	None		
Income Tax Expense	10000000.0	10000000.0		
Total Revenue	1259000000.0	1180000000.0		
Total Operating Expenses	1205000000.0	1093000000.0		
Cost Of Revenue	293000000.0	273000000.0		
Total Other Income Expense Net	-28000000.0	20000000.0		
Discontinued Operations	None	None		
Net Income From Continuing Ops	16000000.0	97000000.0		
Net Income Applicable To Common Shares	16000000.0	97000000.0	]	
	Holder	Shares Date Reported	% Out	\
0 Vanguard/Windsor II	26018487	2022-01-30	0.0368	
1 Select Sector SPDR Fund-Energy Select	22895120	2022-01-30	0.0324	
2 Vanguard Total Stock Market Index Fund	22131478	2021-12-30	0.0313	
3 Vanguard Small-Cap Index Fund	19611815	2021-12-30	0.0277	
4 Vanguard 500 Index Fund	16486851	2021-12-30	0.0233	
5 Vanguard Small Cap Value Index Fund	12430773	2021-12-30	0.0176	
6 Fidelity Low-Priced Stock Fund	12282677	2022-02-27	0.0174	
7 SPDR S&P 500 ETF Trust	8364080	2022-01-30	0.0118	
8 Fidelity 500 Index Fund	7972838	2022-02-27	0.0113	
9 Invesco Comstock Fd	7808667	2022-01-30	0.0110	

	Value
0	506579941
1	445767986
2	363398868
3	322026002
4	270714093
5	204113292
6	277097193
7	162848637
8	179867225
9	152034746

]

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

	Value
['sustainability',	
2022-5	
palmOil	False
controversialWeapons	False
gambling	False
socialScore	10.01
nuclear	False
furLeather	False
alcoholic	False
gmo	False
catholic	False
socialPercentile	0
peerCount	66
governanceScore	8.13
environmentPercentile	0
animalTesting	False
tobacco	False
totalEsg	42.05
highestControversy	2

```

esgPerformance      None
coal                False
pesticides          False
adult               False
percentile         90.8
peerGroup           Oil & Gas Producers
smallArms           False
environmentScore   23.91
governancePercentile 0
militaryContract  False]
symbol: DVN
sector: Energy
Index: SP500
vol_30d_2yr: 237878397.65625
Sector 1YMF: 3.9099979400634766
1YMF: 3.9099979400634766
risk trend factor: 0.14878225091792957
    beta currentRatio debtToEquity dividendRate dividendYield \
DVN 2.784803     1.376    71.922     5.08     0.0739

    ebitda ebitdaMargins forwardPE freeCashflow grossMargins \
DVN 5506999808     0.41984   11.09369   2805625088     0.56522

    grossProfits heldPercentInstitutions industry marketCap \
DVN 7414000000     0.86307   Oil & Gas E&P 39279542272

    operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
DVN 4898999808     0.25288   0.4991     0.43     4.401456

    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
DVN 2.994552       0.21445   1.207      0.13402

    returnOnEquity revenueGrowth revenuePerShare sector sharesOutstanding \
DVN 0.45627        2.003     19.784     Energy      677000000

    shortRatio totalCash totalCashPerShare totalDebt totalRevenue \
DVN 1.7 2099000064            3.16   6760000000 13116999680

    trailingPE
DVN 28.808342

```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDDev	90d_lower	90d_upper
<b>2022-06-17</b>	58.02	63.067854	72.56	82.052146	65.759365	6.444488	52.870389	78.648341

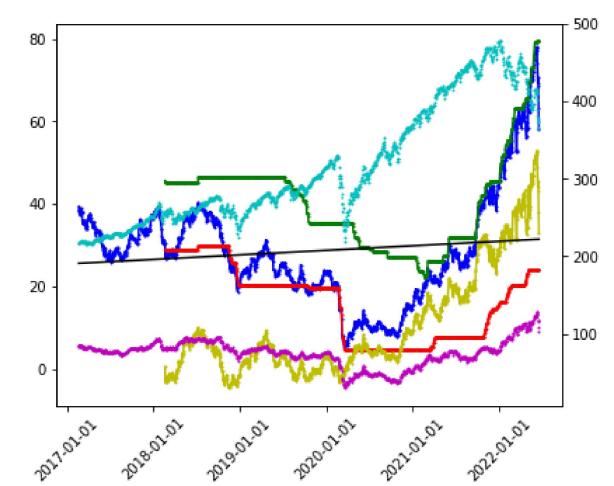
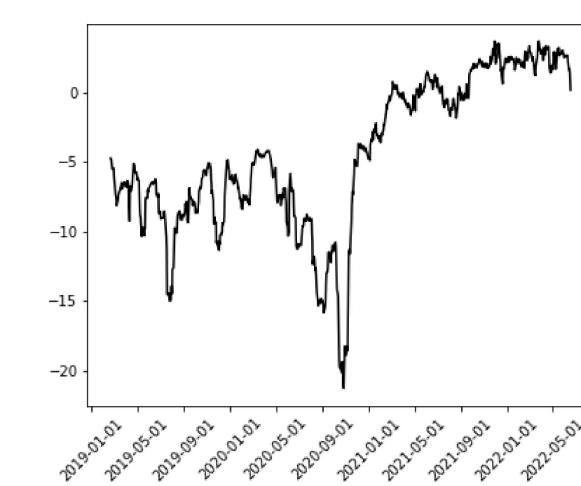
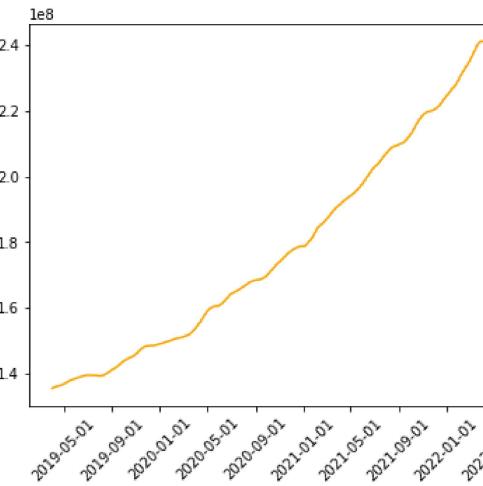
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
DVN	1.104104	58.02	237878397.65625	0.701688	0.885466	0.540317

l axis      r axis

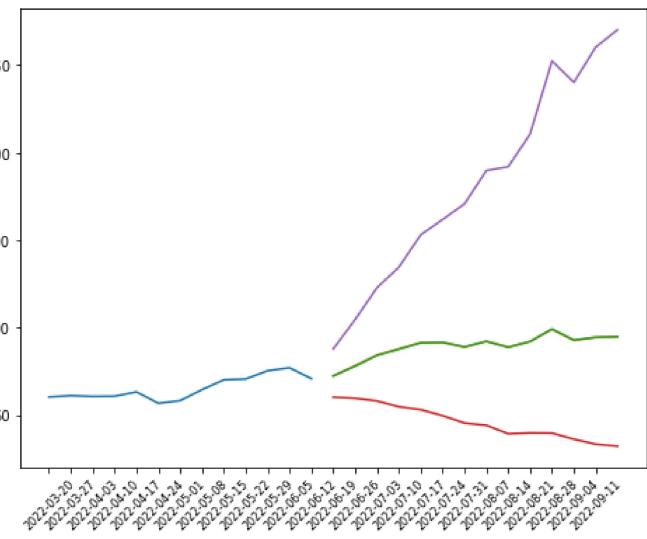
legend	legend
--------	--------

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: -3.82000732421875  
Sector Volume Factor: 0.8966412344901694  
Sector Risk Trend Factor: -0.12330558135216596  
Index 1YMF: -287.8400573730469  
Index Volume Factor: 1.1835166983613057  
Index Risk Trend Factor: -3.791860877423899



```
ets next 13 weeks
inner cv scores:
best model: ['mul', 'add', True]
best inner cv score, sdev (11 folds): 67.08034702664789 86.67251280894455
test cv mean error, stdev (10 folds): 73.27583765052054 88.55005243977149
sell date: 2022-08-28
expected return: 0.7068470390980355
discounted return: 0.0075586747938265475
quarter return: 1.9992719833261932
```



