

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

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

standard deviations

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

t scores

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

p values

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

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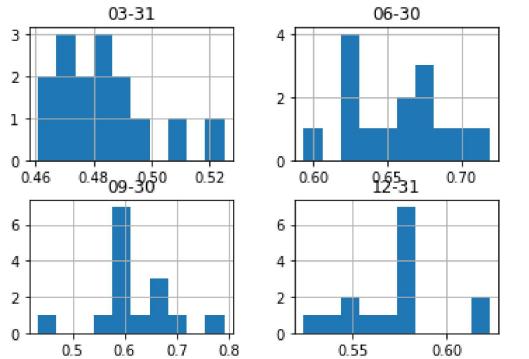
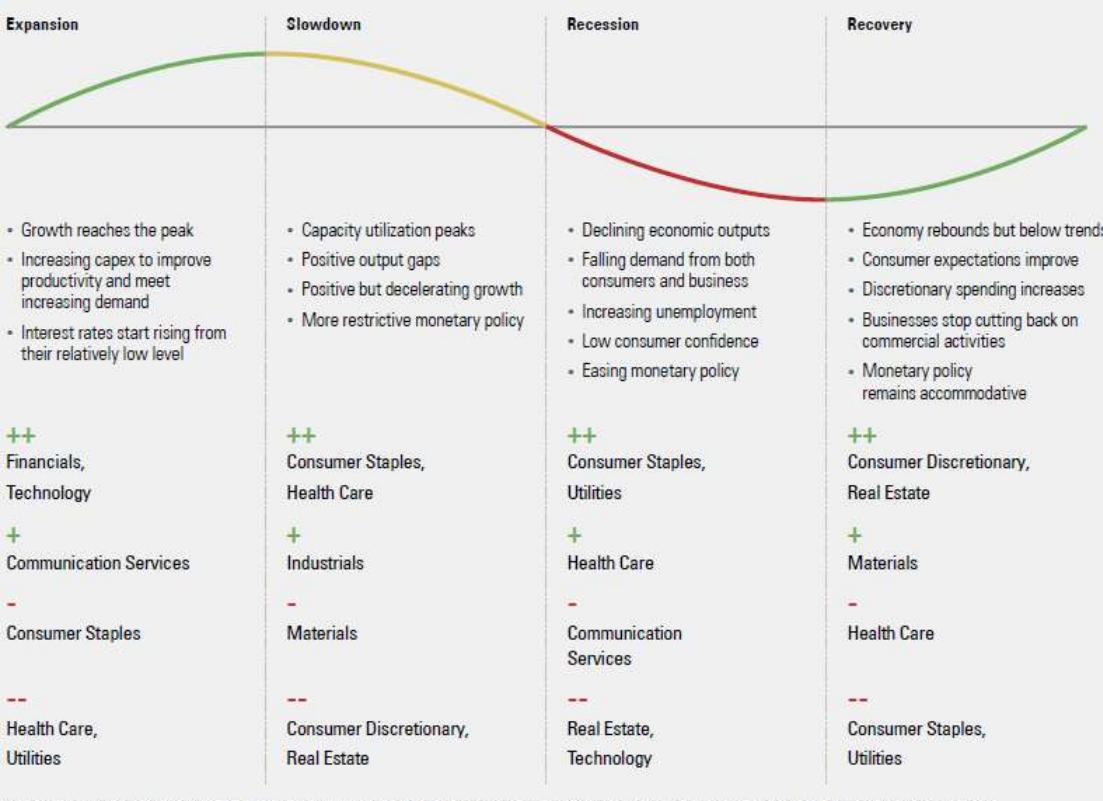


Figure 11: A Sector Roadmap for Business Cycles





Cycles

Strongest

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

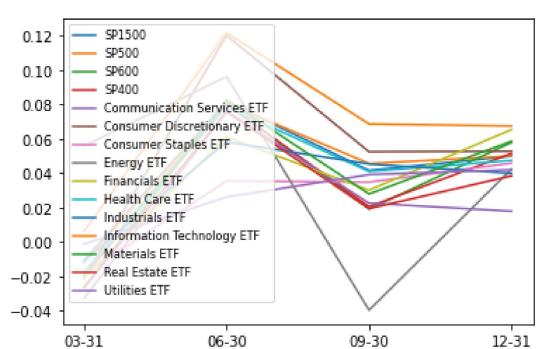
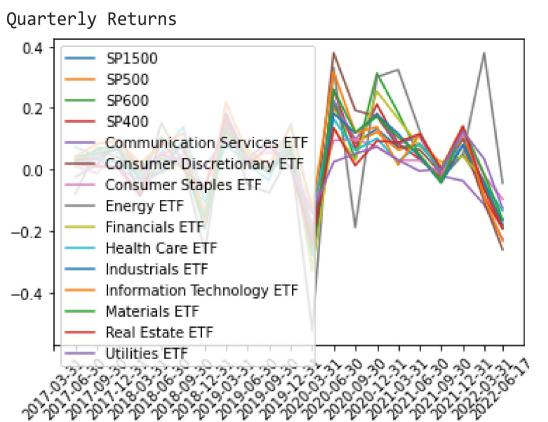
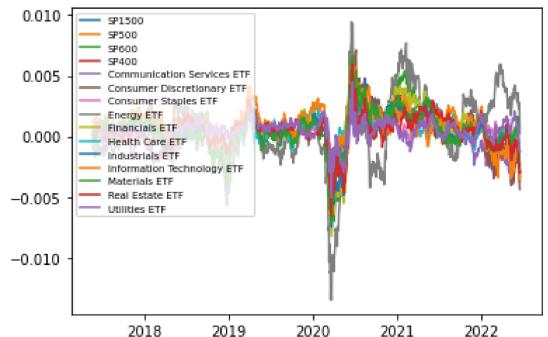
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0	Utilities ETF	Energy ETF	Consumer Discretionary ETF	Consumer Discretionary ETF	Energy ETF	Health Care ETF	Utilities ETF	Information Technology ETF	Utilities ETF	Real Estate ETF	Health Care ETF	Health Care ETF	Consumer Discretionary ETF	Consumer Discretionary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

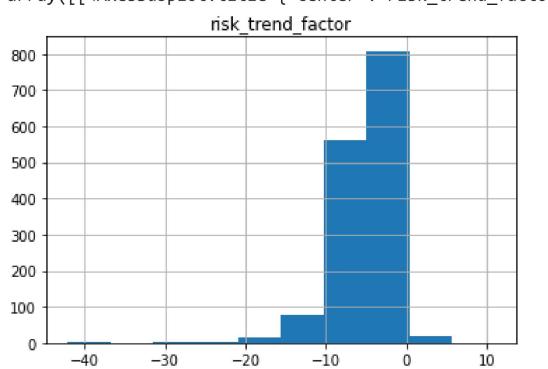
Symbol risk_trend_factor Sector

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



0.051078501531639196

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1520

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Index(['Open', 'High', 'Low', 'Close', 'Adj Close', 'Volume', 'Symbol',
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       'supply_trend_60d', 'supply_trend_30d', 'trailing_60d_max',
       'trailing_60d_min', 'trailing_30d_max', 'trailing_30d_min', '90dSMA',
       '90dSDDev', 'TP', '21dstdTP', '21dMA-TP', '21dBOLU', '21dBOLD',
       'trailing_risk_40d_max', 'trailing_risk_40d_min', 'risk_per_share',
       '30d_vol', '30d_vol_2yr', 'volume_factor', '1YMF', 'risk_trend_factor'],
      dtype='object')
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```

Index(['Symbol', 'max_2y', 'min_2y', 'std_2y', 'mean_2y', 'max_1y', 'min_1y',
       'std_1y', 'mean_1y', 'latest_p', '2yr_close_0pct', '2yr_close_2pct',
       '2yr_close_9pct', '2yr_close_25pct', '2yr_close_50pct',
       '2yr_close_75pct', '2yr_close_91pct', '2yr_close_98pct',
       '2yr_close_100pct', '1yr_close_0pct', '1yr_close_2pct',
       '1yr_close_9pct', '1yr_close_25pct', '1yr_close_50pct',
       '2yr_close_75pct', '1yr_close_91pct', '1yr_close_98pct',
       '1yr_close_100pct', 'risk_trend_factor', 'supply_trend_1yr',
       'supply_trend_60d', 'supply_trend_30d', 'vol_30d_2yr', 'pct_1yr',
       'pct_2yr', 'MIN_Lookback_One_Year', 'MIN_Lookback_2_Months',
       'MIN_Lookback_1_Months', 'vol_30d', 'volume_factor', 'adf', 'hurst',
       '1YMF', 'Market Index', 'Sector'],
      dtype='object')

```

	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	Industrials	NaN	SP500	SPY
EW	NaN	NaN	NaN	NaN	NaN	-2.677285	NaN	NaN	Healthcare	NaN	SP500	SPY
PCRX	NaN	NaN	NaN	NaN	NaN	-2.849253	NaN	NaN	Healthcare	NaN	SP600	SLY
CBOE	NaN	NaN	NaN	NaN	NaN	-4.539896	NaN	NaN	Financial Services	NaN	SP500	SPY
PCAR	NaN	NaN	NaN	NaN	NaN	-4.010257	NaN	NaN	Industrials	NaN	SP500	SPY

1555 rows × 12 columns

0.975

temp_sm

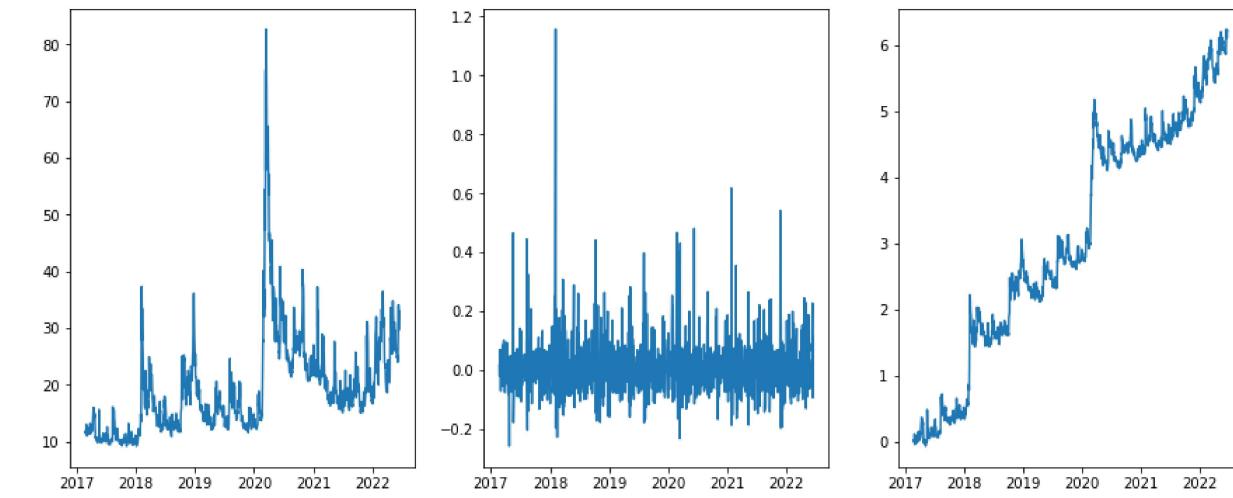
	index	MIN_Lookback_One_Year	MIN_Lookback_2_Months	MIN_Lookback_1_Months	risk_trend_factor	volume_factor
Symbol						
A	2022-06-17	147.679993	179.570007	179.570007	-9.088903	1.131711
AA	2022-06-17	44.419998	98.089996	98.089996	-3.704472	0.98632
AAL	2022-06-17	22.549999	22.549999	22.549999	-3.126898	0.707794
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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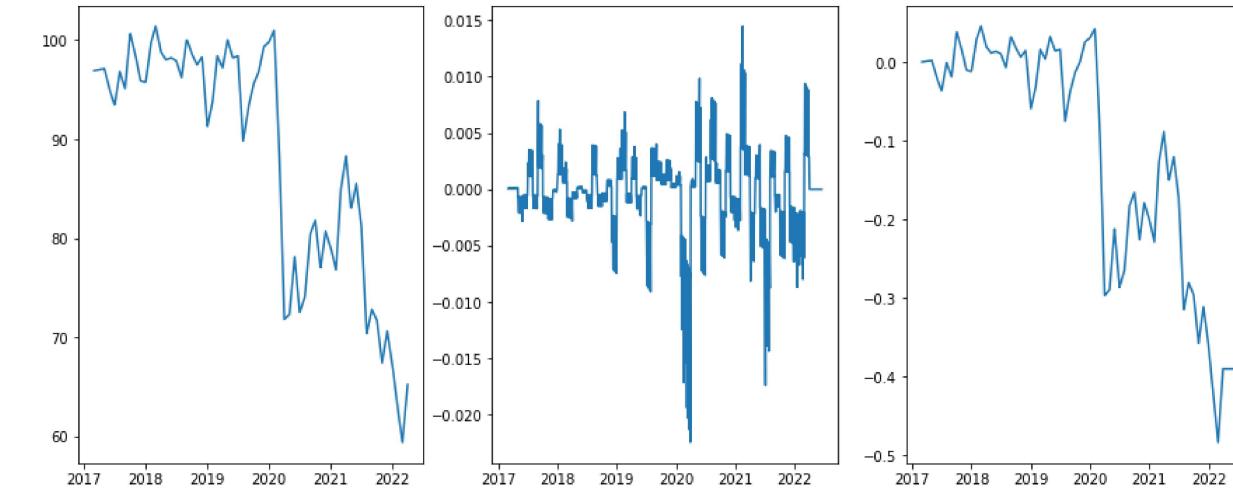
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Index(['risk_trend_factor', 'Sector', 'index', 'index_Symbol'], dtype='object')
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	MIN_Lookback_One_Year	MIN_Lookback_2_Months	MIN_Lookback_1_Months	risk_trend_factor	volume_factor	index	sector	sector_risk_trend_factor	index	Sector
Symbol										
ACC	49.209999	65.019997	65.019997	10.926848	2.134689	VNQ	MDYG	-3.05337	SP400	Real Estate
MTOR	32.93	36.279999	36.279999	5.065223	1.664475	error	SLY	error	SP600	error
TVTY	27.870001	32.889999	32.889999	2.341879	1.643789	error	SLY	error	SP600	error
BANF	77.379997	86.82	86.82	2.011991	1.135864	error	SLY	error	SP600	error
Y	737.890015	862.869995	862.869995	1.771776	1.56538	VFH	MDYG	-4.617891	SP400	Financial Services
SAFM	177.479996	200.0	200.0	1.751569	1.334104	VDC	MDYG	-2.28397	SP400	Consumer Defensive
SJI	29.24	35.32	35.32	1.295238	0.791297	error	SLY	error	SP600	error
LNTH	25.790001	64.139999	69.738998	1.178774	1.823238	VHT	SLY	-3.323632	SP600	Healthcare
ROG	206.130005	274.51001	274.51001	1.068804	0.980653	error	SLY	error	SP600	error
TWI	11.82	15.77	18.889999	0.931088	1.389288	VIS	SLY	-4.514668	SP600	Industrials
PBF	18.780001	30.129999	32.41	0.887657	0.835417	VDE	SLY	-0.123306	SP600	Energy
GO	36.77	36.77	37.82	0.842135	1.191531	VDC	MDYG	-2.28397	SP400	Consumer Defensive
HRB	26.23	28.17	34.959999	0.731411	0.963511	VCR	MDYG	-4.721407	SP400	Consumer Cyclical
AZPN	162.559998	169.220001	191.460007	0.719312	0.677612	VGT	MDYG	-4.954472	SP400	Technology
CEIX	18.93	50.389999	55.259998	0.677246	1.548727	VDE	SLY	-0.123306	SP600	Energy
PSB	165.850006	189.229996	189.830002	0.57675	2.540601	error	MDYG	error	SP400	error
MCK	204.660004	333.440002	339.940002	0.573819	1.048139	VHT	SPY	-3.323632	SP500	Healthcare
GCP	27.780001	32.279999	32.279999	0.502796	1.87078	error	SLY	error	SP600	error
WRB	54.953335	71.269997	71.529999	0.374885	1.220256	VFH	SPY	-4.617891	SP500	Financial Services
FCN	147.380005	167.279999	170.649994	0.359043	0.694756	error	MDYG	error	SP400	error
XOM	64.800003	91.510002	92.919998	0.347413	1.153813	VDE	SPY	-0.123306	SP500	Energy
MANT	92.0	92.0	94.730003	0.320637	2.782348	VGT	SLY	-4.954472	SP600	Technology
SM	24.780001	43.689999	43.689999	0.305033	0.640686	VDE	SLY	-0.123306	SP600	Energy
DINO	39.389999	40.950001	48.290001	0.269915	1.094012	VDE	MDYG	-0.123306	SP400	Energy
PLAB	14.56	20.299999	20.299999	0.264129	2.163783	VGT	SLY	-4.954472	SP600	Technology
MPC	64.839996	91.879997	98.290001	0.209274	1.221452	VDE	SPY	-0.123306	SP500	Energy
LLY	235.850006	314.0	314.0	0.187301	0.967658	VHT	SPY	-3.323632	SP500	Healthcare
VLO	84.949997	111.519997	131.690002	0.182835	1.3872	VDE	SPY	-0.123306	SP500	Energy
APA	24.299999	45.220001	45.27	0.181301	0.999608	VDE	SPY	-0.123306	SP500	Energy
PPC	26.280001	29.700001	30.559999	0.177885	1.275425	VDC	MDYG	-2.28397	SP400	Consumer Defensive
MRO	14.16	27.719999	29.0	0.151107	1.000459	VDE	SPY	-0.123306	SP500	Energy
DVN	31.99	64.980003	73.18	0.148782	1.104104	VDE	SPY	-0.123306	SP500	Energy
UTHR	212.619995	218.380005	218.380005	0.139402	1.481235	VHT	MDYG	-3.323632	SP400	Healthcare
VIVO	27.450001	28.719999	28.719999	0.109712	0.591657	error	SLY	error	SP600	error
ROCC	25.59	42.66	42.66	0.108216	1.213679	VDE	SLY	-0.123306	SP600	Energy
COP	61.779999	107.519997	108.300003	0.10252	0.95084	VDE	SPY	-0.123306	SP500	Energy
OXY	32.52	63.240002	69.169998	0.093736	1.190976	VDE	SPY	-0.123306	SP500	Energy
MGPI	76.68	97.610001	104.0	0.074244	1.204144	error	SLY	error	SP600	error

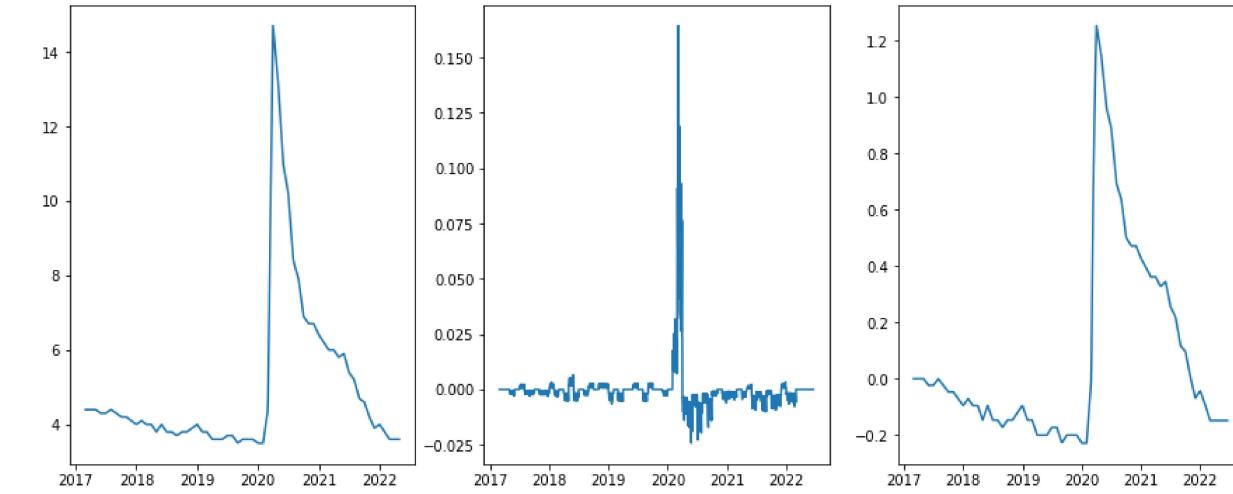
nominal, pct_change, pct_change().cumsum
Market volatility



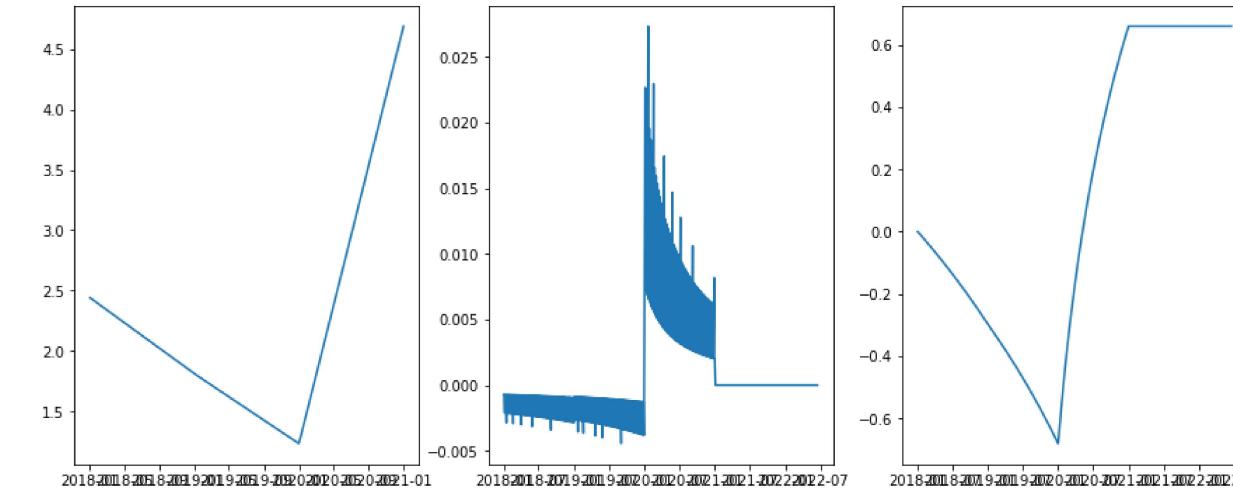
Consumer Confidence

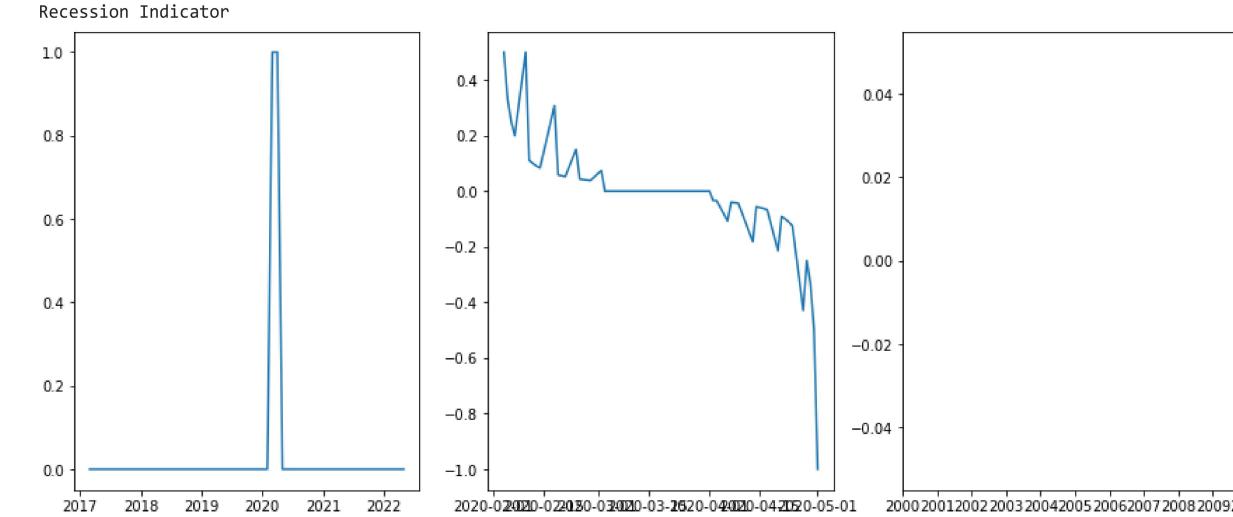
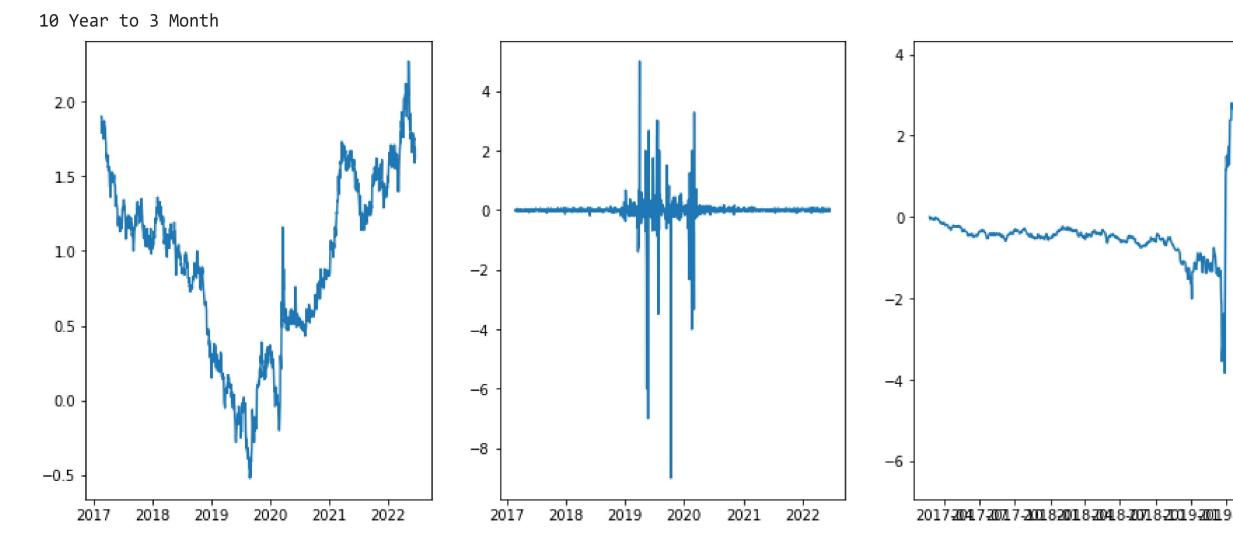
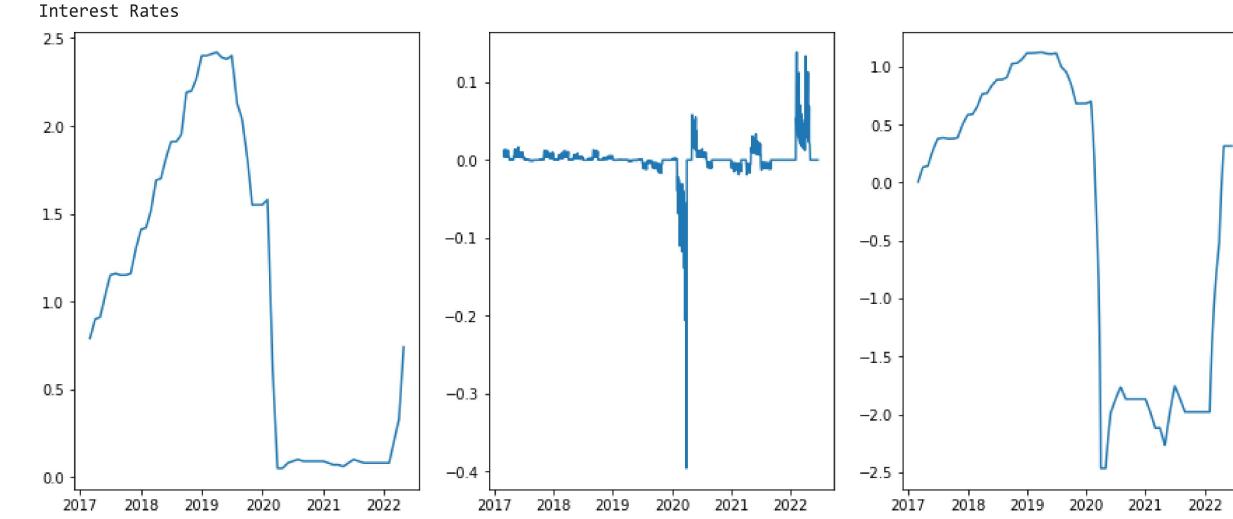


Unemployment



Inflation

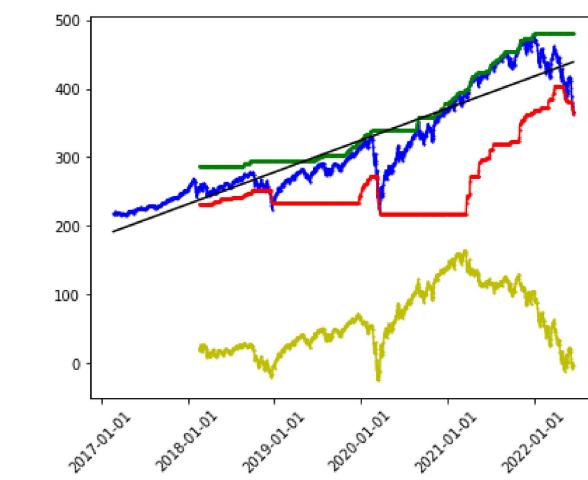
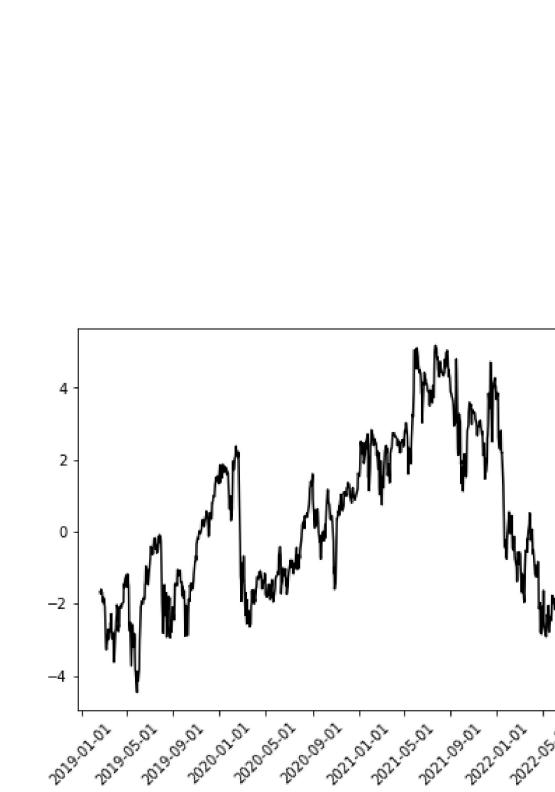
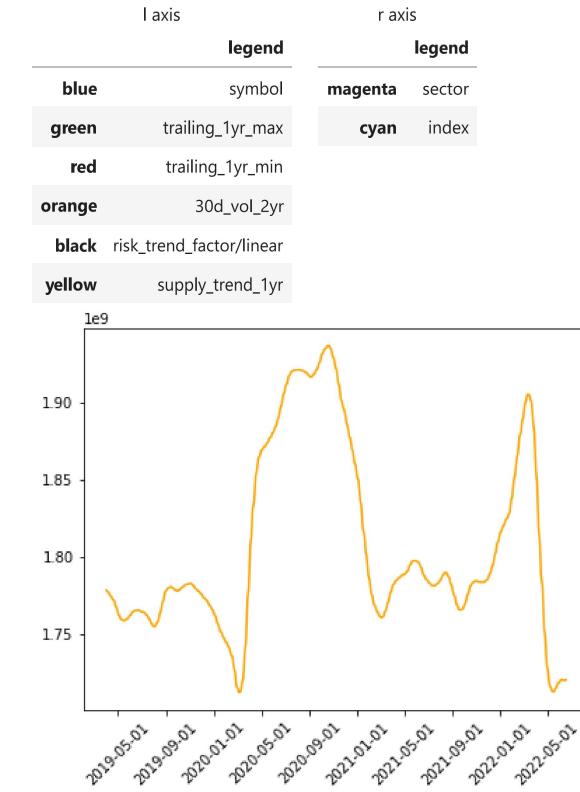




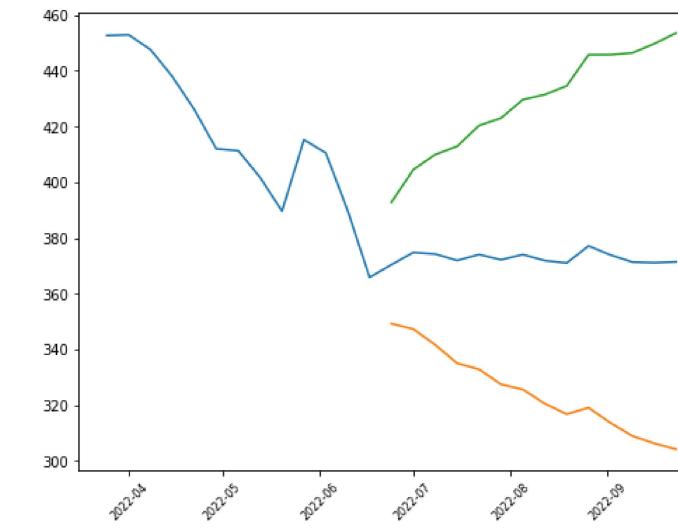
adf < .05 or .01, mean reverting
 Hurst
 > .5 - The time series is mean reverting.
 = .5 - The time series is a Geometric Brownian Motion.
 < .5 - The time series is trending.
 symbol: SPY
 sector: error
 sector: error
 Index: SP500
 vol_30d_2yr: 1719938470.5078125
 Sector 1YMF: -287.8400573730469
 1YMF: -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



sets next 13 weeks
 2022-06-17
 2022-06-24
 inner cv scores:
 best model: ['add', 'add', True]
 best inner cv score, sdev (11 folds): 1596.0716742679447 2394.562465355031
 test cv mean error, stdev (10 folds): 1700.9873719195161 2487.2161758737266
 sell date: 2022-08-26
 expected return: 0.03082891577228148
 discounted return: 0.0004401439534897911
 quarter return: 1.041314997278352



['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

	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
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l axis r axis

legend legend

blue	symbol	magenta	sector
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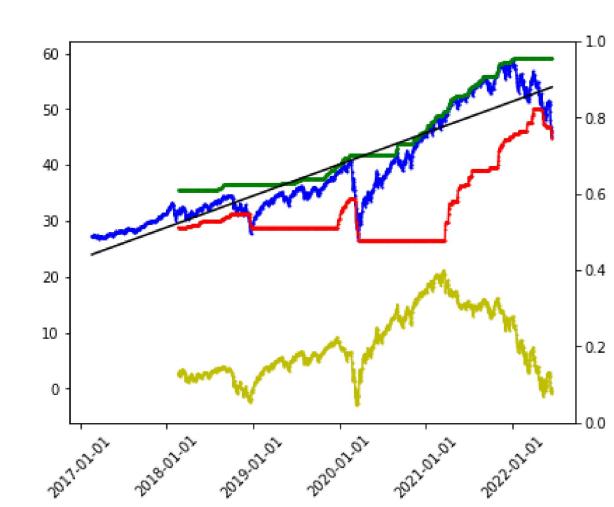
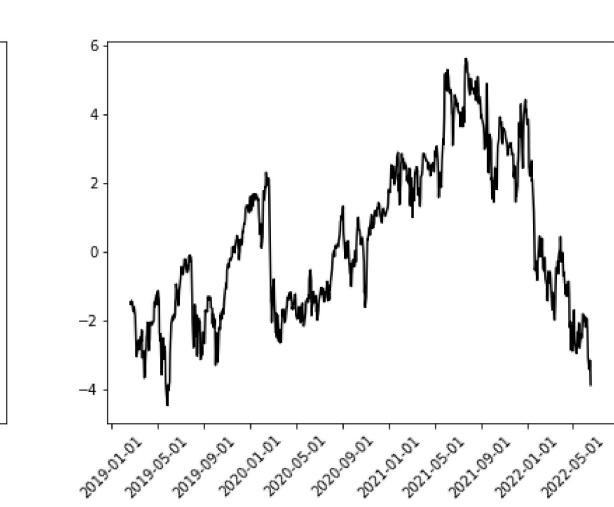
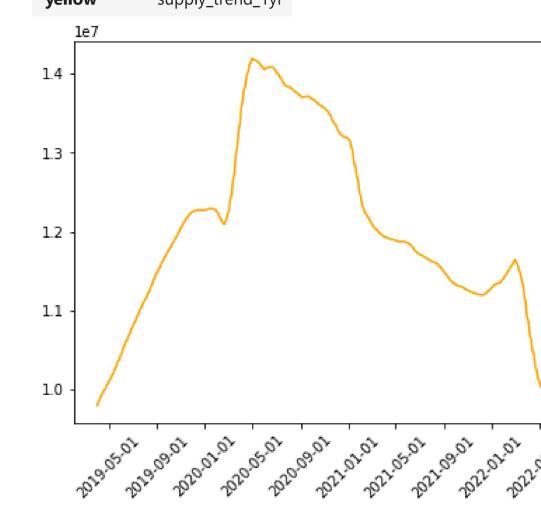
green	trailing_1yr_max	cyan	index
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red	trailing_1yr_min
-----	------------------

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

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

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



ets next 13 weeks

2022-06-17

2022-06-24

inner cv scores:

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

best inner cv score, sdev (11 folds): 26.39443015011375 42.33060200872382

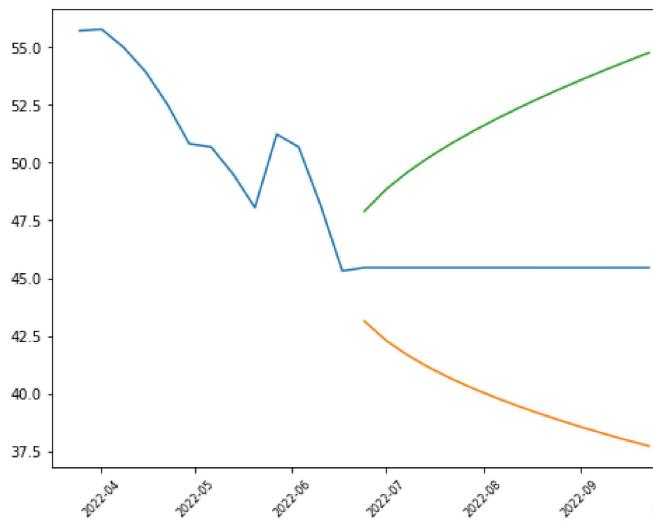
test cv mean error, stdev (10 folds): 28.190469587449293 43.995278330115454

sell date: 2022-06-24

expected return: 0.0031881697120665488

discounted return: 0.0005306571279062311

quarter return: 1.0500182100110305



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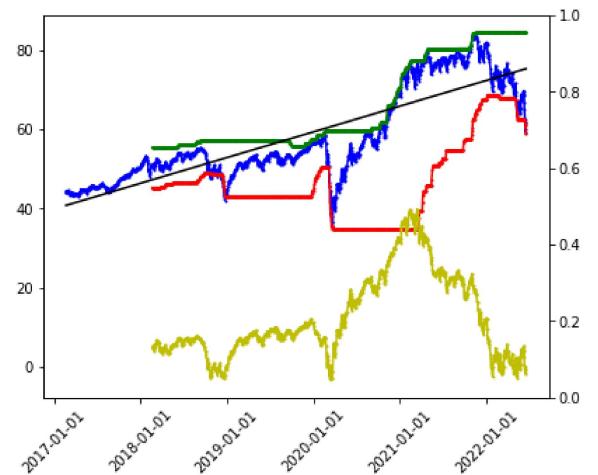
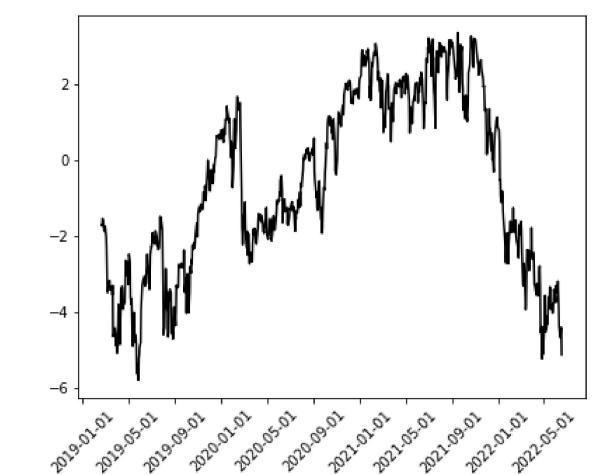
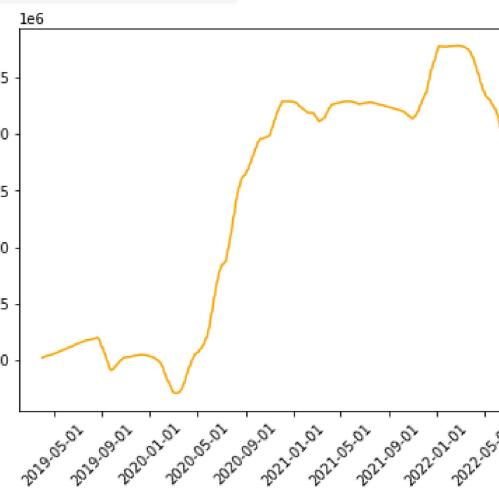
symbol: MDYG
sector: error
sector: error
Index: SP400
vol_30d_2yr: 4938966.40625
Sector 1YMF: -69.05999755859375
1YMF: -69.05999755859375
risk trend factor: -5.134573474205833
Empty DataFrame
Columns: []
Index: [MDYG]

```

	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

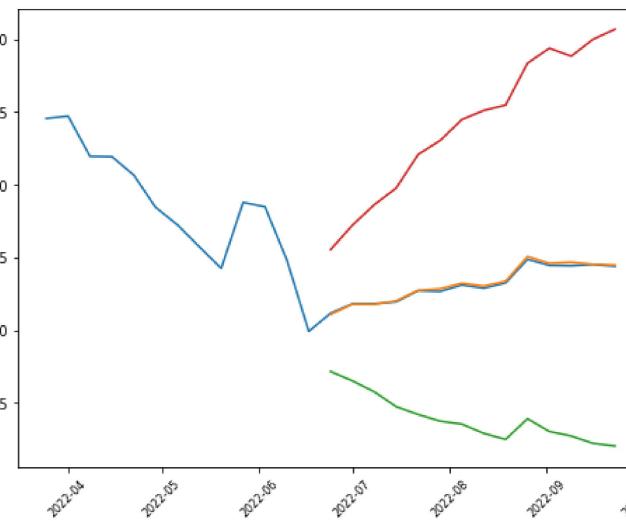
l axis		r axis	
legend		legend	
blue	symbol	magenta	sector
green	trailing_1yr_max	cyan	index
red	trailing_1yr_min		
orange	30d_vol_2yr		
black	risk_trend_factor/linear		
yellow	supply_trend_1yr		



```

ets next 13 weeks
2022-06-17
2022-06-24
inner cv scores:
best model: ['mul', 'mul', False]
best inner cv score, sdev (11 folds): 85.23639772269706 165.19312907861837
test cv mean error, stdev (10 folds): 92.56630018080855 171.54196196197555
sell date: 2022-08-26
expected return: 0.0825665606849999
discounted return: 0.001150439029544259
quarter return: 1.115768089611535

```



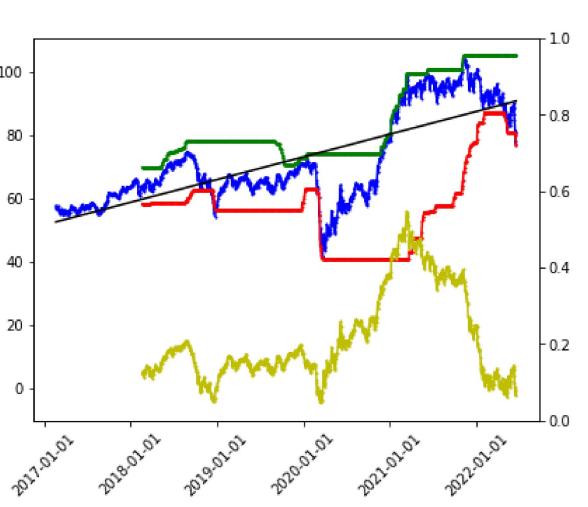
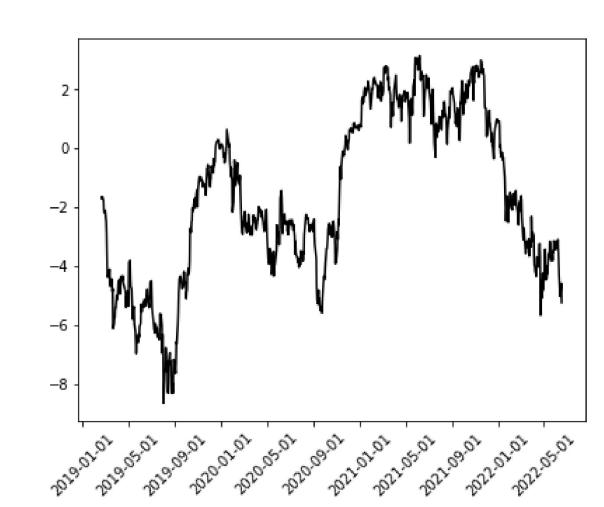
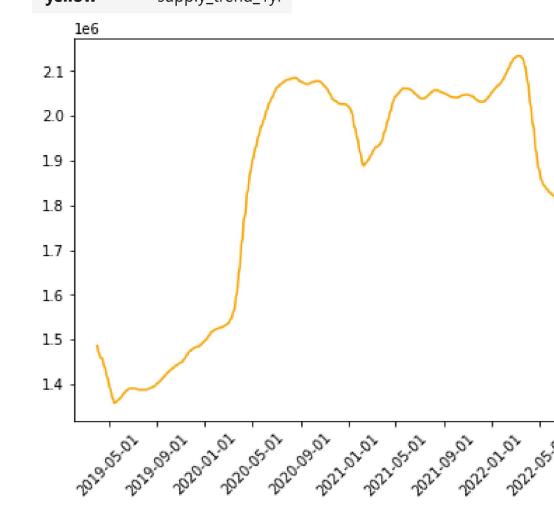
```

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
  