	2021-12-31	2021-09-30	2021-06-30	\
['quarterly_balance_sheet',				
Capital Surplus	7.636000e+09	8.206000e+09	8.189000e+09	
Total Liab	1.162600e+10	1.199600e+10	1.153000e+10	
Total Stockholder Equity	9.262000e+09	8.924000e+09	8.399000e+09	
Minority Interest	1.370000e+08	1.370000e+08	1.360000e+08	
Other Current Liab	2.545000e+09	2.940000e+09	2.554000e+09	
Total Assets	2.102500e+10	2.105700e+10	2.006500e+10	
Common Stock	6.600000e+07	6.800000e+07	6.800000e+07	
Other Current Assets	5.240000e+08	4.860000e+08	5.030000e+08	
Retained Earnings	1.692000e+09	7.500000e+08	2.430000e+08	
Other Liab	1.805000e+09	1.743000e+09	1.698000e+09	
Good Will	7.530000e+08	7.530000e+08	7.530000e+08	
Treasury Stock	-1.320000e+08	-1.000000e+08	-1.010000e+08	
Other Assets	3.780000e+08	3.670000e+08	3.970000e+08	
Cash	2.099000e+09	2.144000e+09	1.348000e+09	
Total Current Liabilities	3.087000e+09	3.505000e+09	3.072000e+09	
Deferred Long Term Asset Charges	7.000000e+06	NaN	NaN	
Other Stockholder Equity	-1.320000e+08	-1.000000e+08	-1.010000e+08	
Property Plant Equipment	1.524300e+10	1.532200e+10	1.544100e+10	
Total Current Assets	4.249000e+09	4.227000e+09	3.076000e+09	
Long Term Investments	4.020000e+08	3.880000e+08	3.980000e+08	
Net Tangible Assets	8.509000e+09	8.171000e+09	7.646000e+09	
Net Receivables	1.626000e+09	1.597000e+09	1.225000e+09	
Long Term Debt	6.482000e+09	6.492000e+09	6.502000e+09	
Accounts Payable	5.000000e+08	5.370000e+08	4.870000e+08	
Short Long Term Debt	NaN	NaN	NaN	

	2021-03-31			
Capital Surplus	8.172000e+09			
Total Liab	1.197100e+10			
Total Stockholder Equity	8.353000e+09			
Minority Interest	1.330000e+08			
Other Current Liab	2.124000e+09			
Total Assets	2.045700e+10			
Common Stock	6.700000e+07			
Other Current Assets	5.290000e+08			
Retained Earnings	2.180000e+08			
Other Liab	1.724000e+09			
Good Will	7.530000e+08			
Treasury Stock	-1.040000e+08			
Other Assets	3.060000e+08			
Cash	1.683000e+09			
Total Current Liabilities	2.945000e+09			
Deferred Long Term Asset Charges	NaN			
Other Stockholder Equity	-1.040000e+08			
Property Plant Equipment	1.552900e+10			
Total Current Assets	3.467000e+09			
Long Term Investments	4.020000e+08			
Net Tangible Assets	7.600000e+09			
Net Receivables	1.255000e+09			
Long Term Debt	7.042000e+09			
Accounts Payable	5.640000e+08			
Short Long Term Debt	2.260000e+08	]		

	2021-12-31	2021-09-30	\
['quarterly_cashflow',			
Investments	-1.700000e+07	9.000000e+06	
Change To Liabilities	-1.800000e+07	4.690000e+08	
Total Cashflows From Investing Activities	-5.180000e+08	-4.740000e+08	
Total Cash From Financing Activities	-1.149000e+09	-3.370000e+08	
Change To Operating Activities	-2.200000e+07	-2.900000e+07	
Net Income	1.506000e+09	8.380000e+08	
Change In Cash	-5.000000e+07	7.820000e+08	
Repurchase Of Stock	-5.890000e+08	-3.000000e+06	
Effect Of Exchange Rate	1.000000e+06	-5.000000e+06	
Total Cash From Operating Activities	1.616000e+09	1.598000e+09	
Depreciation	5.850000e+08	5.790000e+08	
Dividends Paid	-7.300000e+07	-7.400000e+07	
Change To Account Receivables	-3.100000e+07	-3.320000e+08	
Other Cashflows From Financing Activities	-6.000000e+06	-5.000000e+06	
Change To Netincome	-4.010000e+08	1.130000e+08	
Capital Expenditures	-5.150000e+08	-4.840000e+08	
Net Borrowings	NaN	NaN	

	2021-06-30	2021-03-31	
['quarterly_cashflow',			
Investments	8.000000e+06	1000000.0	
Change To Liabilities	7.200000e+07	1600000.0	
Total Cashflows From Investing Activities	-4.520000e+08	-13000000.0	
Total Cash From Financing Activities	-9.820000e+08	-82400000.0	
Change To Operating Activities	-7.600000e+07	-9500000.0	
Net Income	2.560000e+08	21300000.0	
Change In Cash	-3.390000e+08	-35900000.0	
Repurchase Of Stock	-9.000000e+06	-3300000.0	
Effect Of Exchange Rate	2.000000e+06	300000.0	
Total Cash From Operating Activities	1.093000e+09	59200000.0	
Depreciation	5.360000e+08	48100000.0	
Dividends Paid	-7.500000e+07	-12800000.0	
Change To Account Receivables	-1.000000e+08	-6300000.0	
Other Cashflows From Financing Activities	-2.000000e+06	-2800000.0	
Change To Netincome	2.840000e+08	2500000.0	
Capital Expenditures	-5.090000e+08	-49900000.0	
Net Borrowings	-7.420000e+08	-56000000.0	]
['quarterly_earnings',	Revenue	Earnings	
Quarter			

```
1Q2021 2461000000 213000000  
2Q2021 2977000000 256000000  
3Q2021 3625000000 838000000  
4Q2021 4054000000 1506000000]
```

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

	None	None
Research Development	None	None
Effect Of Accounting Charges	None	None
Income Before Tax	1662000000.0	964000000.0
Minority Interest	13700000.0	13700000.0
Net Income	1506000000.0	838000000.0
Selling General Administrative	95000000.0	95000000.0
Gross Profit	2380000000.0	2088000000.0
Ebit	1727000000.0	1068000000.0
Operating Income	1727000000.0	1068000000.0
Other Operating Expenses	-24000000.0	344000000.0
Interest Expense	-92000000.0	-93000000.0
Extraordinary Items	None	None
Non Recurring	None	None
Other Items	None	None
Income Tax Expense	150000000.0	120000000.0
Total Revenue	4054000000.0	3625000000.0
Total Operating Expenses	2327000000.0	2557000000.0
Cost Of Revenue	1674000000.0	1537000000.0
Total Other Income Expense Net	-65000000.0	-104000000.0
Discontinued Operations	None	None
Net Income From Continuing Ops	1512000000.0	844000000.0
Net Income Applicable To Common Shares	1487000000.0	832000000.0