```

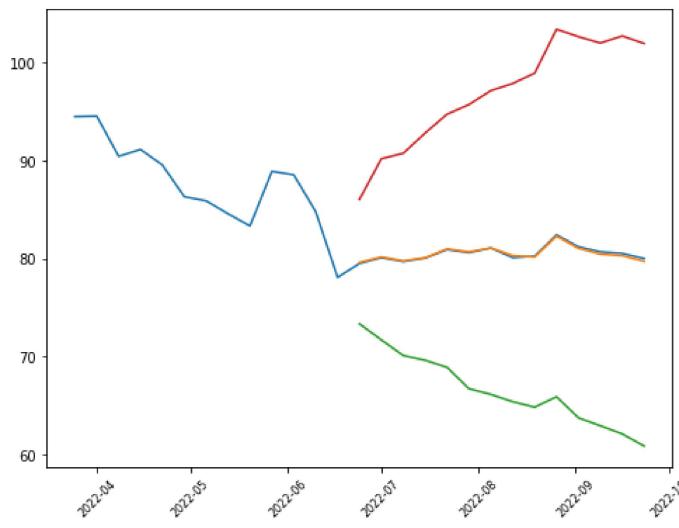
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
SLY	1.23276	78.089996	1808137.109375	0.449524	0.532018	0.51304

	l axis	r axis
	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
2022-06-17
2022-06-24
inner cv scores:
best model: ['mul', None]
best inner cv score, sdev (11 folds): 128.19891503159258 187.56519244084865
test cv mean error, stdev (10 folds): 137.6529340216852 194.20506890768053
sell date: 2022-08-26
expected return: 0.05553216397554563
discounted return: 0.0007835685771302447
quarter return: 1.0747199121283104
  
```



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 90dSDev 90d_lower 90d_upper

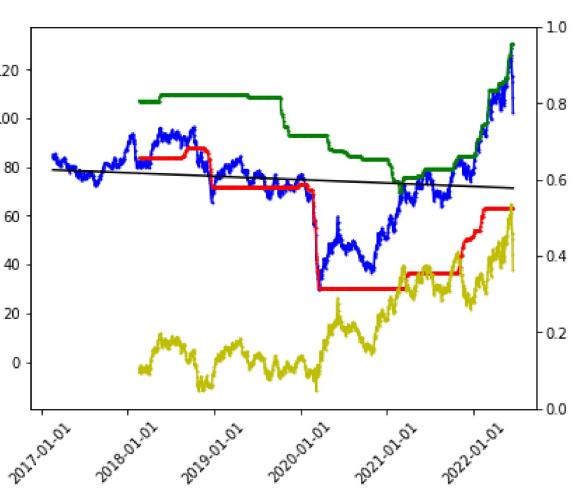
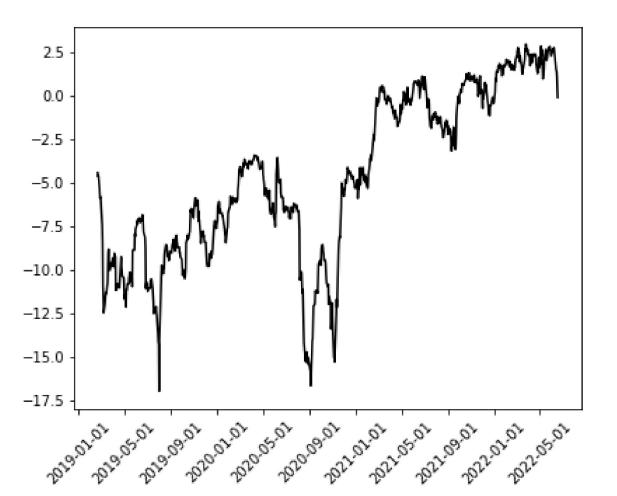
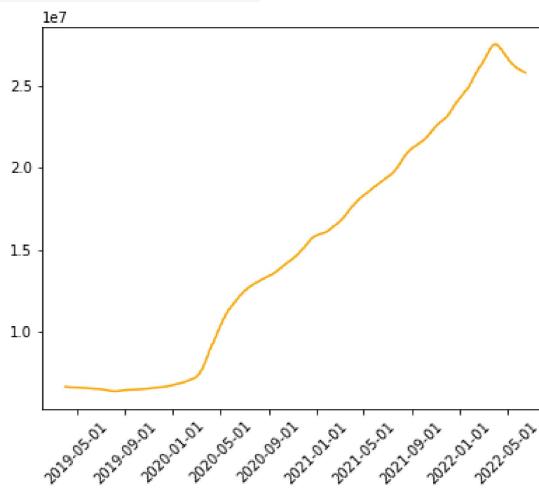
2022-06-17 102.349998 106.909959 119.43381 131.957661 112.539048 6.727104 99.08484 125.993256

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

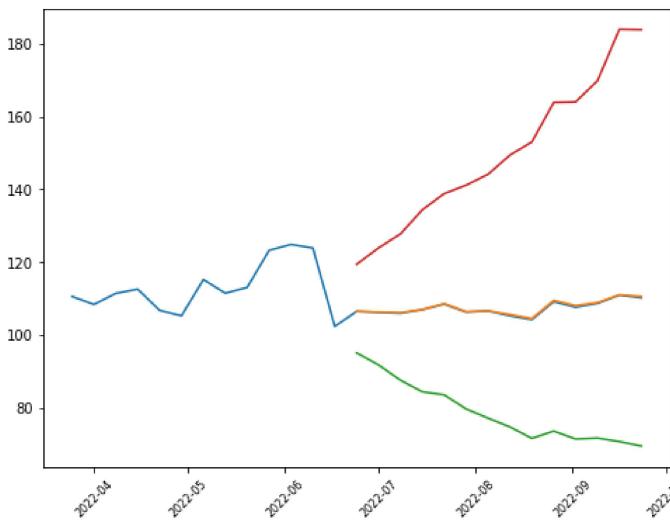
VDE 0.896641 102.349998 25785341.015625 0.70127 0.621023 0.512979

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		



ets next 13 weeks
 2022-06-17
 2022-06-24
 inner cv scores:
 best model: ['mul', 'add', True]
 best inner cv score, sdev (11 folds): 193.7677731049712 221.583932262003
 test cv mean error, stdev (10 folds): 212.28907679936142 224.13379569802842
 sell date: 2022-09-16
 expected return: 0.08375428807508538
 discounted return: 0.0008940795155263359
 quarter return: 1.0856930794222732

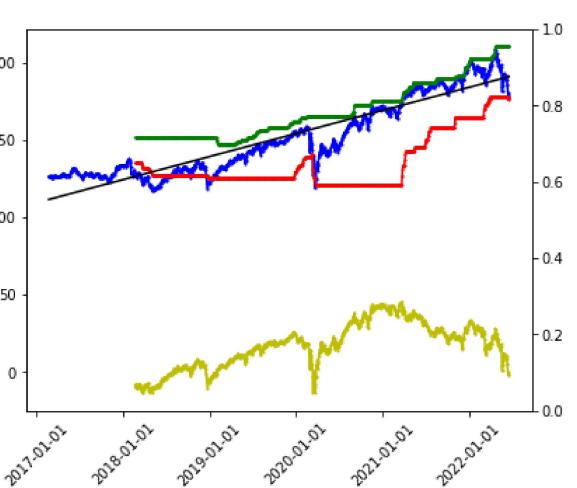
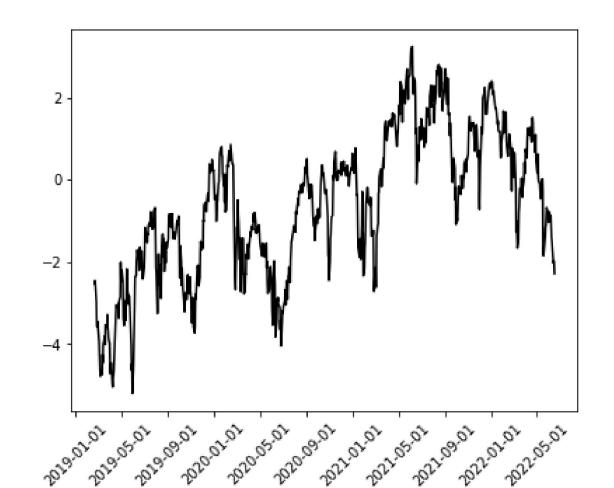
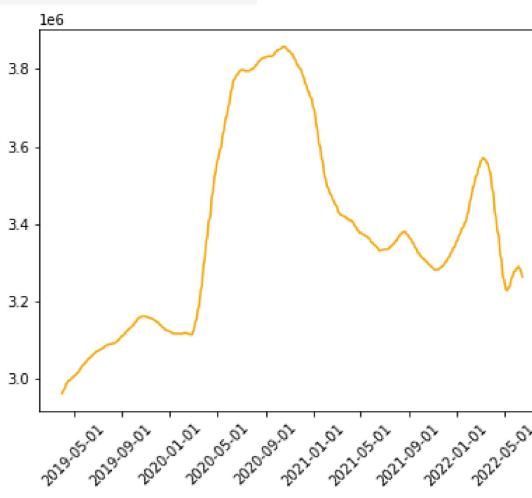


symbol: VDC
 sector: error
 sector: Consumer Defensive
 Index: nan
 vol_30d_2yr: 3264449.609375
 Sector 1YMF: -74.80001831054688
 1YMF: -74.80001831054688
 risk trend factor: -2.283970024749523
 totalAssets
 VDC 8.239956e+09

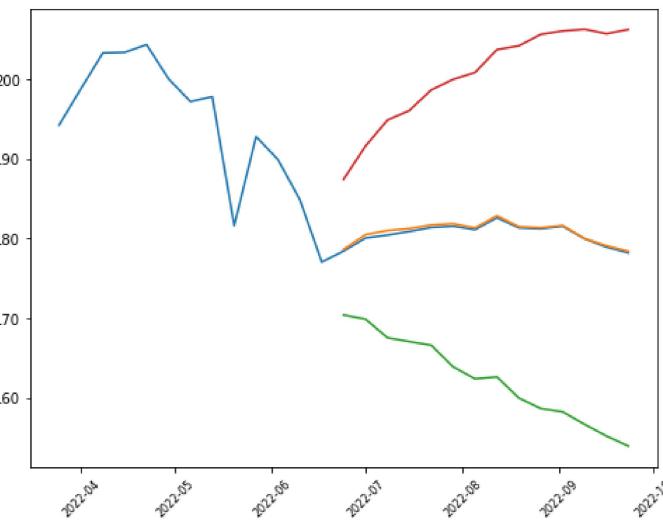
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	177.059998	176.153403	185.845715	195.538026	194.674128	7.920194	178.833739	210.514517

	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
 2022-06-17
 2022-06-24
 inner cv scores:
 best model: ['mul', 'add', False]
 best inner cv score, sdev (11 folds): 191.49793193656535 238.745851082634
 test cv mean error, stdev (10 folds): 195.94534280335694 249.96392830264483
 sell date: 2022-08-12
 expected return: 0.03143809793375523
 discounted return: 0.000562959129874141
 quarter return: 1.05314156831591



```
[ '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: -2.520459194458446  
    totalAssets  
VPU 7.854255e+09
```

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

2022-06-17 141.440002 142.694749 156.469524 170.244299 158.564286 5.736683 147.09092 170.0376

volume_factor latest_p vol_30d_2yr pct_2yr adf hurs

VPU 1.250581 141.440002 5031661.71875 0.451674 0.569436 0.290073

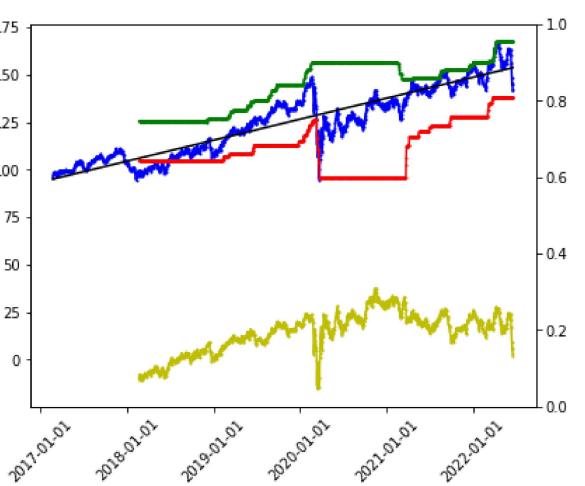
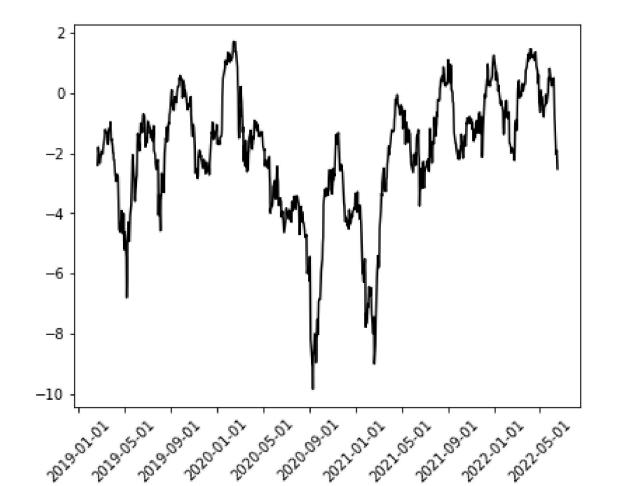
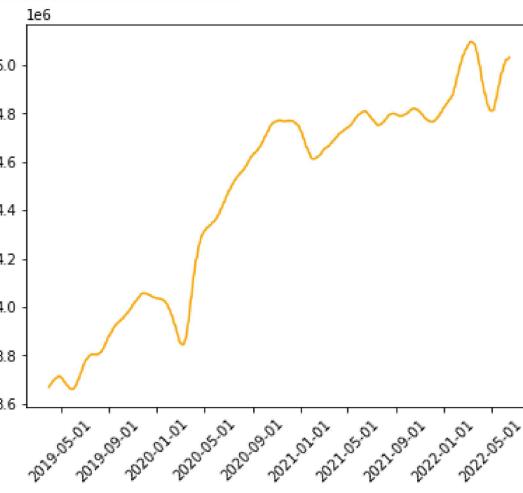
legend **legend**

blue symbol **magenta** sector

green trailing 1yr max

red trailing 1yr min

orange 30d vol 2yr



ets next 13 weeks

2022-06-17

2022-06-24

inner cv scores:
best model: [Load

best inner cv score sdev (11 fo

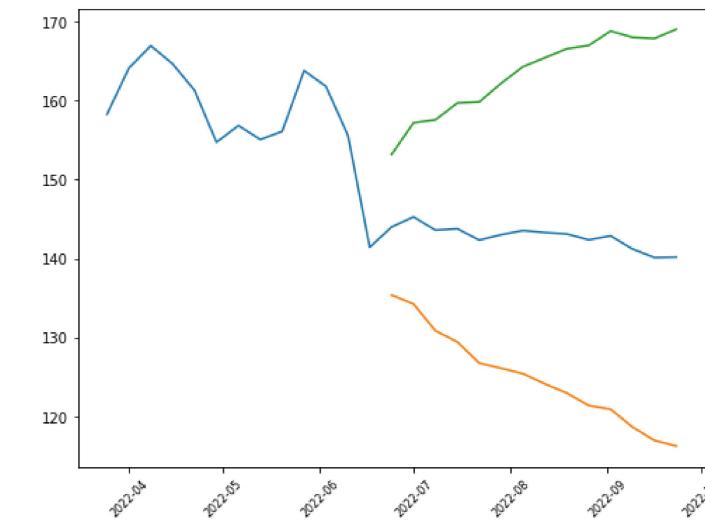
best inner cv score, sdev (11 folds): 259.9034906540192 631.2667178516772
test cv mean error, stdev (10 folds): 285.0033235881872 656.8252840066117

sell date: 2

expected return: 0.02712915057011312

discounted return: 0.0020611734744100385

quarter return: 1.2085639054177761

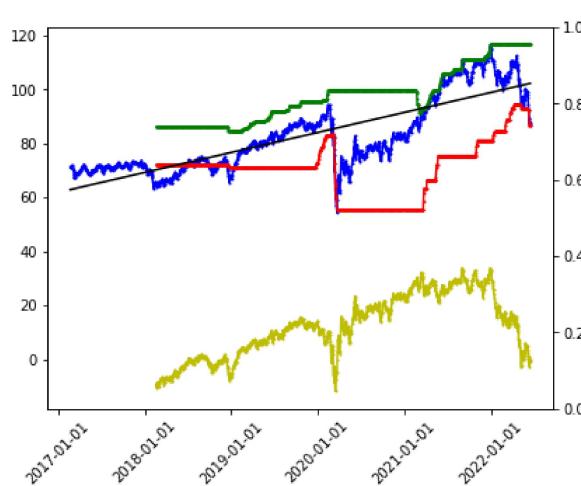
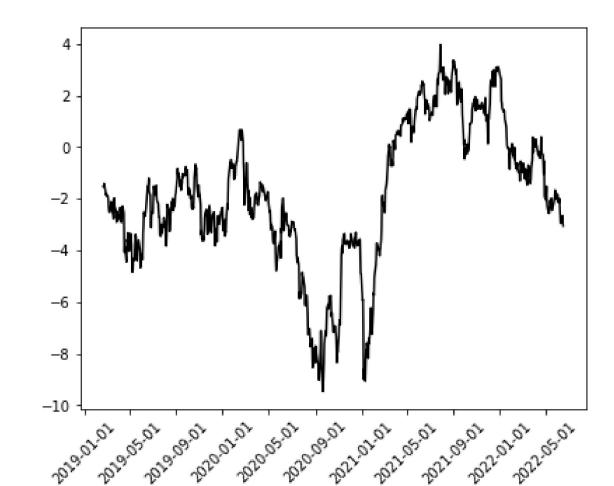
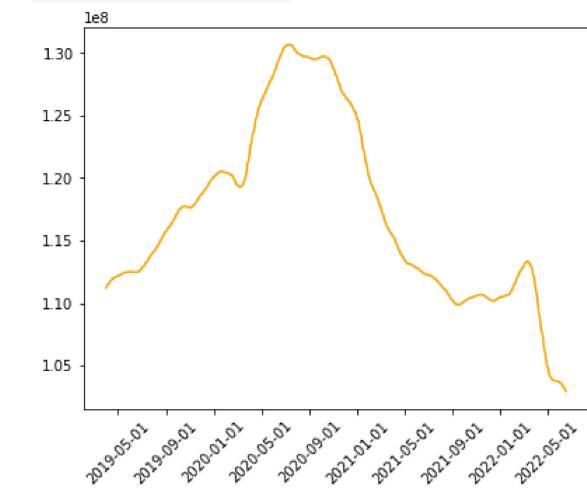


symbol: VNY
 sector: error
 sector: Real Estate
 Index: nan
 vol_30d_2yr: 102932828.515625
 Sector 1YMF: -76.09000396728516
 1YMF: -76.09000396728516
 risk trend factor: -3.053370235265123
 totalAssets
 VNQ 7.839537e+10

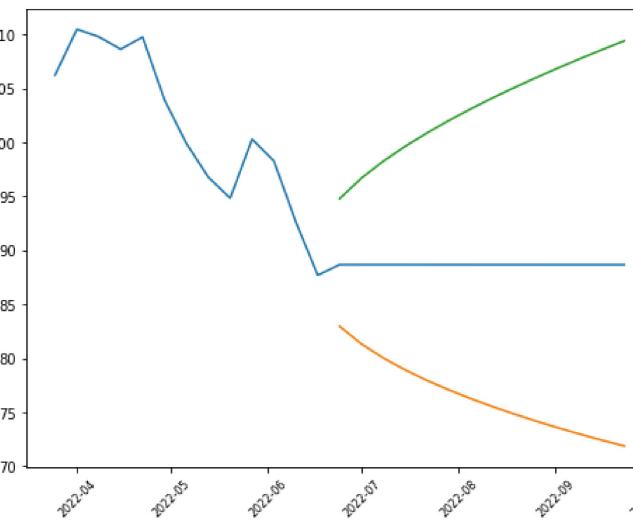
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	87.699997	86.580768	94.91381	103.246851	101.788572	7.189885	87.408801	116.168343

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VNQ	1.231534	87.699997	102932828.515625	0.296727	0.445676

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
 2022-06-17
 2022-06-24
 inner cv scores:
 best model: [None, 'add', True]
 best inner cv score, stdev (11 folds): 153.2875079647354 322.629599094974
 test cv mean error, stdev (10 folds): 167.13348045205254 335.2462185851425
 sell date: 2022-06-24
 expected return: 0.0111910288254991
 discounted return: 0.0018565333214504154
 quarter return: 1.186066906548252



['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	90dSDDev	90d_lower	90d_upper
--	-----------	---------	----------	---------	--------	----------	-----------	-----------

2022-06-17	162.80003	163.360294	181.546031	199.731768	187.277779	8.558355	170.161068	204.394489
------------	-----------	------------	------------	------------	------------	----------	------------	------------

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

VAW	1.040096	162.80003	2683599.21875	0.553392	0.650248	0.42433
-----	----------	-----------	---------------	----------	----------	---------

l axis r axis

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

blue	symbol
------	--------

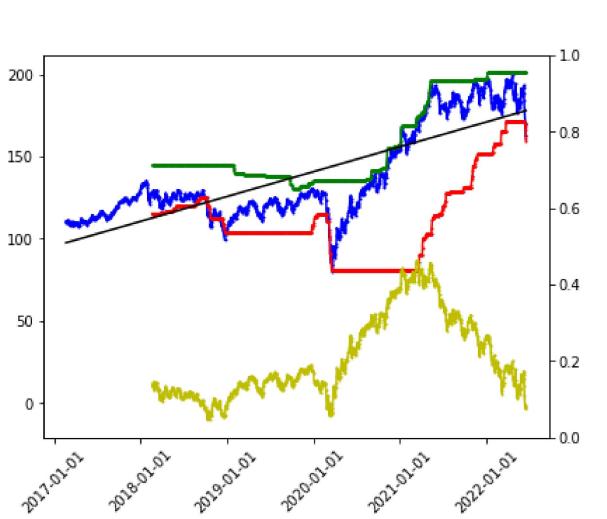
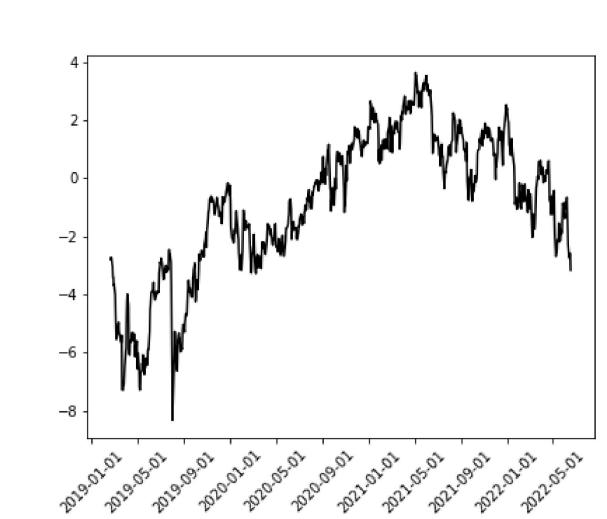
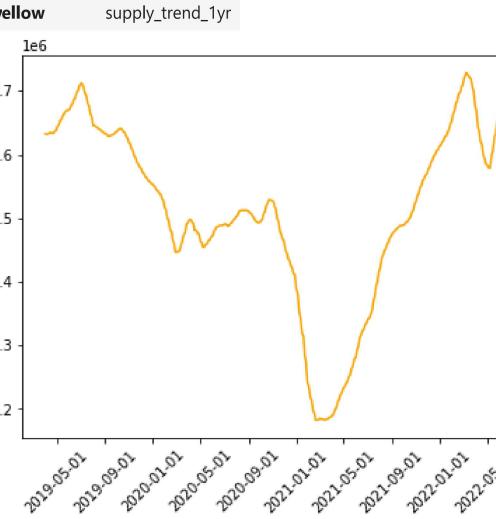
green	trailing_1yr_max
-------	------------------

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

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

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

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



ets next 13 weeks

2022-06-17

2022-06-24

inner cv scores:

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

best inner cv score, sdev (11 folds): 287.23751313112285 405.64150284452705

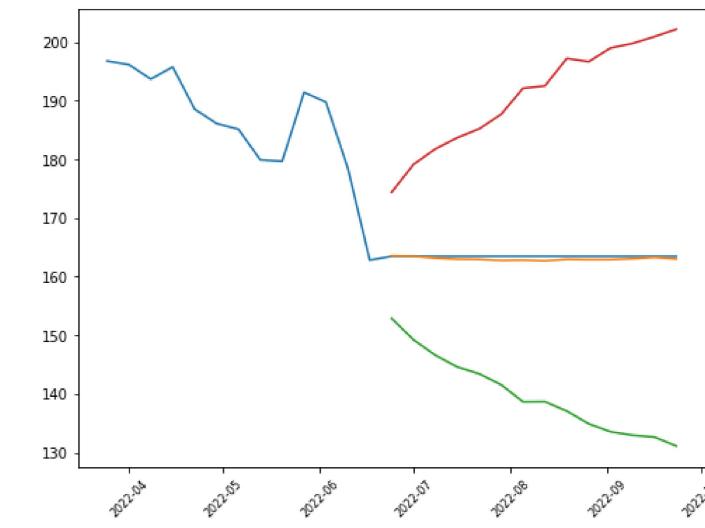
test cv mean error, stdev (10 folds): 311.01948369562194 418.06474197616075

sell date: 2022-06-24

expected return: 0.00408942530517939

discounted return: 0.0006804124310113568

quarter return: 1.0645760631024417

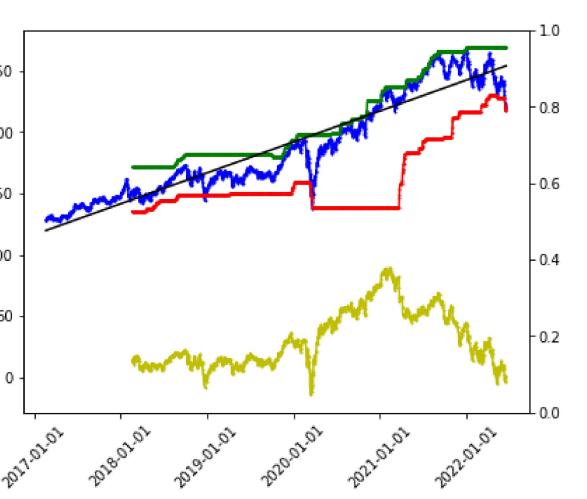
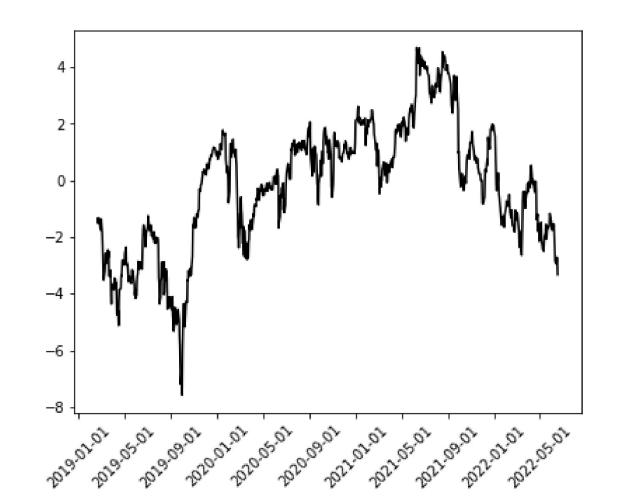
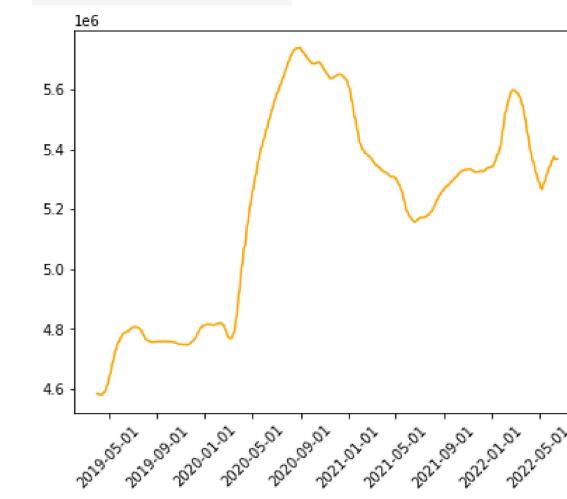