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

	None	None
Research Development	None	None
Effect Of Accounting Charges	None	None
Income Before Tax	304000000.0	-32000000.0
Minority Interest	136000000.0	133000000.0
Net Income	256000000.0	213000000.0
Selling General Administrative	94000000.0	107000000.0
Gross Profit	1655000000.0	1291000000.0
Ebit	320000000.0	202000000.0
Operating Income	320000000.0	202000000.0
Other Operating Expenses	702000000.0	512000000.0
Interest Expense	-98000000.0	-105000000.0
Extraordinary Items	None	None
Non Recurring	None	None
Other Items	None	None
Income Tax Expense	43000000.0	-248000000.0
Total Revenue	2977000000.0	2461000000.0
Total Operating Expenses	2657000000.0	2259000000.0
Cost Of Revenue	1322000000.0	1170000000.0
Total Other Income Expense Net	-16000000.0	-23400000.0
Discontinued Operations	None	None
Net Income From Continuing Ops	261000000.0	216000000.0
Net Income Applicable To Common Shares	253000000.0	211000000.0

```
] Holder Shares Date Reported \
```

	Holder	Shares	Date Reported
0 Vanguard Total Stock Market Index Fund	19232335	2021-12-30	
1 Select Sector SPDR Fund-Energy Select	18515332	2022-01-30	
2 Vanguard Mid-Cap Index Fund	15295295	2021-12-30	
3 Vanguard 500 Index Fund	13333264	2021-12-30	
4 Undiscovered Managers Behavioral Value Fund	7254904	2021-12-30	
5 SPDR S&P 500 ETF Trust	6678214	2022-01-30	
6 Fidelity 500 Index Fund	6447707	2022-02-27	
7 iShares Core S&P 500 ETF	5236340	2022-01-30	
8 Vanguard Index-Value Index Fund	5169015	2021-12-30	
9 Victory Portfolios-Sycamore Established Value ...	5050000	2022-01-30	

% Out	Value
0 0.0291	847184356
1 0.0281	936320339
2 0.0232	673757744
3 0.0202	587330279
4 0.0110	319578521
5 0.0101	337717281
6 0.0098	383960951
7 0.0079	264801713
8 0.0078	227695110
9 0.0077	255378500

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

```
['sustainability', Value
```

```
2022-5
```

	False
palmOil	False
controversialWeapons	False
gambling	False
socialScore	8.78
nuclear	False
furLeather	False
alcoholic	False
gmo	False
catholic	False
socialPercentile	0
peerCount	66
governanceScore	7.86
environmentPercentile	0
animalTesting	False
tobacco	False

```

totalEsg 34.39
highestControversy 2
esgPerformance LEAD_PERF
coal False
pesticides False
adult False
percentile 76.03
peerGroup Oil & Gas Producers
smallArms False
environmentScore 17.75
governancePercentile 0
militaryContract False]
symbol: UTHR
sector: Healthcare
Index: SP400
vol_30d_2yr: 8360250.78125
Sector 1YMF: 8.760009765625
1YMF: 8.760009765625
risk trend factor: 0.13940181852529768
    beta currentRatio debtToEquity earningsGrowth ebitda \
UTHR 0.639732 8.84 19.156 7.246 959200000

    ebitdaMargins forwardPE freeCashflow grossMargins grossProfits \
UTHR 0.54244 11.61131 514424992 0.92908 1563000000

    heldPercentInstitutions industry marketCap operatingCashflow \
UTHR 0.99621 Biotechnology 10230438912 797100032

    operatingMargins payoutRatio pegRatio priceToBook \
UTHR 0.51422 0 6.92 2.448979

    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
UTHR 5.785466 0.38873 8.333 0.11365

    returnOnEquity revenueGrowth revenuePerShare sector \
UTHR 0.18038 0.218 39.252 Healthcare

    sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
UTHR 45299500 4.37 2267699968 50.06 800000000

    totalRevenue trailingPE
UTHR 1768300032 15.645306

```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
<b>2022-06-17</b>	219.380005	194.589531	219.462223	244.334915	195.494921	19.533079	156.428764	234.561078

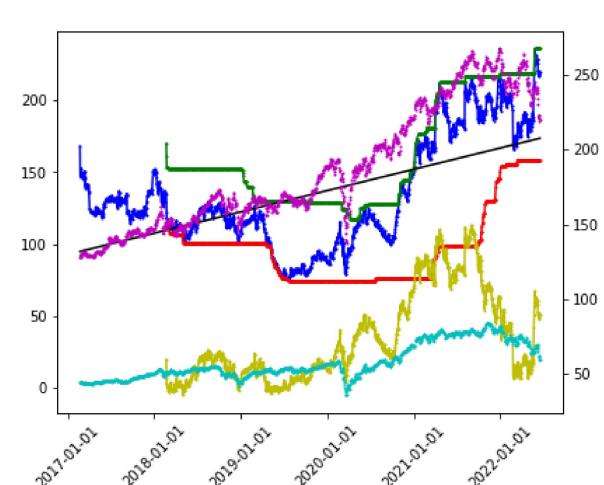
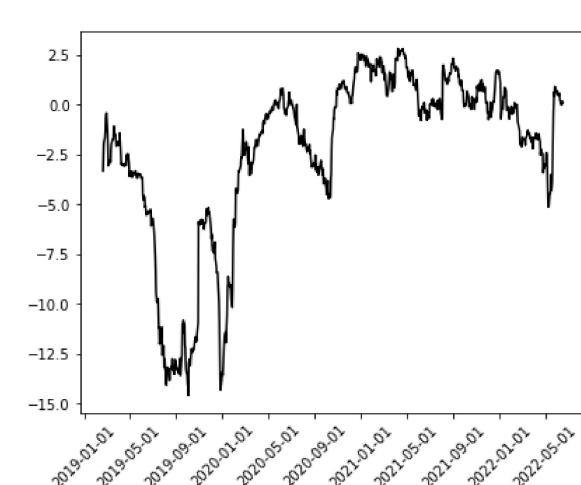
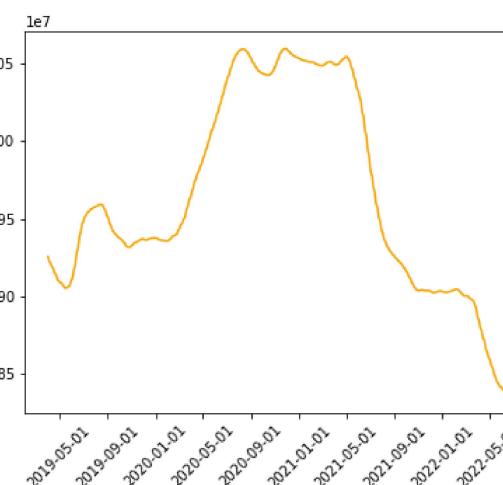
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
UTHR	1.481235	219.380005	8360250.78125	0.878858	0.826178 0.414478

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		

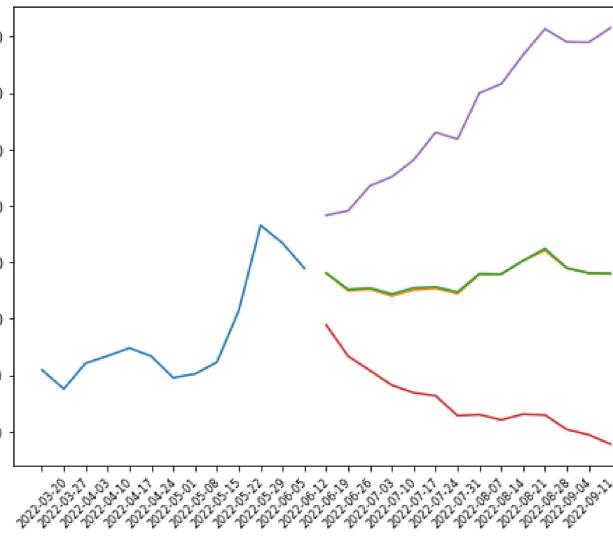
Sector 1YMF: -122.20997619628906  
Sector Volume Factor: 1.2238851152317325  
Sector Risk Trend Factor: -3.3236323632363236  
Index 1YMF: -69.05999755859375  
Index Volume Factor: 0.5765983741853883  
Index Risk Trend Factor: -5.134573474205833



```

ets next 13 weeks
inner cv scores:
best model: ['mul', None]
best inner cv score, sdev (11 folds): 581.052062609217 434.3031674485619
test cv mean error, stdev (10 folds): 606.4045953631539 447.67344757062017
sell date: 2022-08-28
expected return: 0.021753478217960982
discounted return: 0.000303148019422661
quarter return: 1.0282778280825864

```



```

['options', ('2022-08-19',)]
['sustainability', Value
2022-5
palmOil False
controversialWeapons False
gambling False
socialScore 16.62
nuclear False
furLeather False
alcoholic False
gmo False
catholic False
socialPercentile None
peerCount 83
governanceScore 7.41
environmentPercentile None
animalTesting True
tobacco False
totalEsg 25.71
highestControversy 1
esgPerformance AVG_PERF
coal False
pesticides False
adult False
percentile 45.83
peerGroup Pharmaceuticals
smallArms False
environmentScore 1.68
governancePercentile None
militaryContract False]
symbol: VIVO
sector: error
sector: error
Index: SP600
vol_30d_2yr: 11730103.3203125
Sector 1YMF: 0.6100006103515625
1YMF: 0.6100006103515625
risk trend factor: 0.10971235052954659
Empty DataFrame
Columns: []
Index: [VIVO]

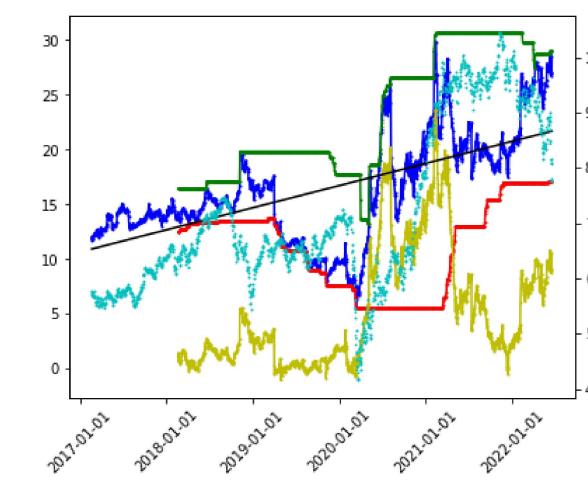
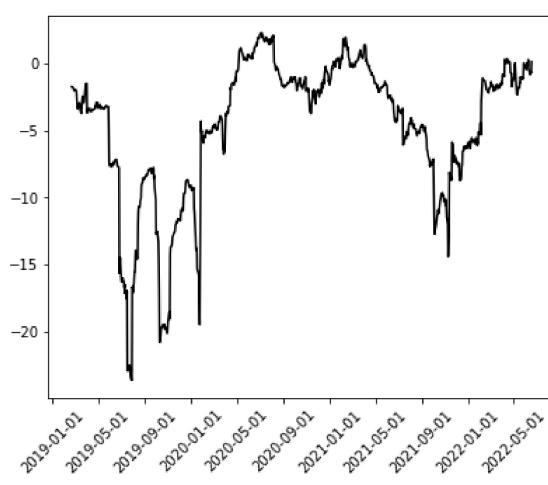
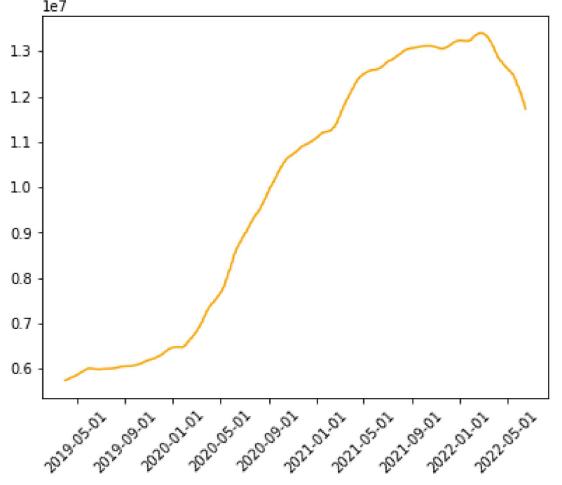
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper
2022-06-17 28.5 25.427799 27.012222 28.596646 26.44746 1.162243 24.122974 28.771947

volume_factor latest_p vol_30d_2yr pct_2yr adf hurst
VIVO 0.591657 28.5 11730103.320312 0.878325 0.565494 0.431737

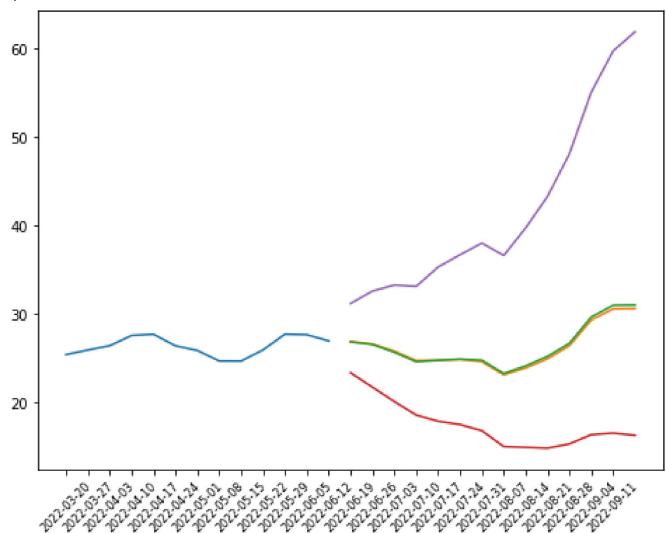
```

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: -77.27001953125  
 Index Volume Factor: 1.232760496116622  
 Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks  
 inner cv scores:  
 best model: ['mul', 'mul', True]  
 best inner cv score, sdev (11 folds): 16.17981475595061 14.971267272758354  
 test cv mean error, stdev (10 folds): 17.700934500856853 14.869460976371  
 sell date: 2022-09-18  
 expected return: 0.07343291293542277  
 discounted return: 0.0007705341287063128  
 quarter return: 1.0734329129354319



```
[ 'options', ('2022-07-15', )]
symbol: ROCC
sector: Energy
Index: SP600
vol_30d_2yr: 11962556.0546875
Sector 1YMF: 2.549999237060547
1YMF: 2.549999237060547
risk trend factor: 0.10821588524114191
    beta currentRatio debtToEquity      ebitda ebitdaMargins forwardPE \
ROCC  2.866152      0.497     80.978   323780000      0.45632  3.112757

    freeCashflow grossMargins grossProfits heldPercentInstitutions \
ROCC  111158752      0.9232    508729000      0.83062

    industry marketCap operatingCashflow operatingMargins payoutRatio \
ROCC  Oil & Gas E&P  800399808      390172992      0.23271      0

    pegRatio priceToBook priceToSalesTrailing12Months profitMargins \
ROCC  0.13      2.546801      1.128053      0.06175

    quickRatio returnOnAssets returnOnEquity revenueGrowth revenuePerShare \
ROCC  0.404      0.08139      0.19205      1.903      39.08

    sector sharesOutstanding shortRatio totalCash totalCashPerShare \
ROCC  Energy      21163400      2.3      6358000      0.3

    totalDebt totalRevenue trailingPE
ROCC  525808992      709540992      16.0731
```

**Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d\_lower 90d\_upper**

**2022-06-17** 37.82 32.048974 43.306825 54.564677 37.893968 5.380754 27.132461 48.655476

**volume\_factor latest\_p vol\_30d\_2yr pct\_2yr adf hurst**

**ROCC** 1.213679 37.82 11962556.054688 0.666102 0.594188 0.577777

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: -3.82000732421875

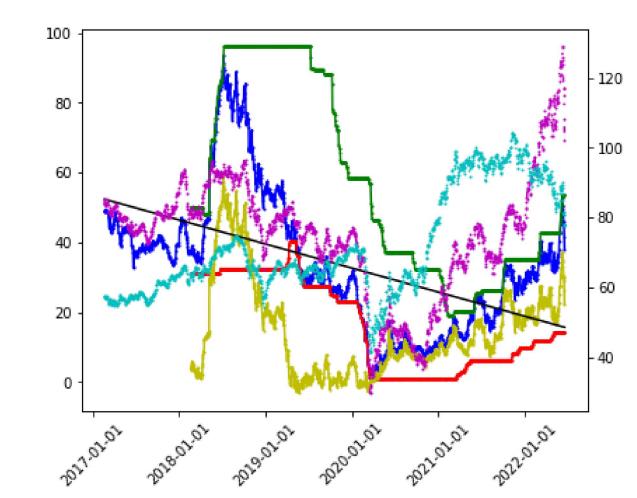
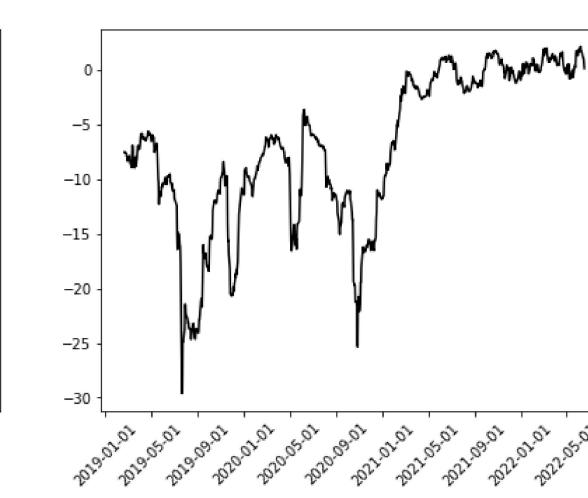
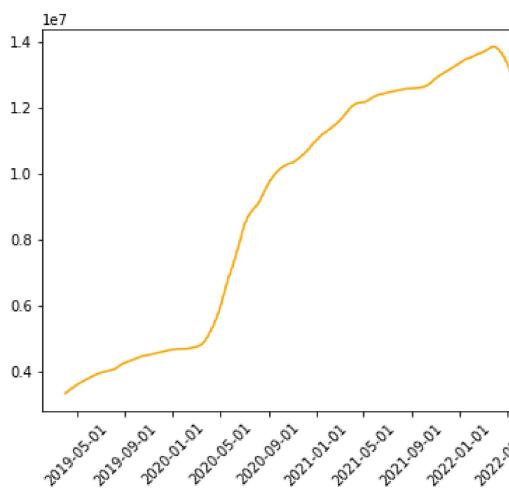
Sector Volume Factor: 0.8966412344901694

Sector Risk Trend Factor: -0.12330558135216596

Index 1YMF: -77.27001953125

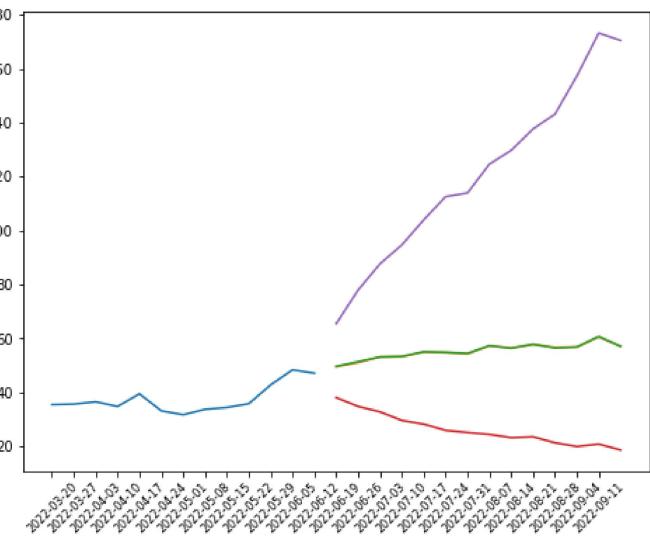
Index Volume Factor: 1.232760496116622

Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks  
inner cv scores:

best model: ['add', 'mul', False]  
best inner cv score, sdev (11 folds): 77.56947848579797 62.68356673287805  
test cv mean error, stdev (10 folds): 80.27999995329917 65.12555095069297  
sell date: 2022-09-11  
expected return: 0.6013484840304625  
discounted return: 0.005554736263279736  
quarter return: 1.6646612280149231



['options', ('2022-07-15', '2022-12-16')]

symbol: COP

sector: Energy

Index: SP500

vol\_30d\_2yr: 189274208.203125

Sector 1YMF: 3.6199951171875

1YMF: 3.6199951171875

risk trend factor: 0.1025203790799483

  beta currentRatio debtToEquity dividendRate dividendYield \

COP 1.350272        1.513        38.088        1.92        0.0176

  earningsGrowth        ebitda ebitdaMargins forwardPE freeCashflow \

COP        4.853        25497999360        0.46444        7.529317        10752749568

  grossMargins grossProfits heldPercentInstitutions        industry \

COP        0.52295        22936000000        0.81349        Oil & Gas E&P

  marketCap operatingCashflow operatingMargins payoutRatio pegRatio \

COP 121247997952        19983998976        0.33401        0.2348        0.48

  priceToBook priceToSalesTrailing12Months profitMargins quickRatio \

COP 2.463471        2.208525        0.23417        1.287

  returnOnAssets returnOnEquity revenueGrowth revenuePerShare sector \

COP        0.1295        0.27835        0.828        41.447        Energy

  sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \

COP 1293449984        2.15        7144000000        5.523        18745999360

  totalRevenue trailingPE

COP 54899998720        9.71701

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d\_lower 90d\_upper

2022-06-17 93.739998 99.652102 112.199365 124.746628 104.355397 7.447422 89.460553 119.250241

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

COP 0.95084 93.739998 189274208.203125 0.685759 0.80033 0.48084

l axis		r axis	
legend	symbol	legend	sector

blue	symbol	magenta	sector
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green	trailing_1yr_max	cyan	index
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red	trailing_1yr_min		
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orange	30d_vol_2yr		
--------	-------------	--	--

black	risk_trend_factor/linear		
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yellow	supply_trend_1yr		
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Sector 1YMF: -3.82000732421875