```
[ 'options', ('2022-08-19',) ]
symbol: VHT
sector: error
sector: Healthcare
Index: nan
vol_30d_2yr: 5367987.5
Sector 1YMF: -122.20997619628906
1YMF: -122.20997619628906
risk trend factor: -3.3236323632363236
    totalAssets trailingPE
VHT 1.866525e+10 4.748669
```

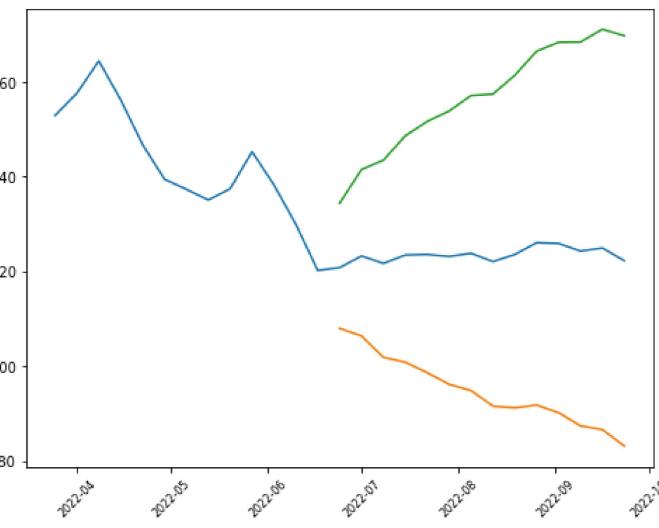
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	220.210007	218.770447	234.353333	249.93622	243.78492	11.544258	220.696404	266.873435

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

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
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', None]
best inner cv score, sdev (11 folds): 387.9568238844809 524.4913709408372
test cv mean error, stdev (10 folds): 393.7137244490932 549.759724911708
sell date: 2022-08-26
expected return: 0.026686021891953758
discounted return: 0.00038175633782833174
quarter return: 1.0357386884983228



symbol: VIS
 sector: error
 sector: Industrials
 Index: nan
 vol_30d_2yr: 3372254.1015625
 Sector 1YMF: -141.5800018310547
 1YMF: -141.5800018310547
 risk trend factor: -4.514668337867341
 Empty DataFrame
 Columns: []
 Index: [VIS]

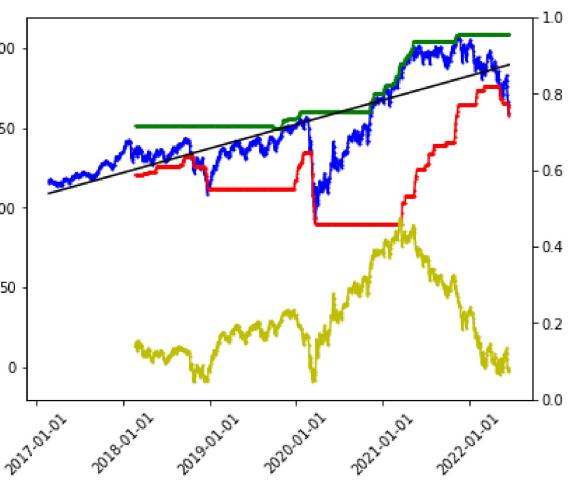
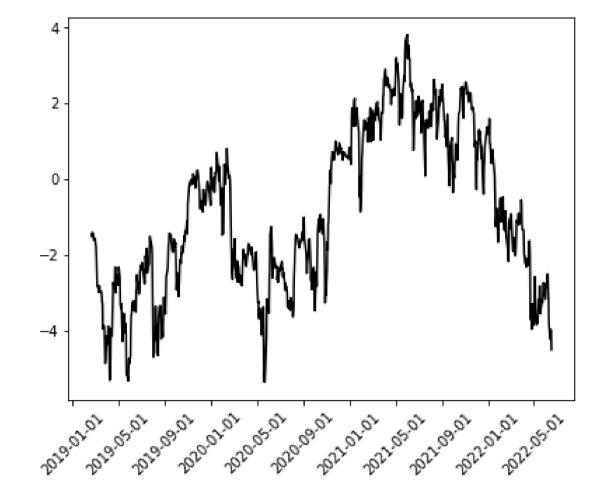
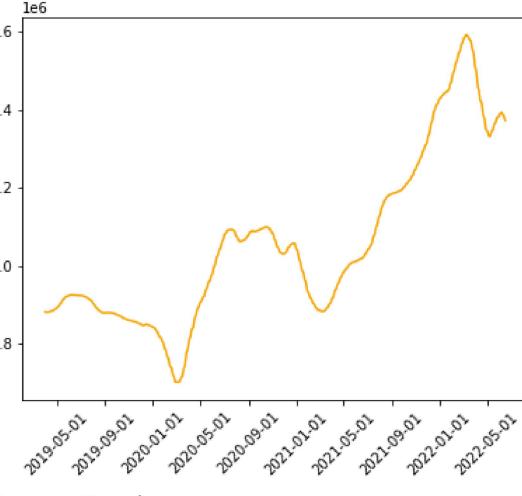
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDDev 90d_lower 90d_upper

2022-06-17 159.809998 159.424409 172.598254 185.772099 181.362857 9.892736 161.577386 201.148329

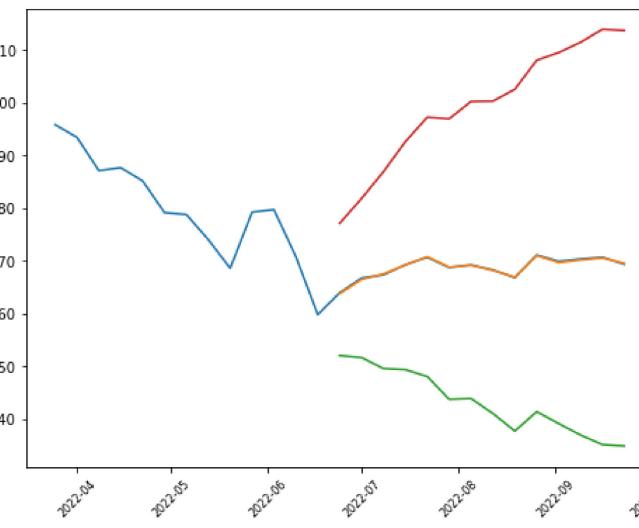
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
--	---------------	----------	-------------	---------	-----	-------

VIS 0.869685 159.809998 3372254.101562 0.42518 0.484643 0.470479

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



ets next 13 weeks
 2022-06-17
 2022-06-24
 inner cv scores:
 best model: ['mul', 'mul', False]
 best inner cv score, sdev (11 folds): 486.58909178923807 806.4213628968904
 test cv mean error, stdev (10 folds): 522.7693321375955 837.2262819272948
 sell date: 2022-08-26
 expected return: 0.07072829370193244
 discounted return: 0.0009909118646891368
 quarter return: 1.0953990802028737

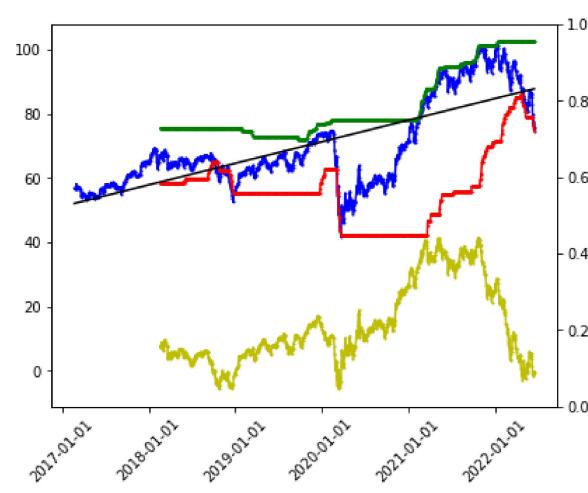
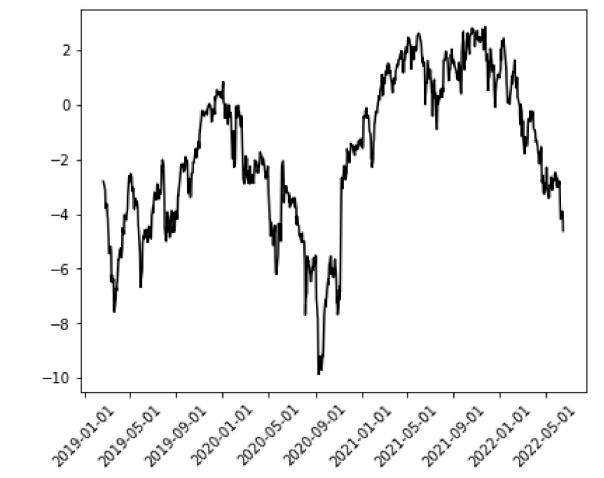
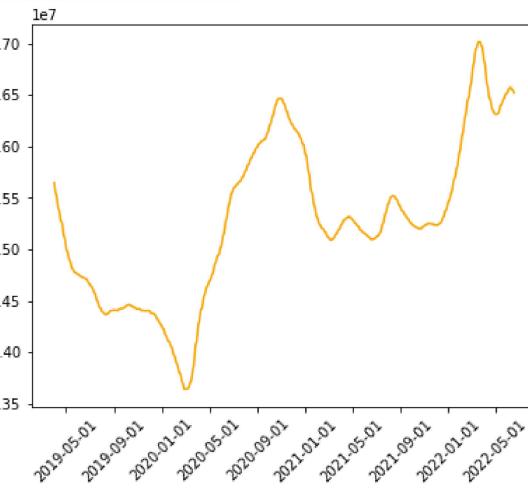