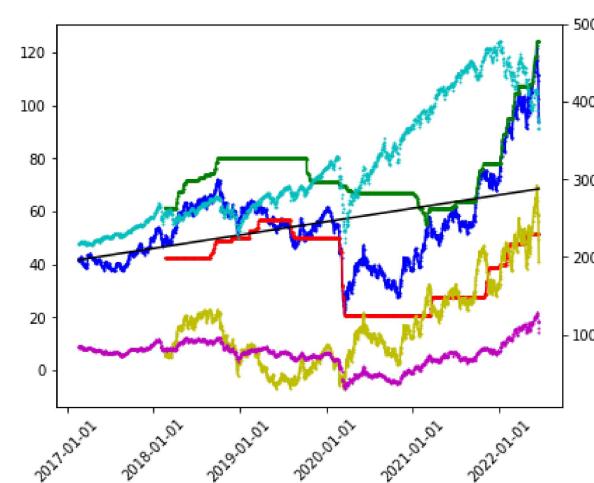
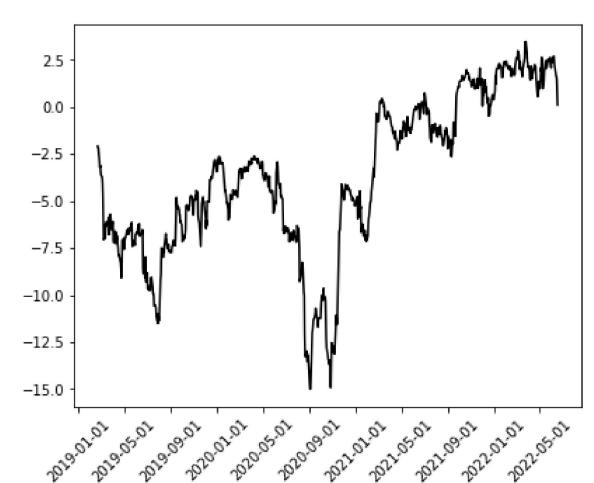
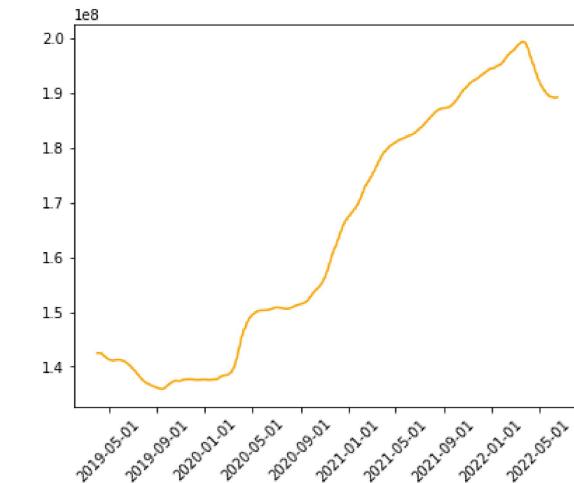
Sector Volume Factor: 0.8966412344901694

Sector Risk Trend Factor: -0.12330558135216596

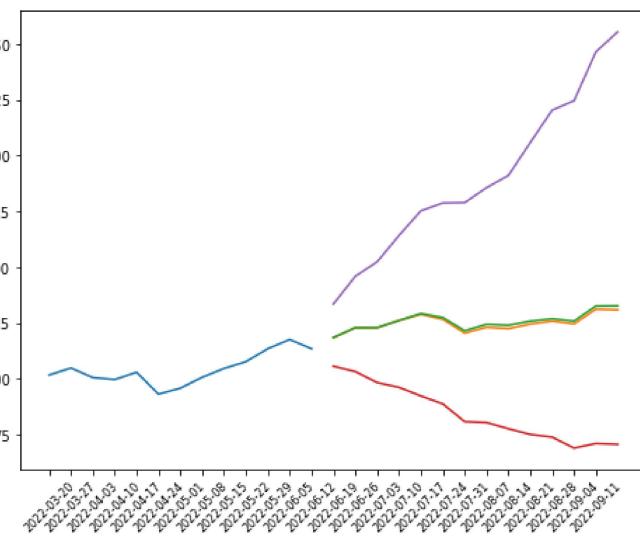
Index 1YMF: -287.8400573730469

Index Volume Factor: 1.1835166983613057

Index Risk Trend Factor: -3.791860877423899



```
ets next 13 weeks
inner cv scores:
best model: ['mul', 'mul', True]
best inner cv score, sdev (11 folds): 131.8588036807157 147.39173844312845
test cv mean error, stdev (10 folds): 144.32990327126163 148.94947737187888
sell date: 2022-09-11
expected return: 0.39963937496998936
discounted return: 0.003963299228999961
quarter return: 1.4389344529812573
```



```

['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 None
peerCount 66
governanceScore 7.68
environmentPercentile None
animalTesting False
tobacco False
totalEsg 34.92
highestControversy 2
esgPerformance OUT_PERF
coal False
pesticides False
adult False
percentile 77.49
peerGroup Oil & Gas Producers
smallArms False
environmentScore 17.53
governancePercentile None
militaryContract False]
symbol: OXY
sector: Energy
Index: SP500
vol_30d_2yr: 498984476.953125
Sector 1YMF: 2.1100006103515625
1YMF: 2.1100006103515625
risk trend factor: 0.0937361355002032
    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 6.773723 9129875456 0.64697

    grossProfits heldPercentInstitutions industry marketCap \
OXY 16297000000 0.82197 Oil & Gas E&P 52182794240

    operatingCashflow operatingMargins payoutRatio pegRatio priceToBook \
OXY 12762999808 0.25255 0.0242 0.24 3.445545

    priceToSalesTrailing12Months profitMargins quickRatio returnOnAssets \
OXY 1.798662 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 8.324114

```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	55.68	56.839295	65.607143	74.374991	61.382222	4.693201	51.995819	70.768625

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
OXY	1.190976	55.68	498984476.953125	0.71978	0.690434	0.542013

l axis r axis

legend	legend
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blue	symbol	magenta	sector
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green	trailing_1yr_max	cyan	index
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red	trailing_1yr_min		
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orange	30d_vol_2yr		
--------	-------------	--	--

black	risk_trend_factor/linear		
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yellow	supply_trend_1yr		
--------	------------------	--	--

Sector 1YMF: -3.82000732421875

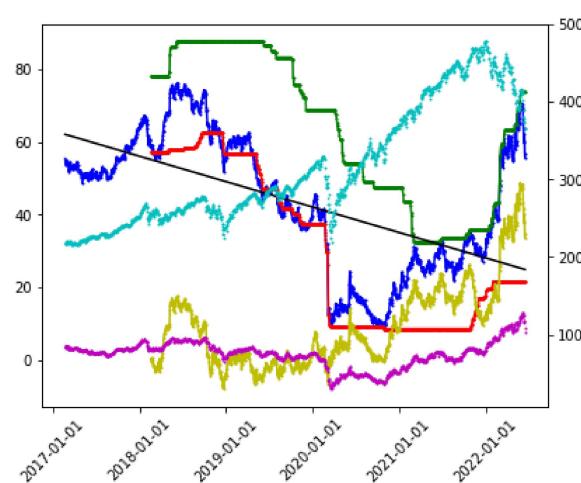
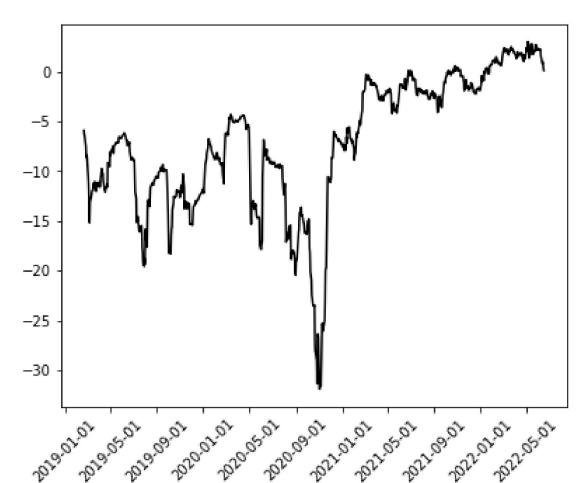
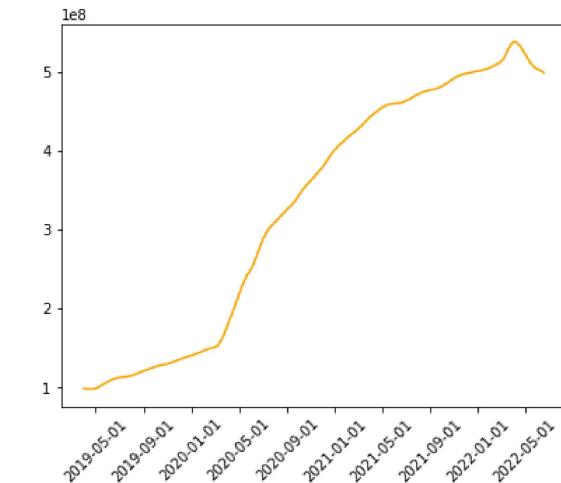
Sector Volume Factor: 0.8966412344901694

Sector Risk Trend Factor: -0.12330558135216596

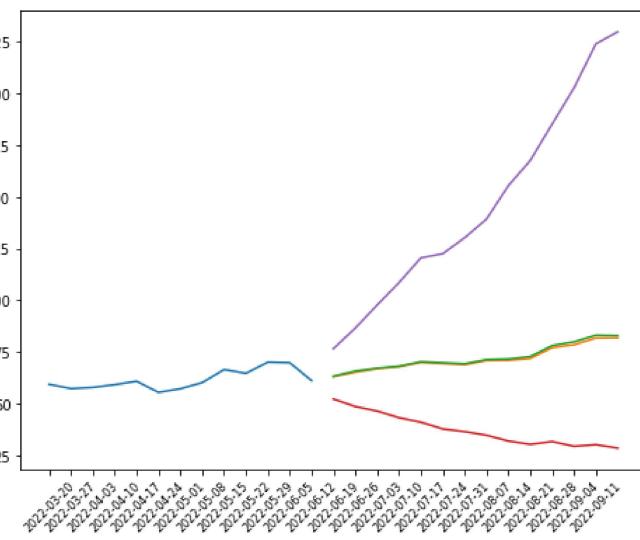
Index 1YMF: -287.8400573730469

Index Volume Factor: 1.1835166983613057

Index Risk Trend Factor: -3.791860877423899



```
ets next 13 weeks
inner cv scores:
best model: ['mul', 'add', True]
best inner cv score, sdev (11 folds): 52.333627310958384 43.44383536064943
test cv mean error, stdev (10 folds): 56.28436552303815 43.639567583548086
sell date: 2022-09-18
expected return: 0.4701404460424396
discounted return: 0.004197457989383091
quarter return: 1.470140446042453
```



```

['options', ('2022-08-19', '2023-01-20', '2024-01-19')]           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: MGPI
sector: error
sector: error
Index: SP600
vol_30d_2yr: 2319158.7890625
Sector 1YMF: 1.1299972534179688
1YMF: 1.1299972534179688
risk trend factor: 0.07424422882968507
Empty DataFrame
Columns: []
Index: [MGPI]

```

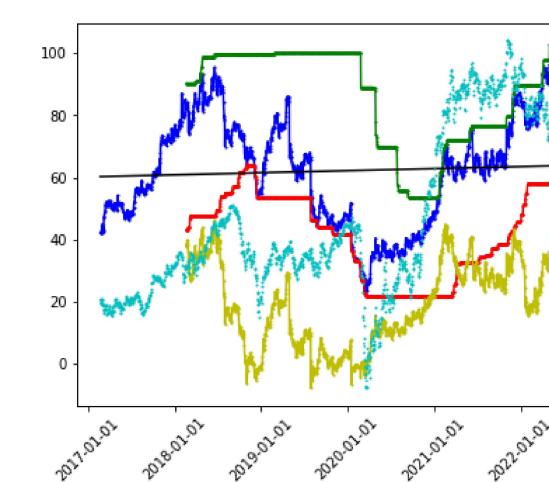
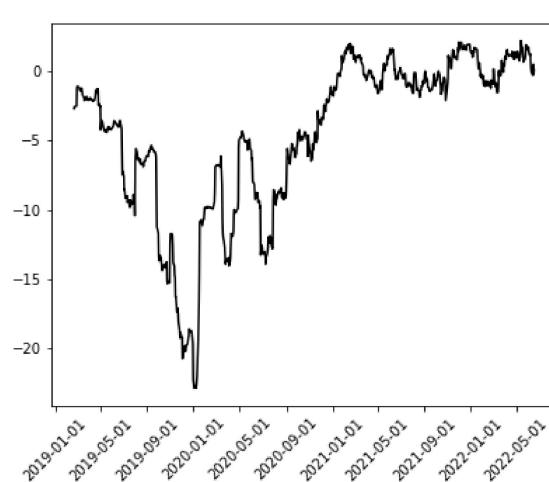
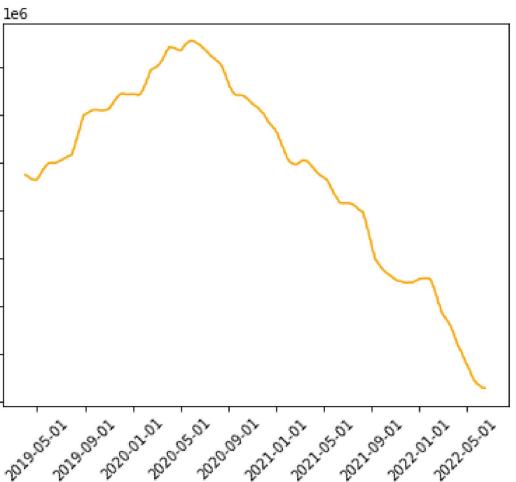
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	93.139999	89.504506	94.30381	99.103114	92.664127	3.996399	84.671329	100.656925

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
MGPI	1.204144	93.139999	2319158.789062	0.847493	0.649088	0.471114

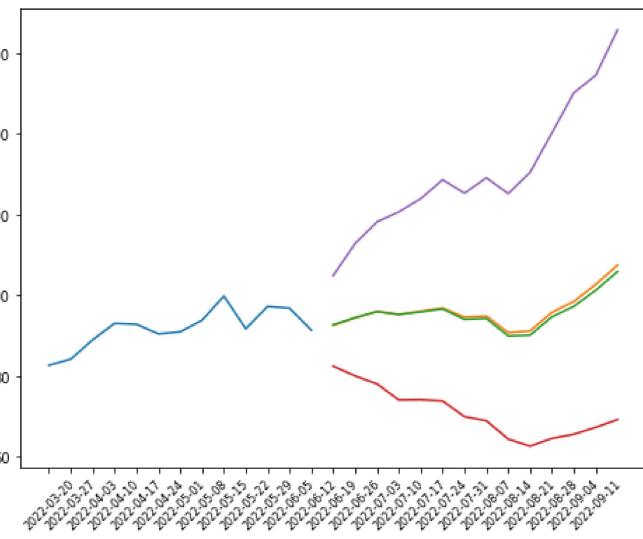
I axis

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

Index 1YMF: -77.27001953125  
Index Volume Factor: 1.232760496116622  
Index Risk Trend Factor: -5.242200185196592



```
ets next 13 weeks
inner cv scores:
best model: ['mul', 'add', False]
best inner cv score, sdev (11 folds): 110.11938999584795 125.90071948750057
test cv mean error, stdev (10 folds): 112.09218399494068 131.88358140609708
sell date: 2022-09-18
expected return: 0.15413107432202397
discounted return: 0.0015593421663535612
quarter return: 1.154131074322016
```