```
[ 'options', ('2022-08-19',) ]
symbol: VFH
sector: error
sector: Financial Services
Index: nan
vol_30d_2yr: 16520124.609375
Sector 1YMF: -72.2699966430664
1YMF: -72.2699966430664
risk trend factor: -4.617890709055871
    totalAssets
VFH 1.046217e+10
```

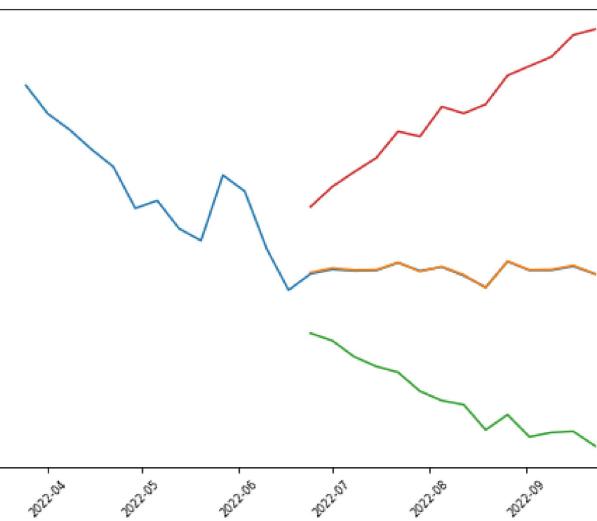
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	75.849998	74.907534	82.472858	90.038182	86.832222	5.55532	75.721582	97.942862

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
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', 'mul', True]
best inner cv score, sdev (11 folds): 103.91259097266037 124.62466110347374
test cv mean error, stdev (10 folds): 110.84484082160967 128.66951616118322
sell date: 2022-08-26
expected return: 0.03734246958725943
discounted return: 0.000531476329203473
quarter return: 1.0500973072034847
```



```
[ '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: -4.7214069790155  
totalAssets  
VCR 6.015592e+09
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_u
2022-06-17	225.869995	218.39857	242.946031	267.493493	271.133333	28.125894	214.881544	327.38

	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	h
VCR	1.292819	225.869995	2596418.164062	0.205768	0.641228	0.473

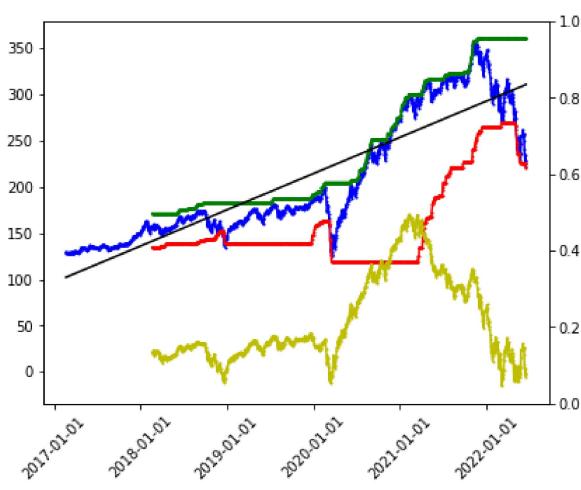
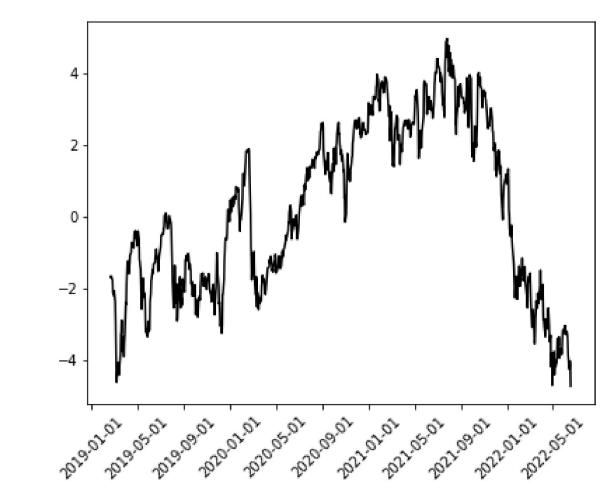
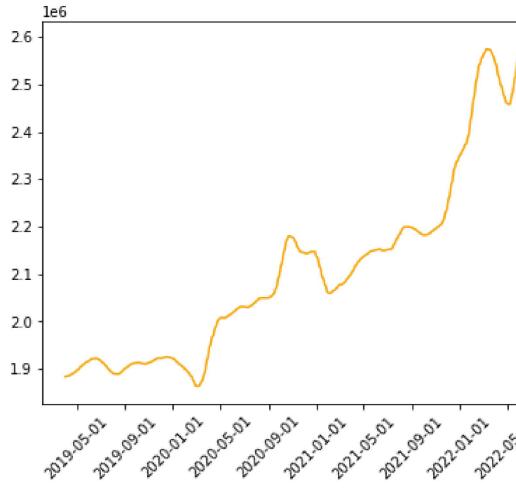
	l axis	r axis
	legend	legend
blue	symbol	magenta
	sec	sec

green trailing_1yr_max

red trailing_1yr_min

orange 30d_vol_2yr

black risk_trend_factor/linear



ets next 13 weeks

2022-06-17

2022-06-24

inner cv scores:
best model: [1-1]

best model: [‘ad

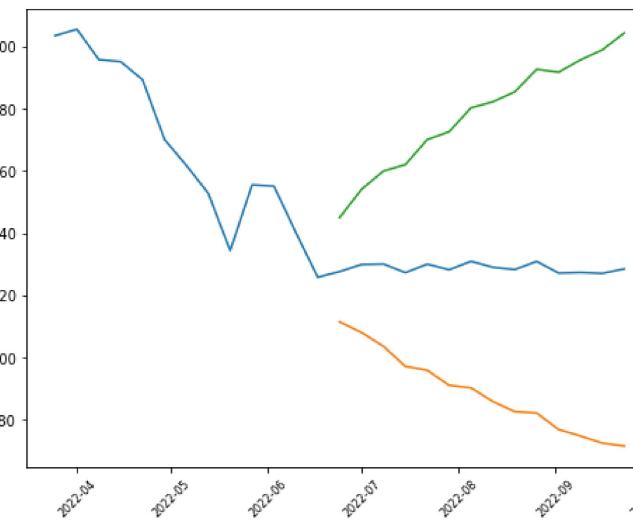
best inner cv score, sdev (11 folds)
test cv mean error, std dev (10 folds)

test cv mean error, stdev (10 folds): 13
sell date: 2022-08-05

expected return: 0.022549355093616153

discounted return: 0.00046466785822185

quarter return: 1.0436659989392758



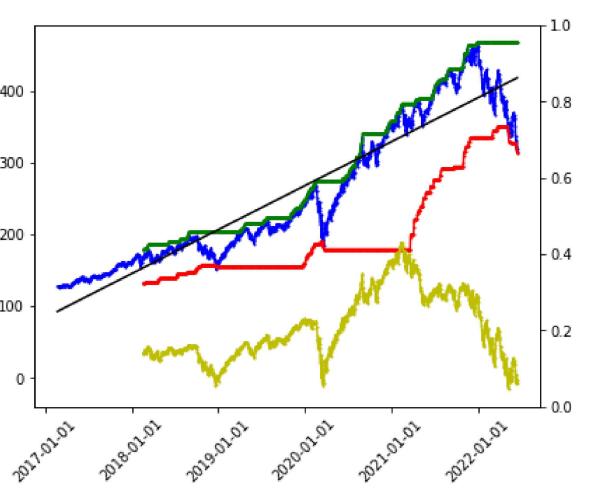
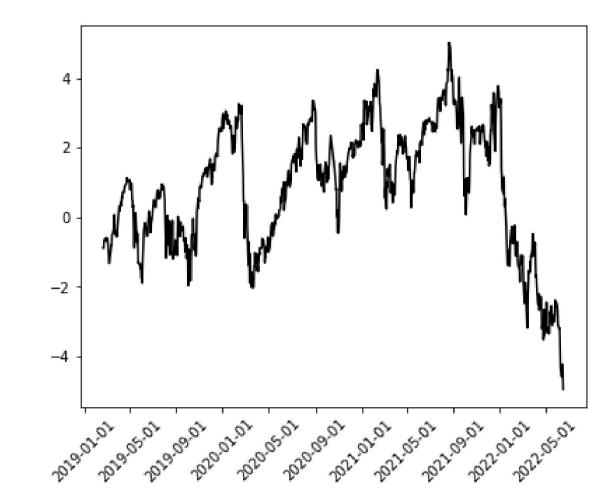
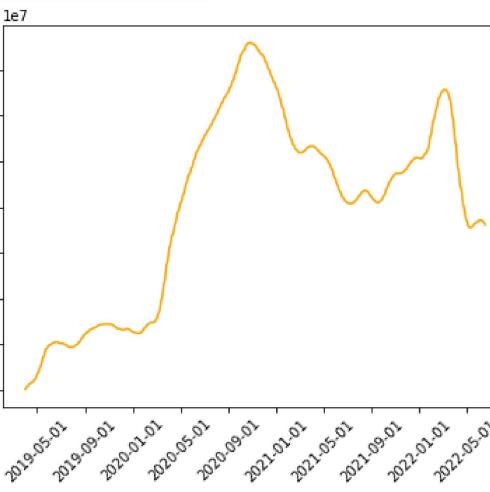
symbol: VGT
 sector: error
 sector: Technology
 Index: nan
 vol_30d_2yr: 14308852.5390625
 Sector 1YMF: -363.4599914550781
 1YMF: -363.4599914550781
 risk trend factor: -4.954471974241429
 totalAssets
 VGT 5.138536e+10

	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

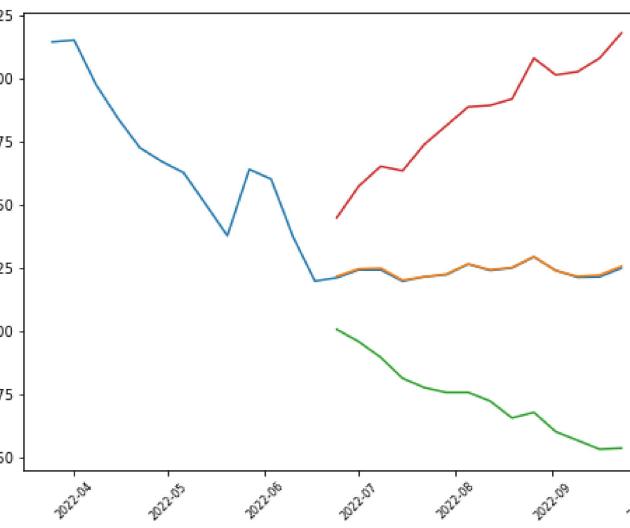
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VGT	1.152846	319.809998	14308852.539062	0.262275	0.685573

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
 2022-06-17
 2022-06-24
 inner cv scores:
 best model: ['add', 'mul', True]
 best inner cv score, sdev (11 folds): 1350.1937524747425 1233.3593118738447
 test cv mean error, stdev (10 folds): 1427.6803934086076 1267.7723568829572
 sell date: 2022-08-26
 expected return: 0.029917728102310377
 discounted return: 0.00042732205030437953
 quarter return: 1.0400879025143952

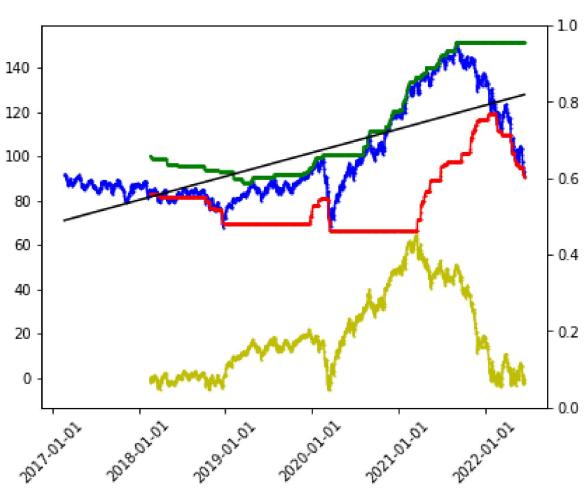
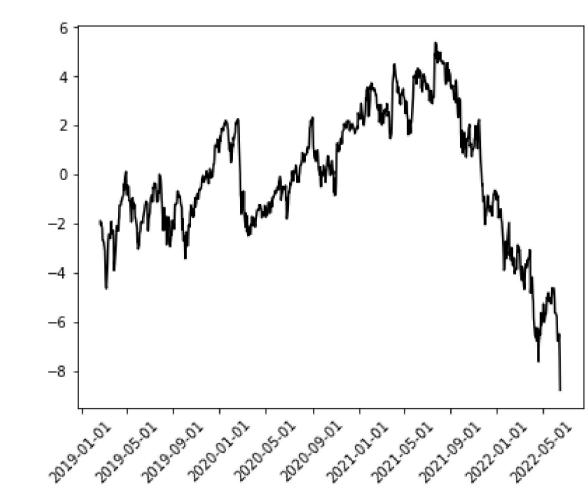
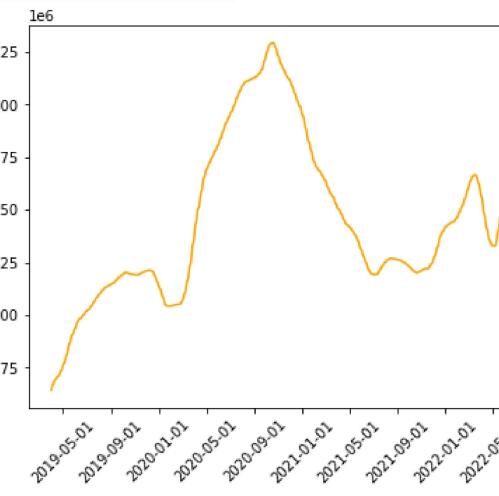


```
[ 'options', ('2022-08-19',) ]
symbol: VOX
sector: error
sector: Communication Services
Index: nan
vol_30d_2yr: 4644931.8359375
Sector 1YMF: -166.010009765625
1YMF: -166.010009765625
risk trend factor: -8.783597691159713
Empty DataFrame
Columns: []
Index: [VOX]
```

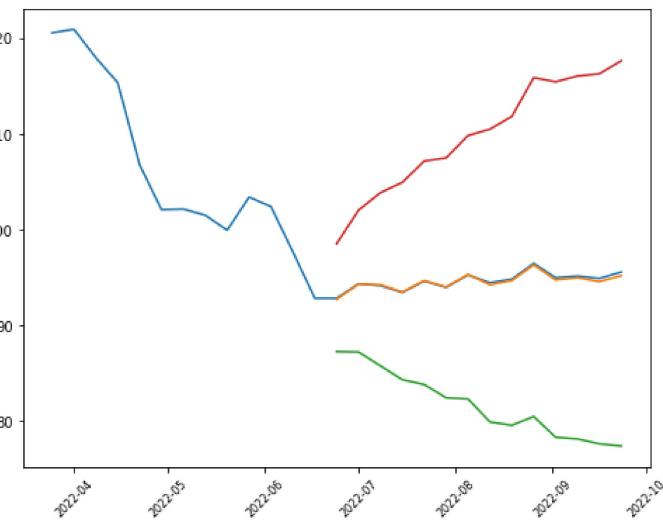
	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	92.860001	91.464788	99.415079	107.365371	107.439841	9.28909	88.861661	126.018022

	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
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
2022-06-17
2022-06-24
inner cv scores:
best model: ['mul', 'mul', True]
best inner cv score, sdev (11 folds): 132.73275261524898 122.26498789018537
test cv mean error, stdev (10 folds): 142.3400341352579 124.21071407836422
sell date: 2022-08-26
expected return: 0.03913797468058946
discounted return: 0.0005565533538955947
quarter return: 1.0525214487932193
```



[

'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 90dSDev 90d_lower 90d_upper

2022-06-17 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

ACC 2.134689 64.230003 27009982.03125 0.97101 0.978004 0.420279

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: -76.09000396728516

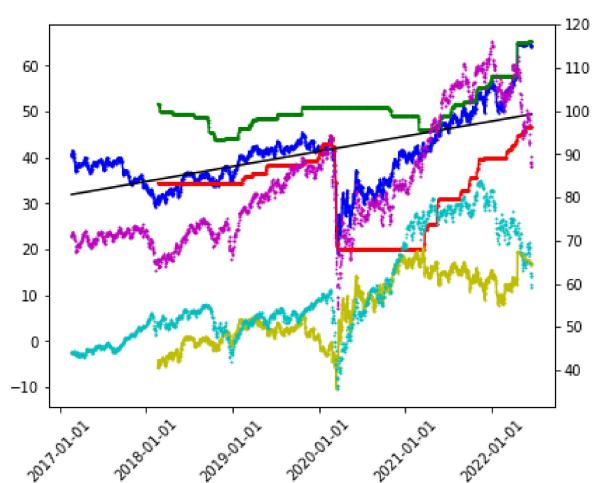
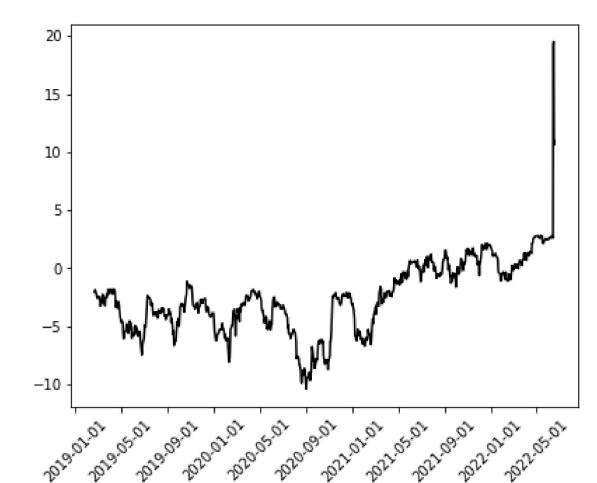
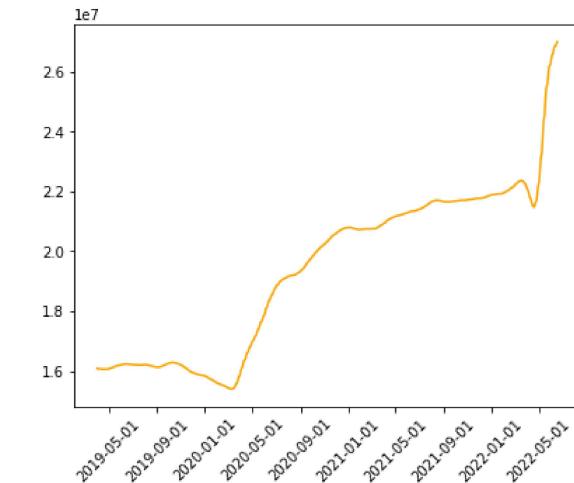
Sector Volume Factor: 1.2315342134094496

Sector Risk Trend Factor: -3.053370235265123

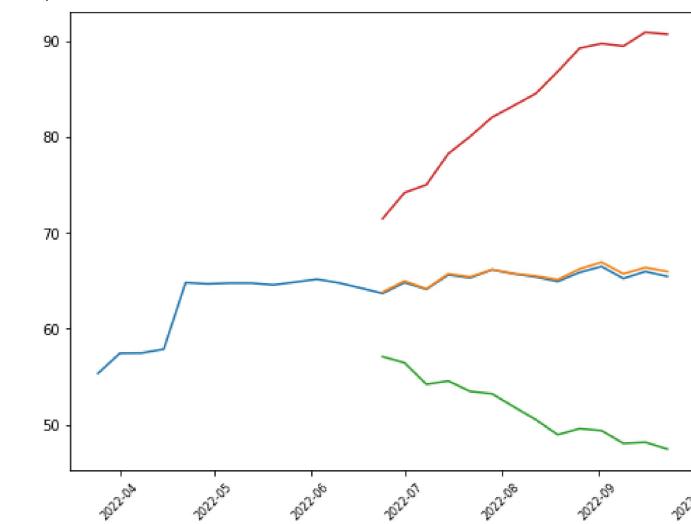
Index 1YMF: -69.05999755859375

Index Volume Factor: 0.5765983741853883

Index Risk Trend Factor: -5.134573474205833



ets next 13 weeks
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', 'mul', False]
best inner cv score, sdev (11 folds): 60.642639735705025 138.48010206763325
test cv mean error, stdev (10 folds): 66.26512803918772 144.03706611000356
sell date: 2022-09-02
expected return: 0.03505054443547022
discounted return: 0.0004533956570731412
quarter return: 1.0425847300311661



	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	\
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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]

	Revenue	Earnings	
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Quarter			
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2Q2021	208521000	-9402000	
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3Q2021	228877000	-11439000	
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4Q2021	272289000	40712000	
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1Q2022	273746000	39183000]	
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	2022-03-31	2021-12-31	2021-09-30	\
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['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

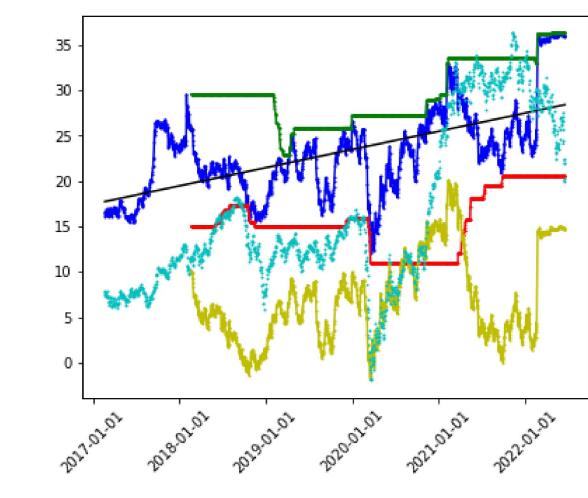
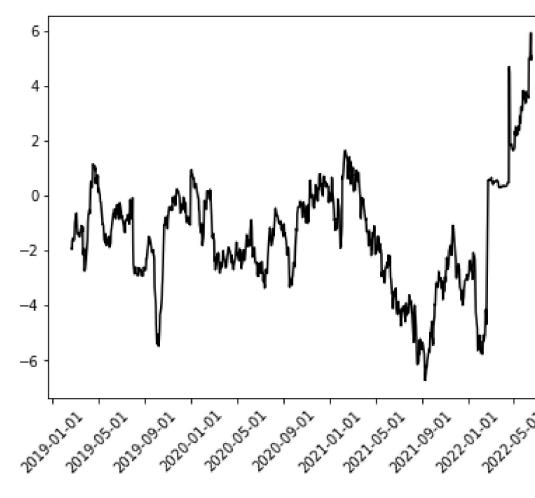
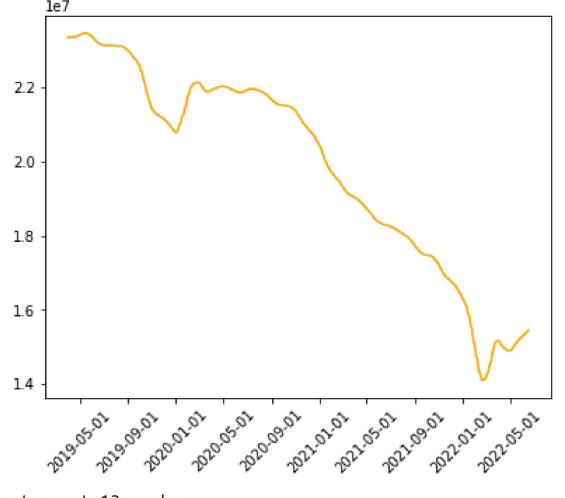
2022-06-17 35.939999 35.942037 36.098889 36.25574 35.883651 0.243988 35.395675 36.371626

volume_factor latest_p vol_30d_2yr pct_2yr adf hurst

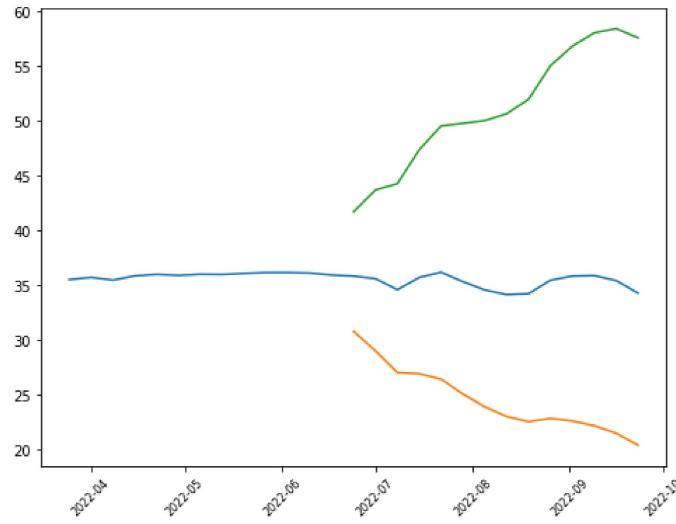
MTOR 1.664475 35.939999 15456103.320312 0.980154 0.319063 0.43585

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
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', 'add', True]
best inner cv score, sdev (11 folds): 25.6577956661307 21.94288210655703
test cv mean error, stdev (10 folds): 25.48458221566256 23.006729134494705
sell date: 2022-07-22
expected return: 0.007027295240149348
discounted return: 0.0002059835314216496
quarter return: 1.0191291961681108



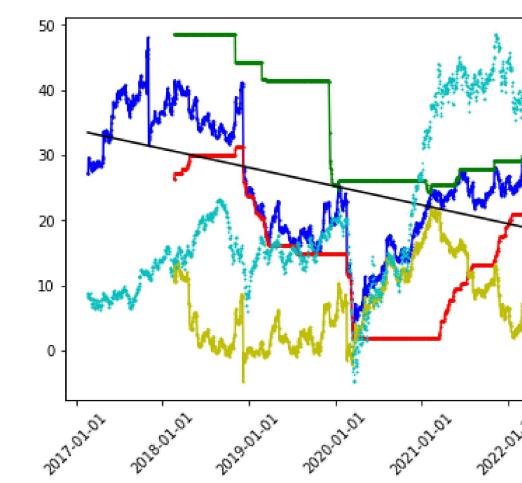
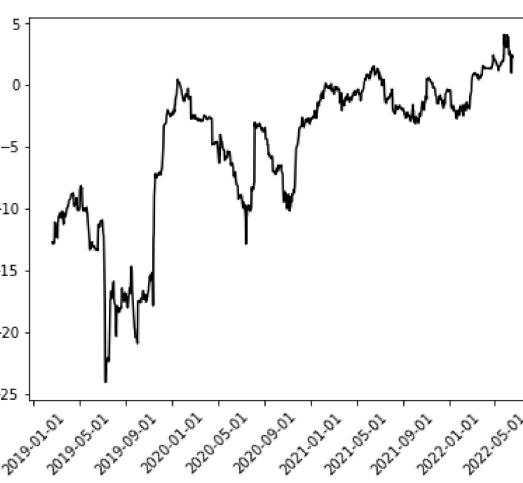
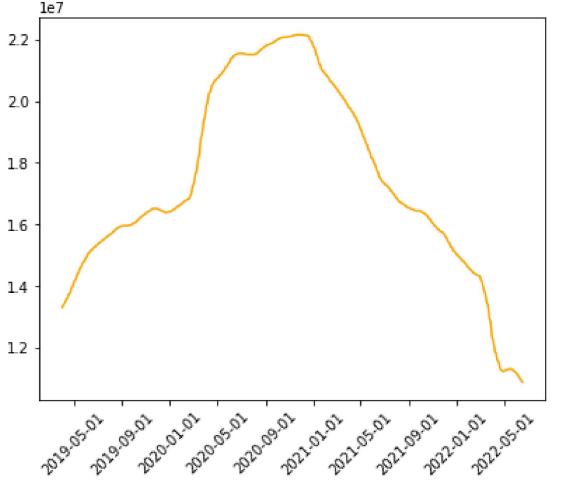
['options', ('2022-08-19',)]
symbol: TVTY
sector: error
sector: error
Index: SP600
vol_30d_2yr: 10900973.046875
Sector 1YMF: 2.7400035858154297
1YMF: 2.7400035858154297
risk trend factor: 2.3418794362082624
Empty DataFrame
Columns: []
Index: [TVTY]

	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

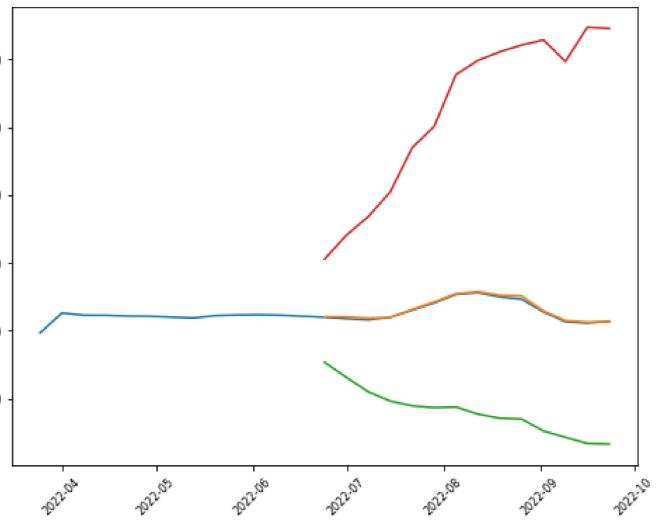
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
TVTY	1.643789	32.130001	10900973.046875	0.966327	0.518794	0.448871