	exp_return	sell_date	stop_loss_price	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																
<b>VPU</b>	0.076822	2022-06-19	147.621984	1	0.076822	906.245463	172.246362	373.069681	False	143.355682	161.712862	141.440002	error	nan	1.217805	2.637653
<b>VDC</b>	0.028968	2022-06-19	178.612370	1	0.028968	13.834763	95.349890	81.134142	False	175.035670	189.634819	177.059998	error	nan	0.538517	0.458230
<b>MCK</b>	0.028402	2022-06-19	297.727645	1	0.028402	13.151865	542.149507	591.201488	False	286.348499	333.673860	300.570007	Healthcare	SP500	1.803738	1.966934
<b>PPC</b>	0.023072	2022-06-19	28.721973	1	0.023072	8.154174	27.983156	36.091886	False	27.427006	32.851442	29.340000	Consumer Defensive	SP400	0.953754	1.230126
<b>VNQ</b>	0.022059	2022-06-19	87.088217	1	0.022059	7.444024	93.691222	167.986714	False	84.301068	95.663107	87.699997	error	nan	1.068315	1.915470
<b>SM</b>	2.875935	2022-09-18	40.674124	92	0.014835	3.875935	46.450577	59.425732	False	21.469464	119.844285	39.709999	Energy	SP600	1.169745	1.496493
<b>APA</b>	0.483862	2022-07-17	43.371911	29	0.013702	3.497287	51.132082	41.973447	False	32.681251	106.107097	39.220001	Energy	SP500	1.303725	1.070205
<b>CEIX</b>	1.525320	2022-09-18	42.518240	92	0.010120	2.525320	36.976336	64.101820	False	41.405213	328.056366	46.150002	Energy	SP600	0.801221	1.388988
<b>PBF</b>	0.572279	2022-08-07	36.494220	50	0.009092	2.299399	29.947934	20.238756	False	23.660225	117.987869	32.980000	Energy	SP600	0.908064	0.613668
<b>PLAB</b>	0.069926	2022-06-26	19.192818	8	0.008485	2.175552	3.307493	2.888139	False	17.133137	24.362935	19.150000	Technology	SP600	0.172715	0.150817
<b>DVN</b>	0.706847	2022-08-28	65.985133	71	0.007559	1.999272	73.275838	88.550052	False	39.716227	252.401704	58.020000	Energy	SP500	1.262941	1.526199
<b>ROCC</b>	0.601348	2022-09-11	43.417744	85	0.005555	1.664661	80.280000	65.125551	False	20.887187	173.182374	37.820000	Energy	SP600	2.122686	1.721987
<b>MRO</b>	0.449198	2022-08-28	26.459901	71	0.005239	1.617279	12.772815	12.852391	False	19.517028	64.564212	24.150000	Energy	SP500	0.528895	0.532190
<b>OXY</b>	0.470140	2022-09-18	57.732462	92	0.004197	1.470140	56.284366	43.639568	False	28.538751	229.738201	55.680000	Energy	SP500	1.010854	0.783757
<b>VLO</b>	0.411170	2022-09-11	127.792432	85	0.004065	1.452437	310.914548	235.949804	False	82.118936	306.850082	112.440002	Energy	SP500	2.765160	2.098451
<b>COP</b>	0.399639	2022-09-11	111.423961	85	0.003963	1.438934	144.329903	148.949477	False	71.034738	246.498695	93.739998	Energy	SP500	1.539683	1.588964
<b>LNTH</b>	0.410907	2022-09-18	58.360497	92	0.003749	1.410907	42.661090	67.928470	False	46.166623	155.093125	60.720001	Healthcare	SP600	0.702587	1.118717
<b>MPC</b>	0.364037	2022-09-11	98.309360	85	0.003659	1.399360	136.354099	146.003603	False	75.170242	200.092470	87.290001	Energy	SP500	1.562082	1.672627
<b>VDE</b>	0.280411	2022-09-11	114.715901	85	0.002912	1.306742	177.935829	188.779093	False	90.308979	184.854795	102.349998	error	nan	1.738503	1.844446
<b>DINO</b>	0.280834	2022-09-18	51.912132	92	0.002694	1.280834	74.399935	61.366321	False	32.725490	101.513742	45.000000	Energy	SP400	1.653332	1.363696
<b>VIS</b>	0.093782	2022-07-24	162.507673	36	0.002493	1.257447	223.723963	187.537210	False	148.203840	205.532959	159.809998	error	nan	1.399937	1.173501
<b>XOM</b>	0.196576	2022-09-11	92.896998	85	0.002114	1.214392	100.127422	81.366621	False	75.561436	141.927302	86.120003	Energy	SP500	1.162650	0.944805
<b>TVTY</b>	0.085128	2022-08-07	29.270264	50	0.001635	1.162210	22.590347	17.912448	False	16.786355	76.858534	32.130001	error	SP600	0.703092	0.557499
<b>FCN</b>	0.129379	2022-09-04	157.498133	78	0.001561	1.154313	216.744393	102.596196	False	136.357904	254.170707	164.020004	error	SP400	1.321451	0.625510
<b>MGPI</b>	0.154131	2022-09-18	87.337527	92	0.001559	1.154131	112.092184	131.883581	False	69.243583	165.798603	93.139999	error	SP600	1.203481	1.415971
<b>SPY</b>	0.113654	2022-08-28	375.277820	71	0.001517	1.149682	1006.640359	1238.380454	False	348.324936	489.391926	365.859985	error	nan	2.751436	3.384848
<b>LLY</b>	0.110586	2022-08-28	290.940293	71	0.001478	1.145580	480.525848	566.204821	False	244.939958	423.257415	290.899994	Healthcare	SP500	1.651859	1.946390
<b>VGT</b>	0.131880	2022-09-18	322.361110	92	0.001347	1.131880	1054.935325	805.991065	False	285.666893	458.695618	319.809998	error	nan	3.298631	2.520218
<b>SLY</b>	0.094646	2022-08-28	79.756195	71	0.001274	1.124320	112.115183	145.362159	False	65.611626	111.367298	78.089996	error	nan	1.435718	1.861470
<b>MDYG</b>	0.090018	2022-08-28	61.186609	71	0.001215	1.118164	68.776968	127.441257	False	52.485092	82.359961	59.930000	error	nan	1.147622	2.126502
<b>MTOR</b>	0.107237	2022-09-18	34.318822	92	0.001108	1.107237	16.151105	12.834043	False	25.925141	61.252211	35.939999	error	SP600	0.449391	0.357096
<b>VCR</b>	0.055828	2022-08-07	226.072396	50	0.001087	1.105126	1148.847290	1594.275234	False	190.638431	296.657143	225.869995	error	nan	5.086321	7.058375
<b>AZPN</b>	0.101348	2022-09-18	184.873458	92	0.001050	1.101348	500.504516	547.882965	False	144.367616	310.672742	189.199997	Technology	SP400	2.645373	2.895787
<b>SPTM</b>	0.068789	2022-08-28	46.016489	71	0.000937	1.090027	15.009608	17.634103	False	40.177290	58.370196	45.310001	error	nan	0.331265	0.389188
<b>VOX</b>	0.066489															

	exp_return	sell_date	stop_loss_price	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																
<b>SJI</b>	-0.013758	2022-09-18	32.332295	92	-0.000151	0.986242	12.011302	8.936994	False	24.579493	46.285628	34.200001	error	SP600	0.351208	0.261316
<b>BANF</b>	-0.038312	2022-09-18	86.925556	92	-0.000425	0.961688	68.882928	42.057564	False	63.653029	130.742264	94.860001	error	SP600	0.726154	0.443365