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



sets next 13 weeks
2022-06-17
2022-06-24
inner cv scores:
best model: ['mul', 'add', False]
best inner cv score, sdev (11 folds): 18.832273159328107 14.82782242206309
test cv mean error, stdev (10 folds): 19.95898731265599 15.095907291112304
sell date: 2022-08-12
expected return: 0.1079495624980691
discounted return: 0.0018655755899170678
quarter return: 1.1870521583499438



```
['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	21d bold	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

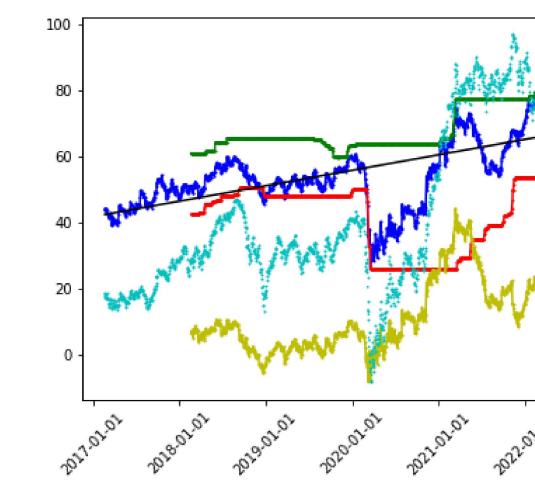
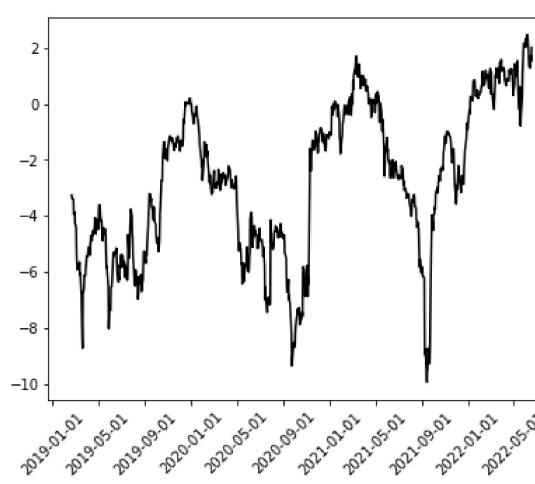
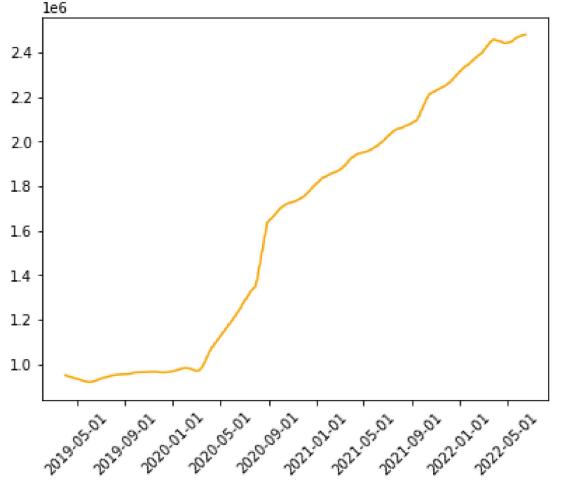
legend legend

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

2022-06-17

2022-06-24

inner cv scores:

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

best inner cv score, sdev (11 folds): 111.50551170140808 87.12429032631042

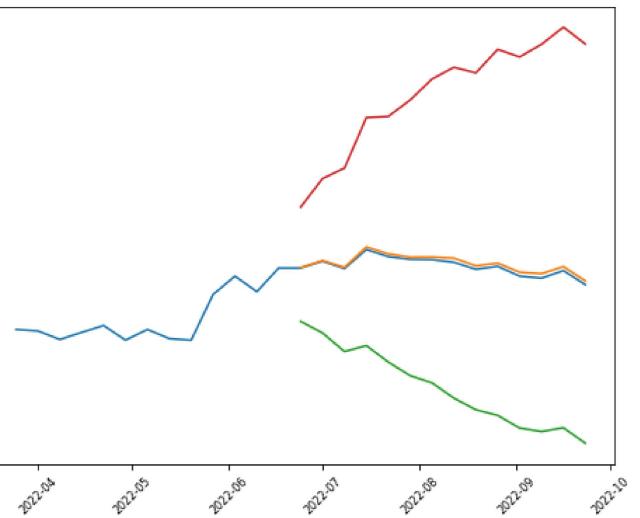
test cv mean error, stdev (10 folds): 118.63569927616723 88.26365129697162

sell date: 2022-07-15

expected return: 0.03529283754210271

discounted return: 0.0012854299586051443

quarter return: 1.1254507409938612



```

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

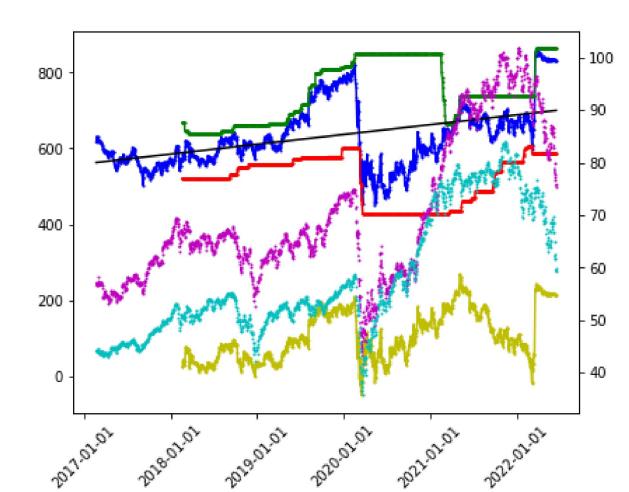
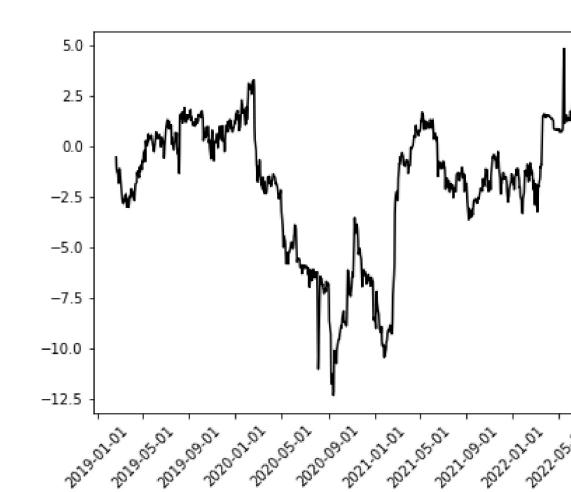
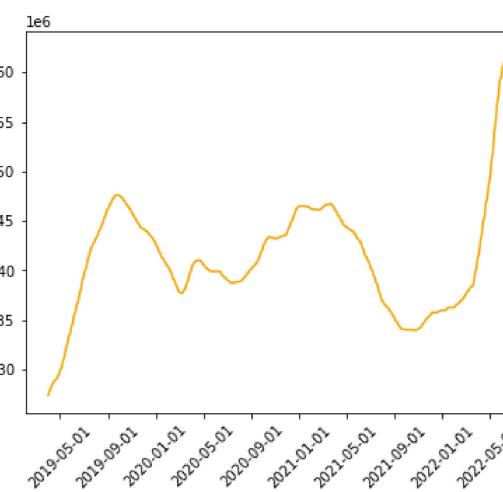
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	830.5	830.573879	833.250157	835.926435	838.613332	7.460501	823.69233	853.52433

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf
Y	1.56538	830.5	1623886.71875	0.919536 0.382688 0.4

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: -72.2699966430664
Sector Volume Factor: 1.2707168073107045
Sector Risk Trend Factor: -4.61789070905587
Index 1YMF: -69.05999755859375
Index Volume Factor: 0.5765983741853883
Index Risk Trend Factor: -5.134573474265833



ets next 13 weeks

2022-06-17

2022-06-24

inner cv scores:

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

best inner cv score, sdev (11 folds): 7631.678194921006 8525.179928

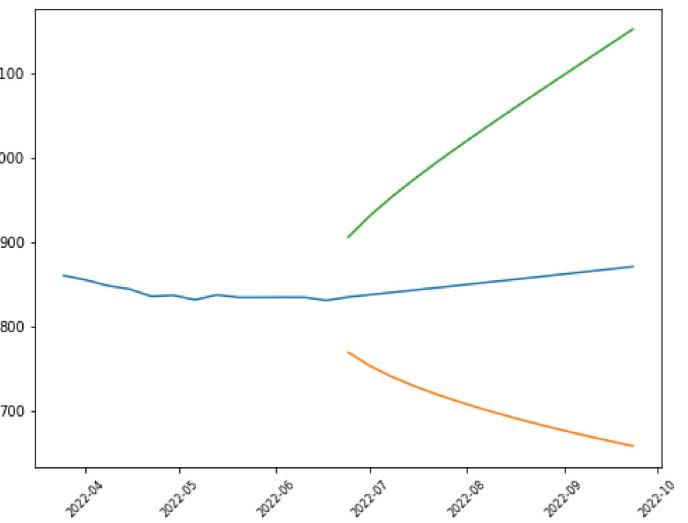
test cv mean error, stdev (10 folds): 8115.112660936892 8822.793731
cell date: 2022-09-22

expected return: 0.0481

expected return: 0.048191485489301494
discounted return: 0.0004853371644836

quarter return: 1.0456515534388278

quarter return: 1.045051555458878



```

['options', ('2022-07-15',)]
['sustainability',           Value
2022-5
palmOil          False
controversialWeapons False
gambling          False
socialsScore      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

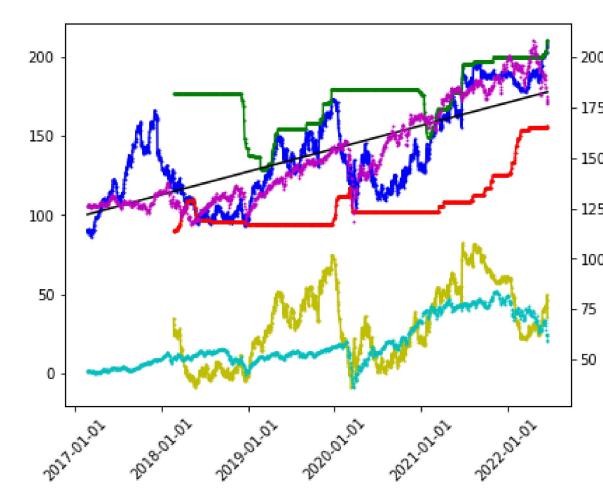
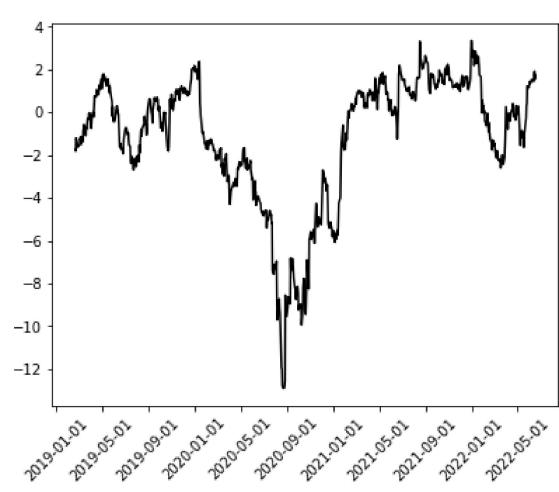
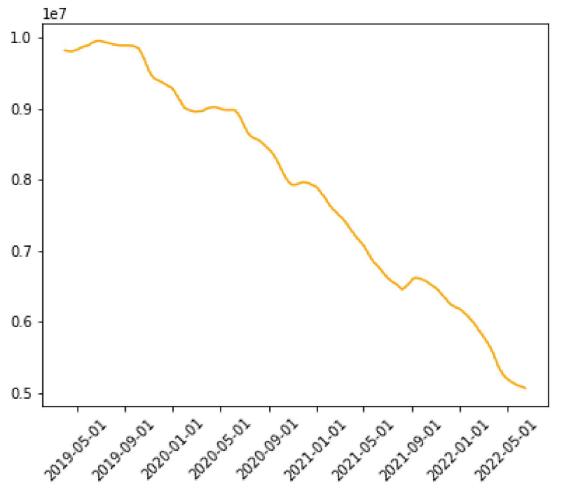
sector sharesOutstanding shortRatio totalCash \
SAFM Consumer Defensive 22320200      4.01   829123968

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

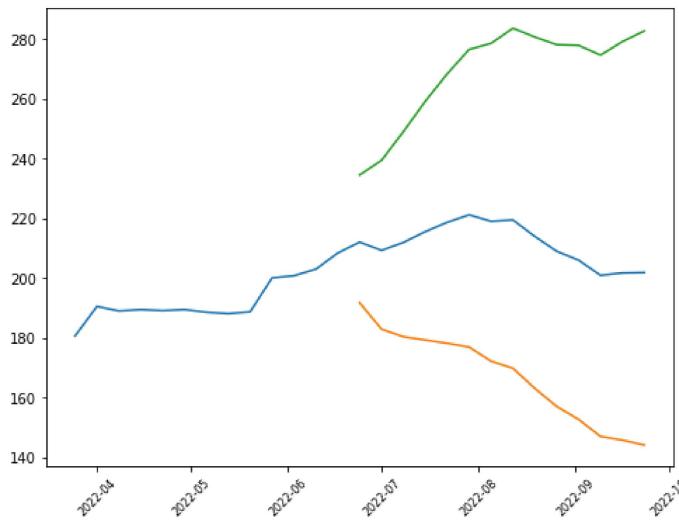
```

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
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', 'add', True]
best inner cv score, sdev (11 folds): 435.2291373950711 593.8337514572537
test cv mean error, stdev (10 folds): 459.8900889755355 617.424184443804
sell date: 2022-07-29
expected return: 0.061345639828649975
discounted return: 0.001453190824913575
quarter return: 1.1429315637377364



['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]

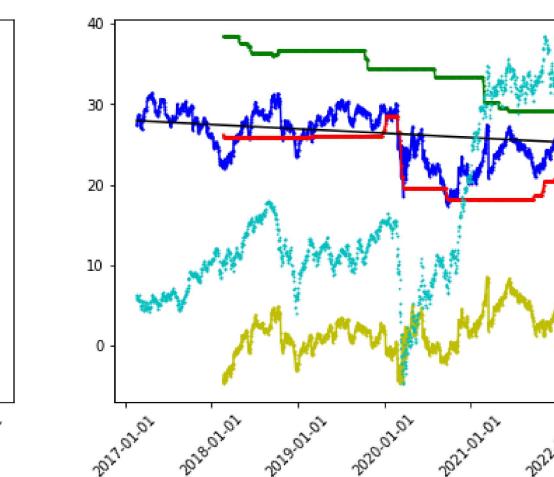
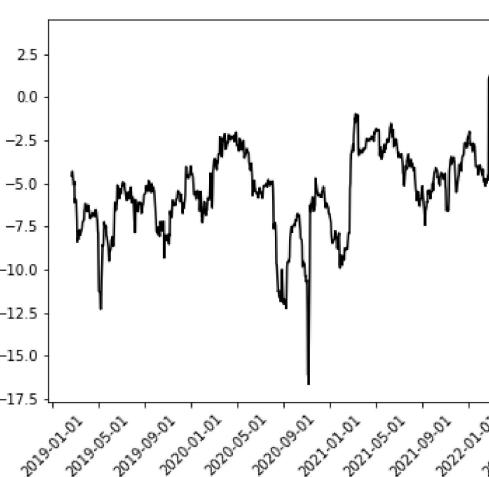
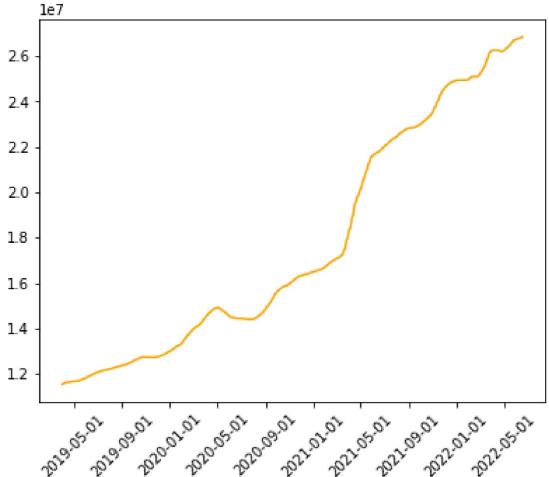
Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper	
2022-06-17	34.200001	33.571564	34.29746	35.023356	34.252857	0.376732	33.499393	35.006321

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

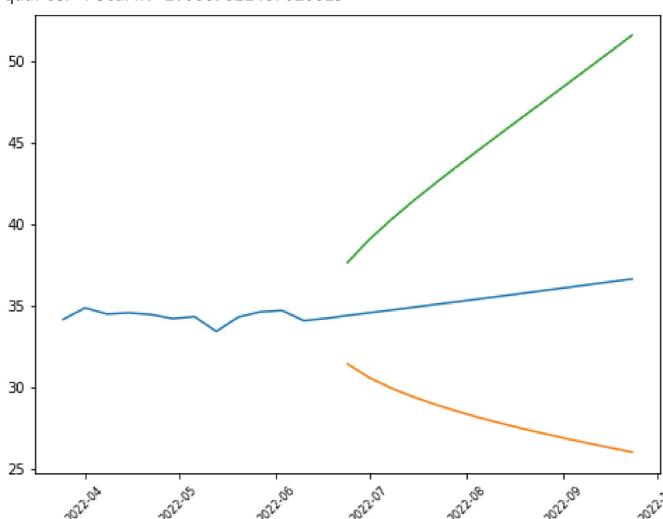
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
SJI	0.791297	34.200001	26850614.0625	0.934426	0.172286	0.415691

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
 2022-06-17
 2022-06-24
 inner cv scores:
 best model: [None, 'add', False]
 best inner cv score, stdev (11 folds): 8.124430864976208 7.859130323649861
 test cv mean error, stdev (10 folds): 8.673775444676817 8.038839881457797
 sell date: 2022-09-23
 expected return: 0.07074744632653288
 discounted return: 0.0007049592182830633
 quarter return: 1.0669812487020625



```
[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
2022-06-17	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	0.533209

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

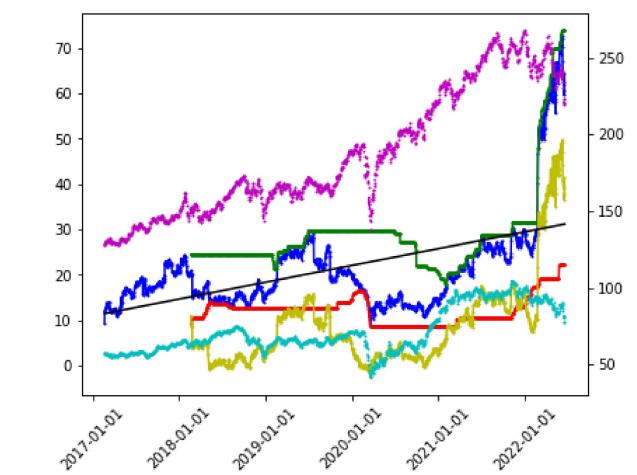
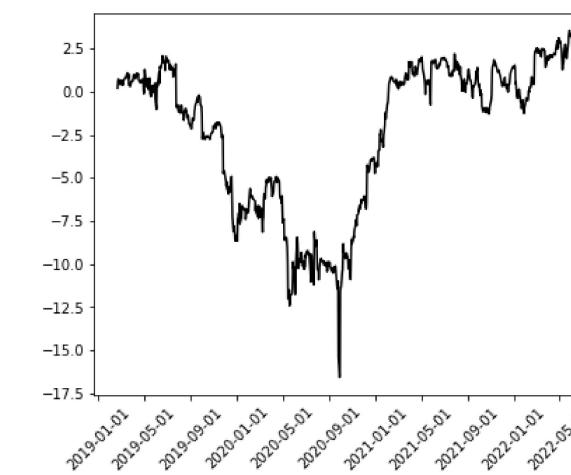
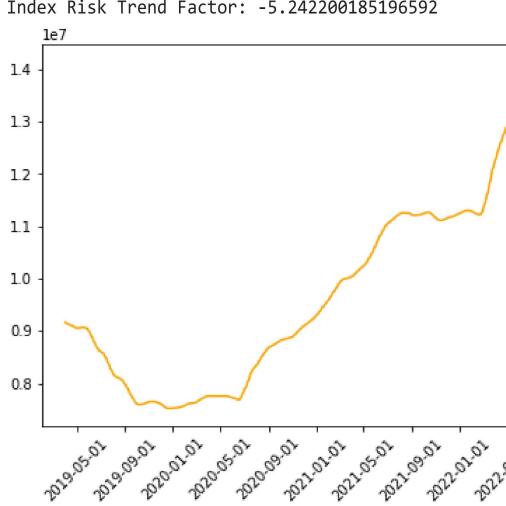
Sector Volume Factor: 1.2238851152317325

Sector Risk Trend Factor: -3.3236323632363236

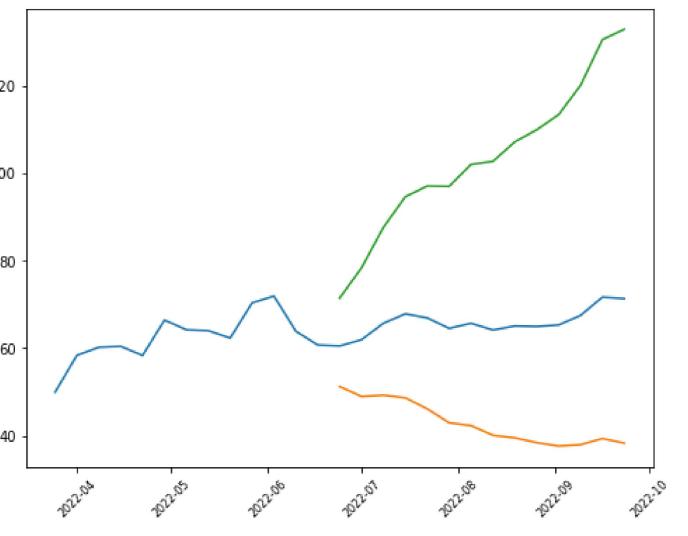
Index 1YMF: -77.27001953125

Index Volume Factor: 1.232760496116622

Index Risk Trend Factor: -5.242200185196592



ets next 13 weeks
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', None]
best inner cv score, sdev (11 folds): 44.121354337395516 56.91591689801364
test cv mean error, stdev (10 folds): 42.361418181092105 59.40785114689257
sell date: 2022-09-16
expected return: 0.1800496321347453
discounted return: 0.001841209601158189
quarter return: 1.1843990699903681



		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					

Q2021 101064000 -26657000
Q2021 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 -15090000.0 -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]

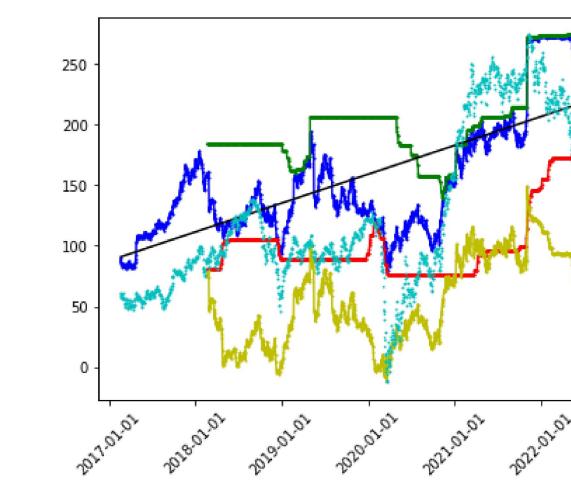
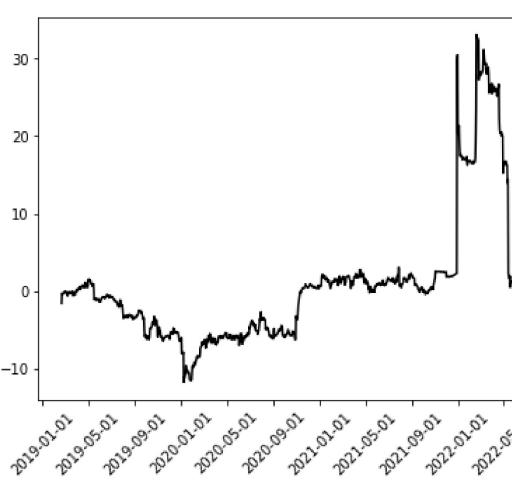
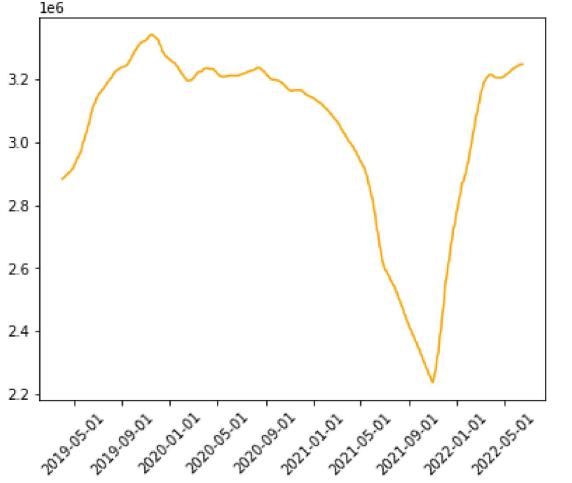
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDDev 90d_lower 90d_upper

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

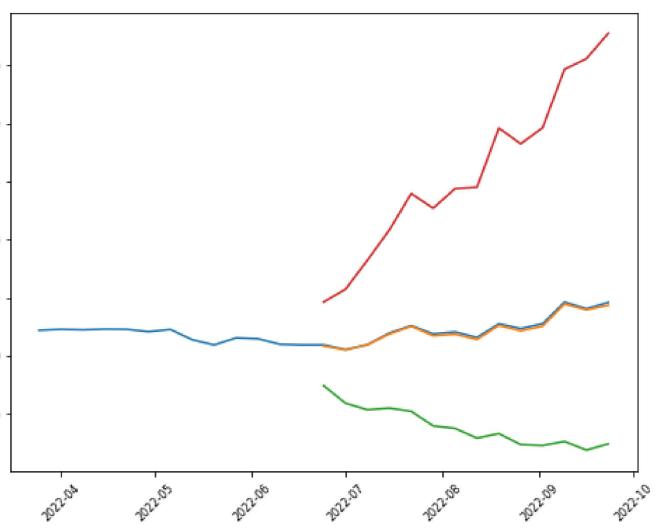
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
ROG	0.980653	259.380005	3248345.898438	0.91539	0.71811	0.478768

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
2022-06-17
2022-06-24
inner cv scores:
best model: ['mul', 'add', False]
best inner cv score, sdev (11 folds): 1011.9720205308873 1503.6247098356337
test cv mean error, stdev (10 folds): 1106.8166911249887 1545.323948041598
sell date: 2022-09-09
expected return: 0.14190933655058566
discounted return: 0.001600094667310037
quarter return: 1.1584594486327053



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

I axis r axis

legend legend

blue symbol magenta sector

green trailing_1yr_max cyan index

red trailing_1yr_min

orange 30d_vol_2yr

black risk_trend_factor/linear

yellow supply_trend_1yr

Sector 1YMF: -141.5800018310547

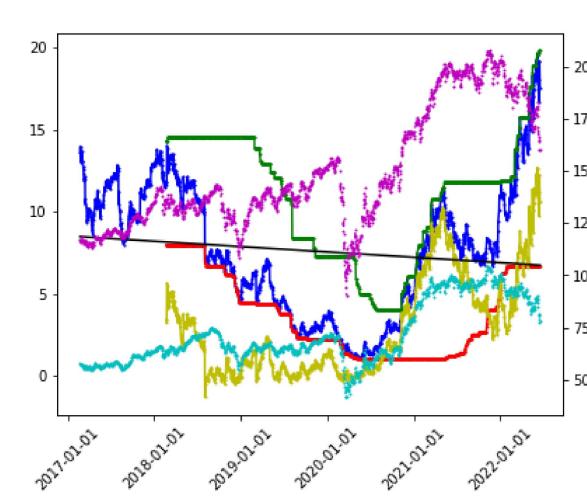
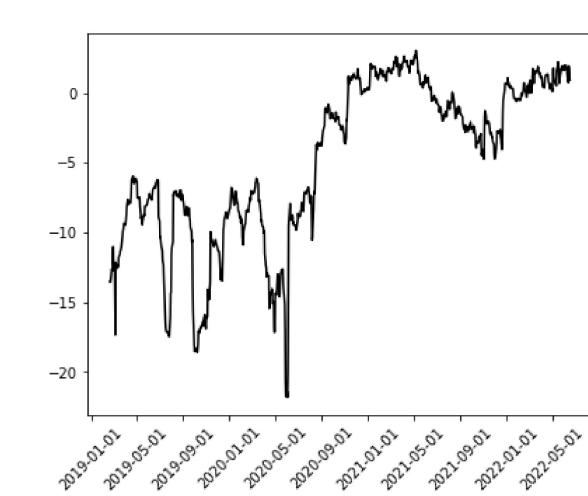
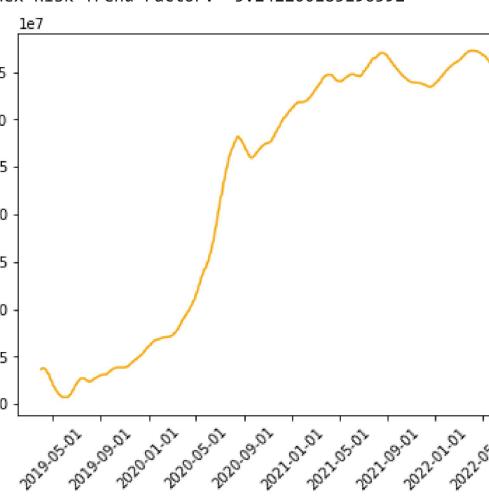
Sector Volume Factor: 0.8696853533786545

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

2022-06-17

2022-06-24

inner cv scores:

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

best inner cv score, sdev (11 folds): 4.439775802839138 6.248313481812491

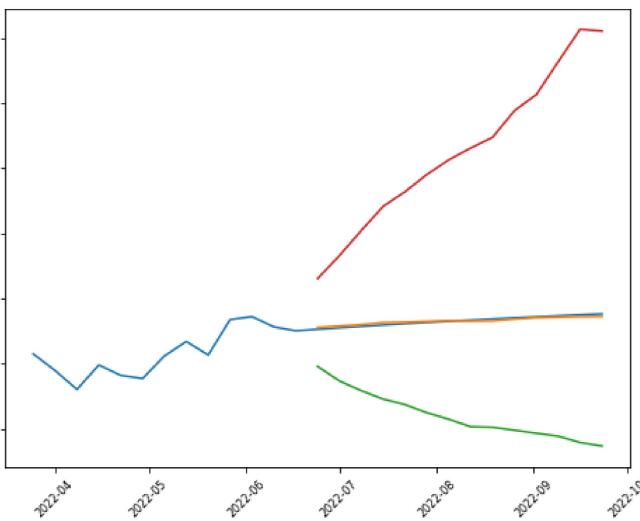
test cv mean error, stdev (10 folds): 4.8683349916931045 6.397286243638341

sell date: 2022-09-23

expected return: 0.07393593644399346

discounted return: 0.0007356348262002044

quarter return: 1.0699945156676762



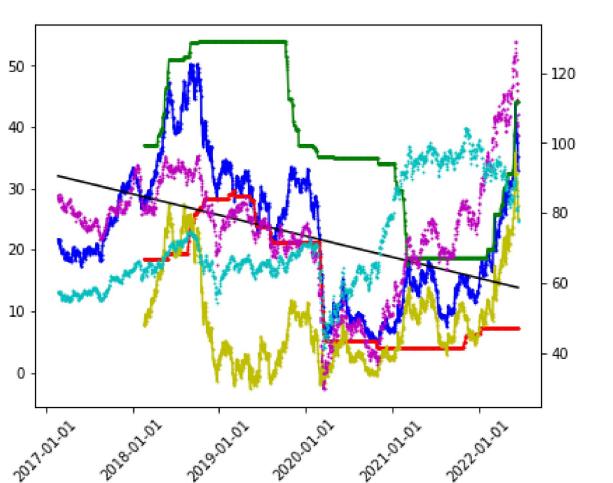
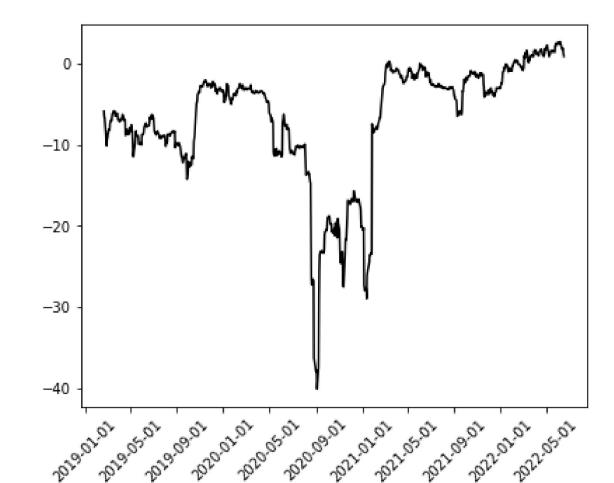
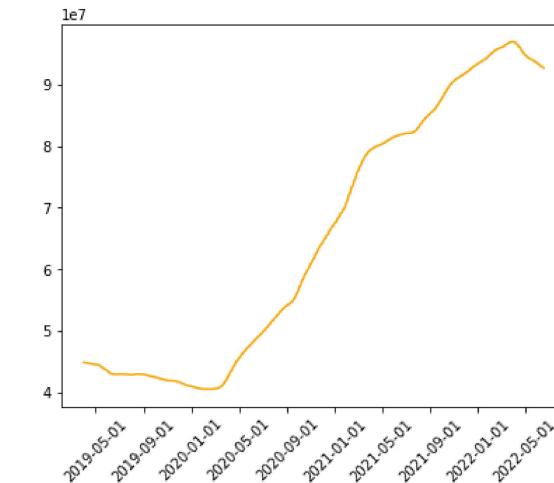
```
[ 'options', ('2022-07-15',) ]
symbol: PBF
sector: Energy
Index: SP600
vol_30d_2yr: 92668774.0234375
Sector 1YMF: 17.619998931884766
1YMF: 17.619998931884766
risk trend factor: 0.8876574451557954
    beta currentRatio debtToEquity      ebitda ebitdaMargins forwardPE \
PBF   2.259981      1.254     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		

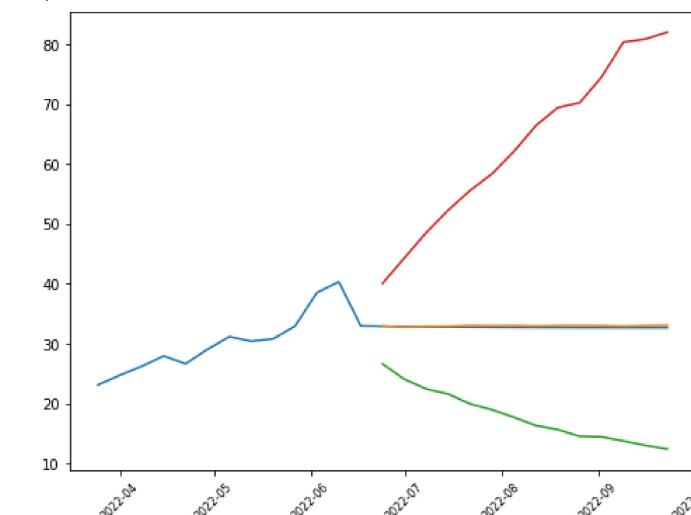
Sector 1YMF: -3.82000732421875
Sector Volume Factor: 0.8966412344901694
Sector Risk Trend Factor: -0.12330558135216596
Index 1YMF: -77.27001953125
Index Volume Factor: 1.232760496116622
Index Risk Trend Factor: -5.242200185196592



```

sets next 13 weeks
2022-06-17
2022-06-24
inner cv scores:
best model: [None, 'mul', True]
best inner cv score, sdev (11 folds): 32.038762875971365 24.823205544629364
test cv mean error, stdev (10 folds): 30.715007940527464 25.66193856379463
sell date: 2022-06-24
expected return: -0.0020116142087656815
discounted return: -0.00033555039405674947
quarter return: 0.9695959731896322

```



```

['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: 9.090003967285156
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

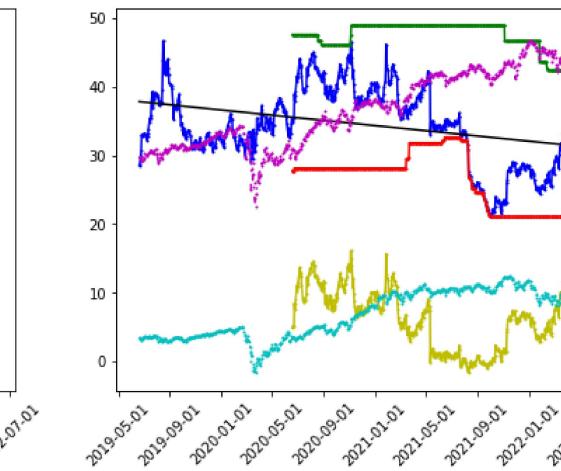
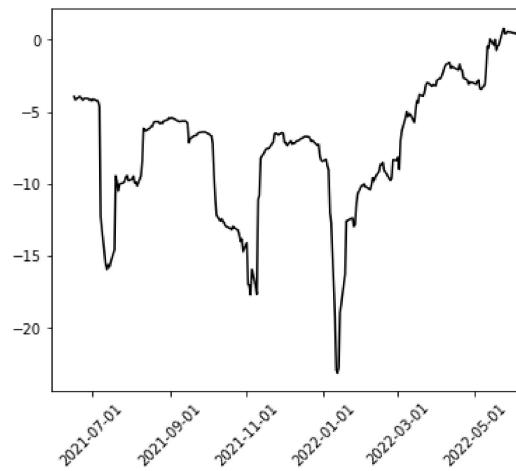
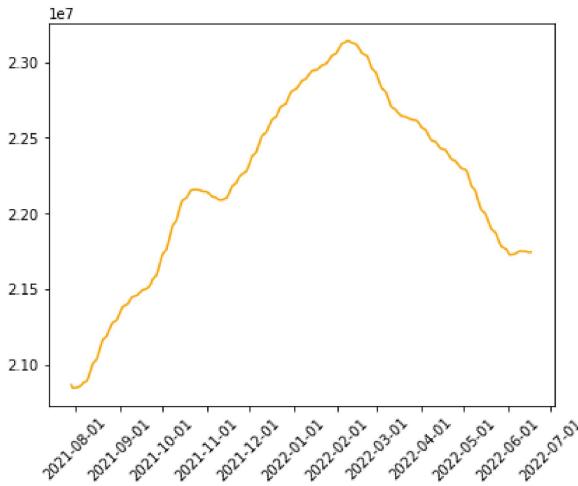
Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper
2022-06-17 40.150002 35.915072 38.024936 40.134801 35.226667 2.439389 30.347888 40.105445

```

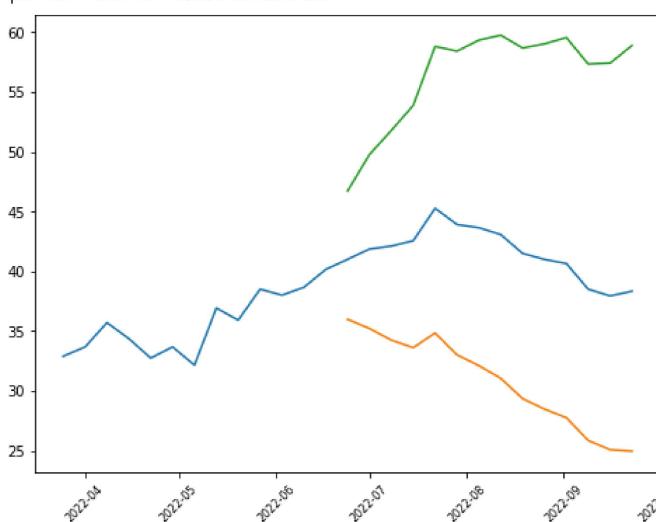
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
GO	1.191531	40.150002	21744971.289062	0.687007	0.173605	0.403873

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
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', None]
best inner cv score, sdev (11 folds): 23.788531206490646 17.28678832661115
test cv mean error, stdev (10 folds): 23.78853331644342 17.286791788688287
sell date: 2022-07-22
expected return: 0.12731751345756498
discounted return: 0.0035309523740507665
quarter return: 1.383028215501882



```

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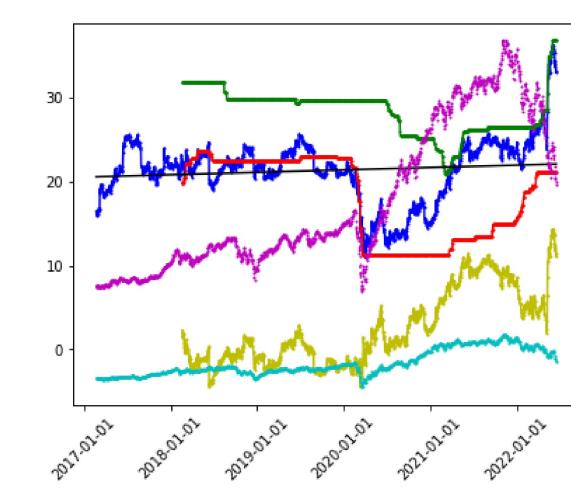
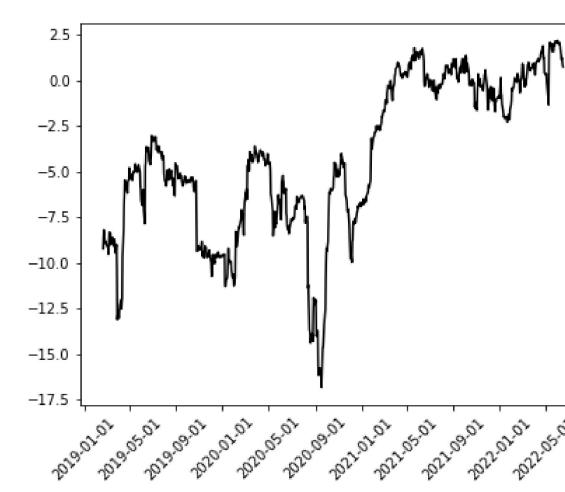
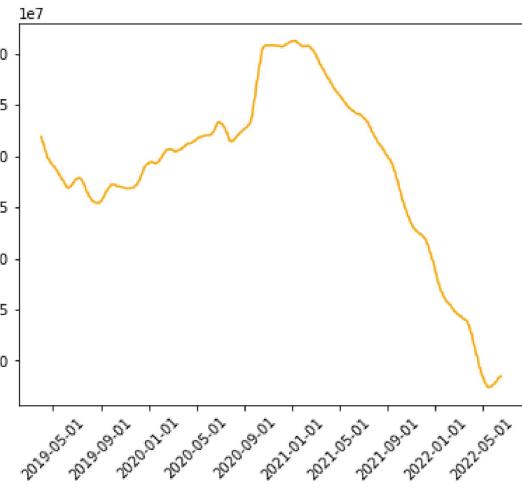
2022-06-17	33.0	32.411108	34.624444	36.837781	29.692222	4.042801	21.60662	37.777824
------------	------	-----------	-----------	-----------	-----------	----------	----------	-----------

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

2022-06-17

2022-06-24

inner cv scores:

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

best inner cv score, sdev (11 folds): 6.864337358781724 6.361525229667524

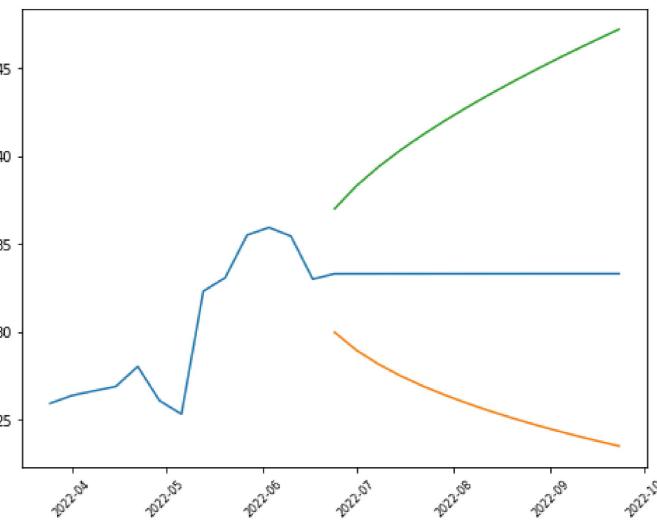
test cv mean error, stdev (10 folds): 7.292313812783581 6.519289102108811

sell date: 2022-09-23

expected return: 0.009337346986027248

discounted return: 9.581926498625215e-05

quarter return: 1.0088539161473173



```

['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  206.8117

```

volume_factor rates_p vol_30d_2y pct_2y adr hurst

| axis | axis

legend

blue symbol **magenta** sector

green trailing 1yr max

[green](#) [training](#) [yt_max](#) [cyan](#) [index](#)

red trailing_1yr_min

orange 30d_vol_2yr

black risk trend factor/linear

black_risk_trend_factor/linear

yellow supply_trend_1yr

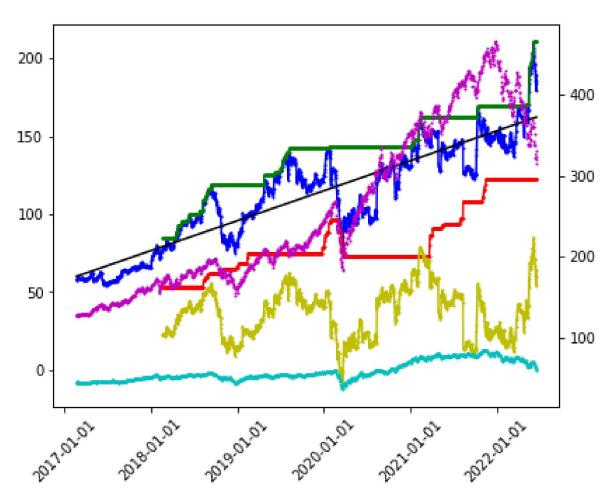
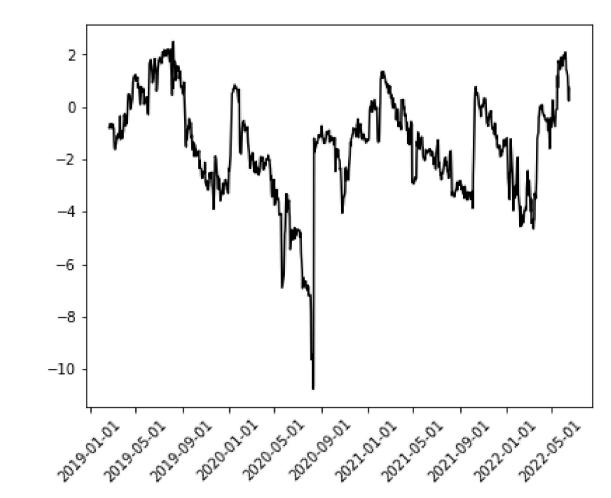
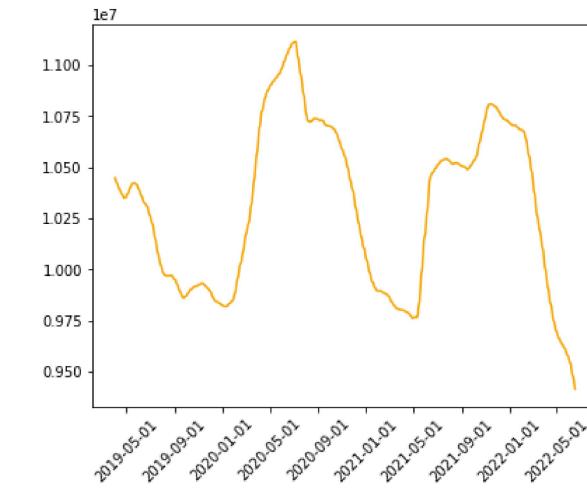
Sector 1YMF: -363.4599914550781
Sector Volume Factor: 1.1E384E7613801004

Sector Risk Trend Factor: -4.954471974341429

Index 1YMF: -69.05999755859375

Index Volume Factor: 0.5765983741853883

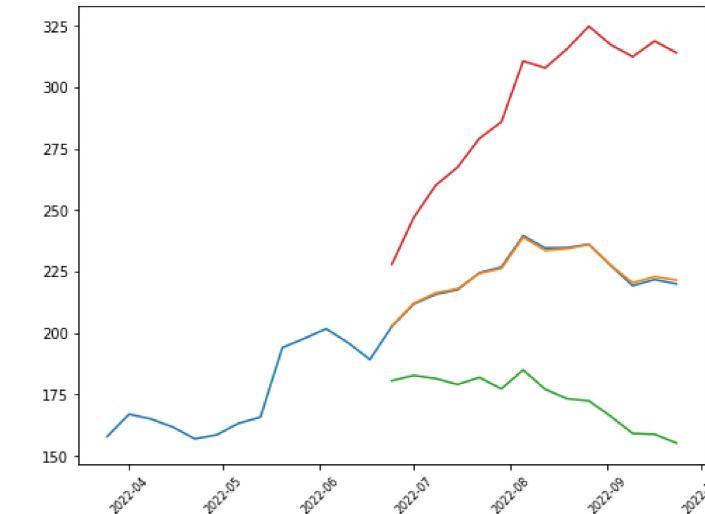
Index Risk Trend Factor: -5.134573474205833



```

sets next 13 weeks
2022-06-17
2022-06-24
inner cv scores:
best model: ['mul', 'add', False]
best inner cv score, sdev (11 folds): 489.4540936599291 509.7460759152572
test cv mean error, stdev (10 folds): 536.2814275352382 511.57056536040994
sell date: 2022-08-05
expected return: 0.266130003111649
discounted return: 0.00492804063567176
quarter return: 1.571870416378217

```



```

['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

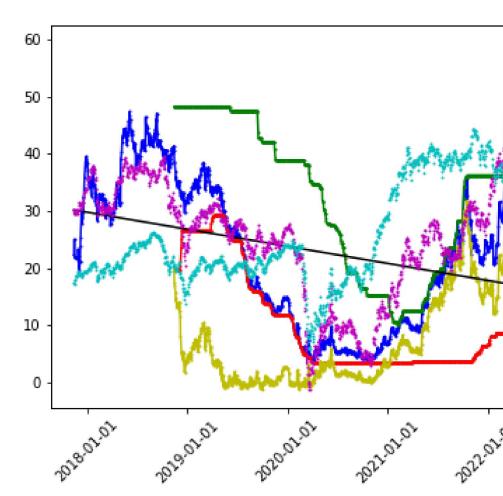
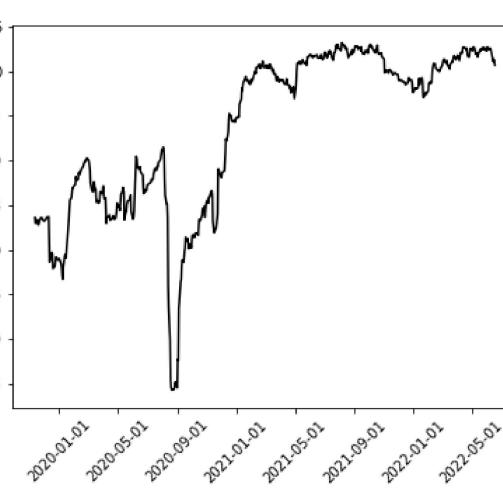
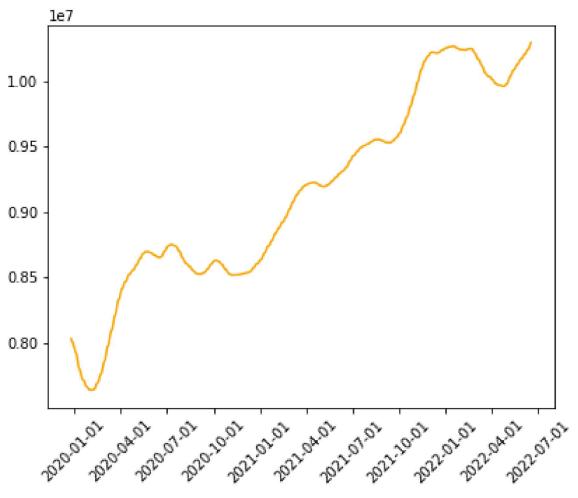
```

	2022-06-17	46.150002	47.268535	52.341873	57.415211	46.69127	6.413974	33.863321	59.519218
--	------------	-----------	-----------	-----------	-----------	----------	----------	-----------	-----------

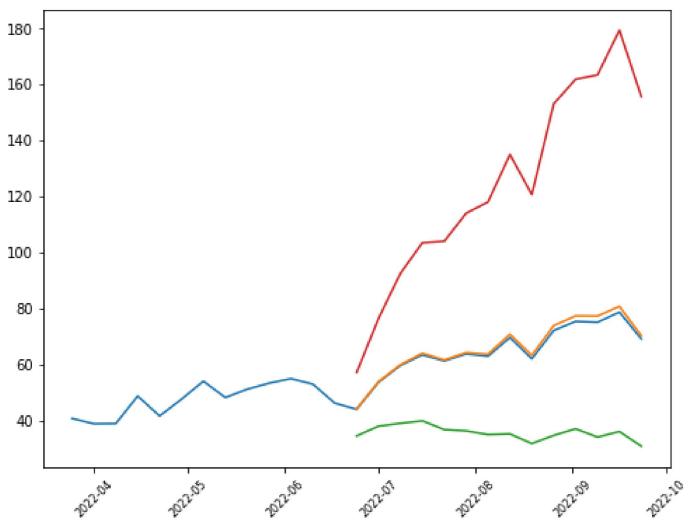
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
CEIX	1.548727	46.150002	10292389.84375	0.762563	0.855686	0.521917

l axis		r axis	
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
2022-06-17
2022-06-24
inner cv scores:
best model: ['mul', 'add', False]
best inner cv score, sdev (11 folds): 36.226316557030934 60.30280617250171
test cv mean error, stdev (10 folds): 36.226316729288946 60.302806152572394
sell date: 2022-09-16
expected return: 0.7036936565173771
discounted return: 0.005937542553579478
quarter return: 1.7239852264024262



```
[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

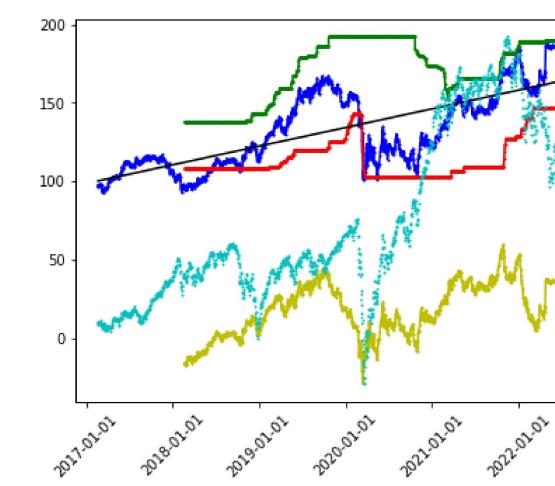
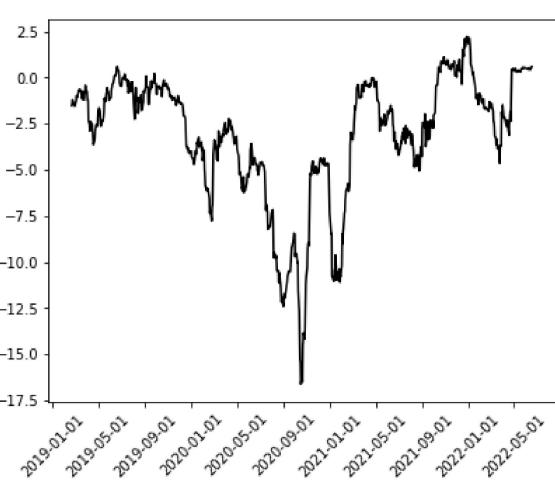
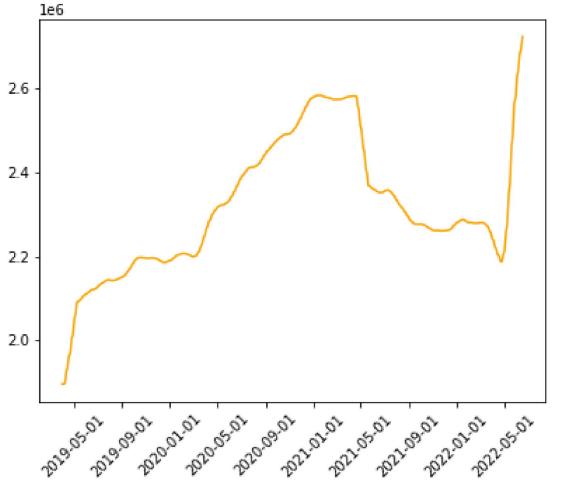
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
PSB	2.540601	185.919998	2723370.898438	0.951471	0.840486	0.47672

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

2022-06-17

2022-06-24

inner cv scores:

best model: ['add', None]

best inner cv score, sdev (11 folds): 369.7291505378658 494.7604441540329

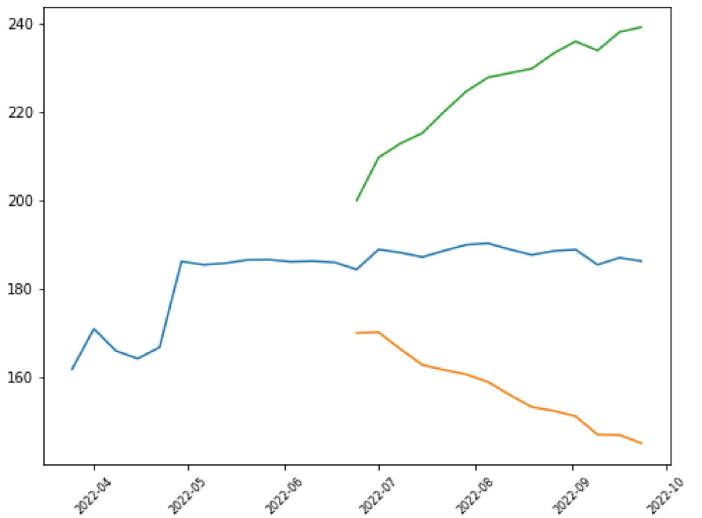
test cv mean error, stdev (10 folds): 405.8531642165337 504.88840653275463

sell date: 2022-08-05

expected return: 0.023281227640003843

discounted return: 0.0004795806707851291

quarter return: 1.0450981925897287



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

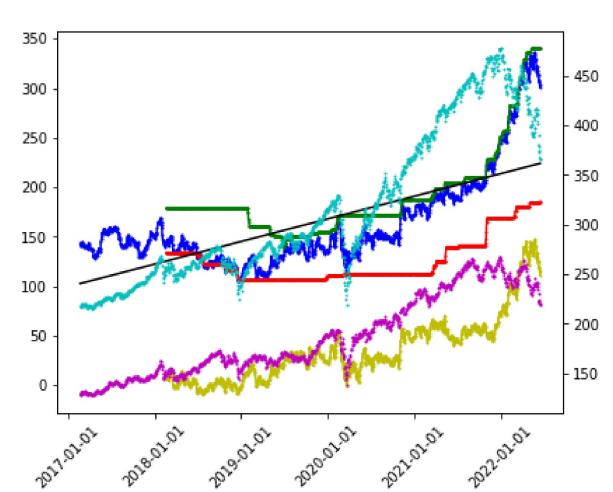
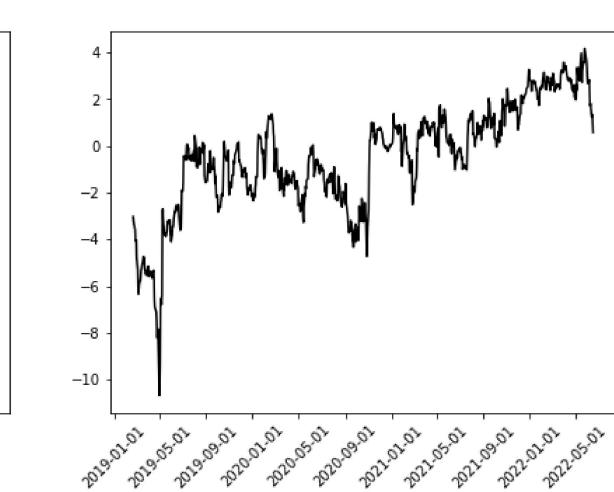
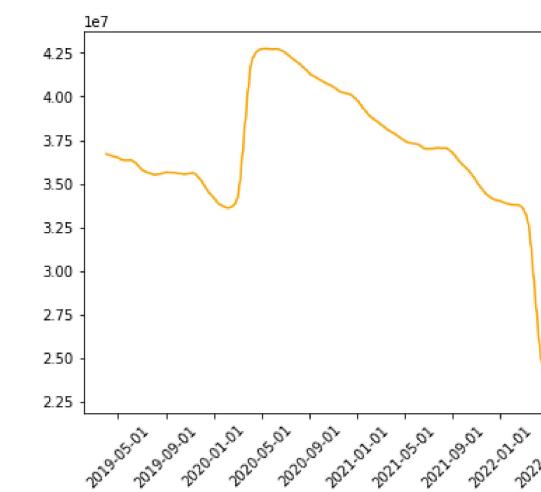
Sector Volume Factor: 1.2238851152317325

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

2022-06-17

2022-06-24

inner cv scores:

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

best inner cv score, sdev (11 folds): 416.2961240320314 356.83690933620187

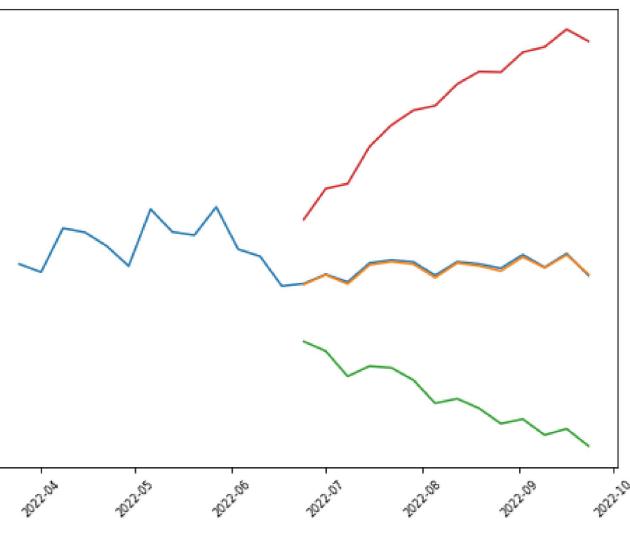
test cv mean error, stdev (10 folds): 436.74552730928997 368.0569226795546

sell date: 2022-09-16

expected return: 0.046541129061126806

discounted return: 0.0005055784691911924

quarter return: 1.0475996138910328



	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',          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 310000000.0
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

```

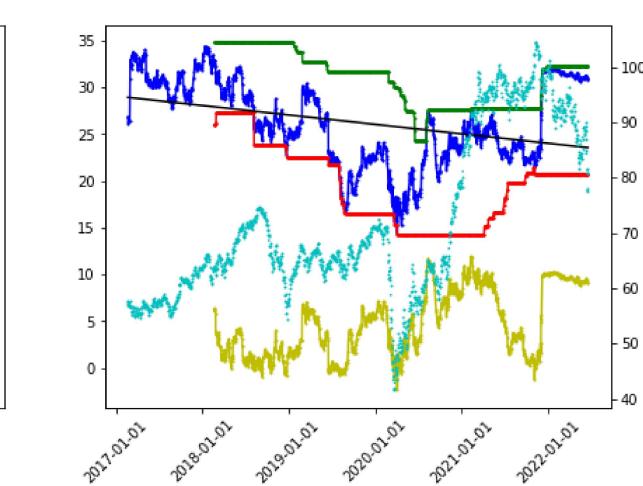
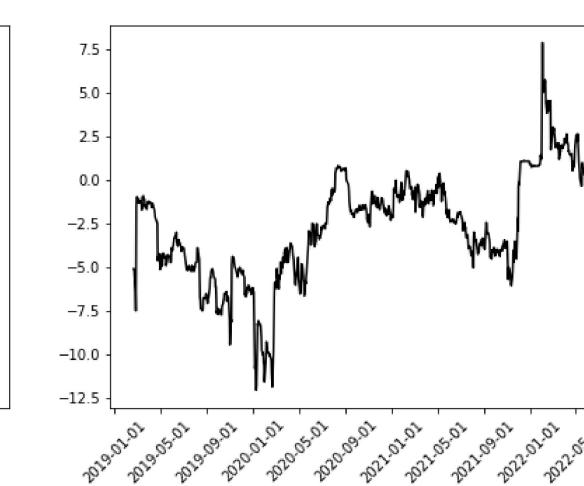
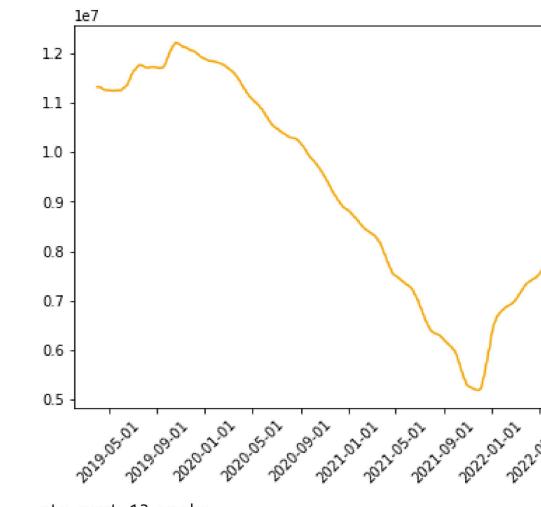
```
socialPercentile          0
peerCount                 58
governanceScore           5.52
environmentPercentile     0
animalTesting              False
tobacco                   False
totalLsg                  15.17
highestControversy         3
esgPerformance            LAG_PERF
coal                       False
pesticides                 False
adult                      False
percentile                 10.18
peerGroup                  Healthcare
smallArms                  False
environmentScore            2.29
governancePercentile       0
militaryContract           False]
symbol: GCP
sector: error
sector: error
Index: SP600
vol_30d_2yr: 8243886.328125
Sector 1YMF: 0.45000267028808594
1YMF: 0.45000267028808594
risk trend factor: 0.5027960224875223
Empty DataFrame
Columns: []
Index: [GCP]
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	30.93	30.835356	31.038381	31.241406	31.187778	0.232375	30.723027	31.500000

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf
GCP	1.87078	30.93	8243886.328125	0.913628
I axis		r axis		

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

yellow supply_trend_1yr
Index 1YMF: -77.27001953125
Index Volume Factor: 1.232760496116622
Index Risk Trend Factor: -5.2422001851965



ets next 13 weeks

2022-06-17

2022-06-24

inner cv scores:
best model: ['ada

best model: [‘add’, ‘mul’, False]
best inner cv score: sdev (11 fol)

best inner cv score, stdv (11 fold)
test cv mean error, stdv (10 fold)

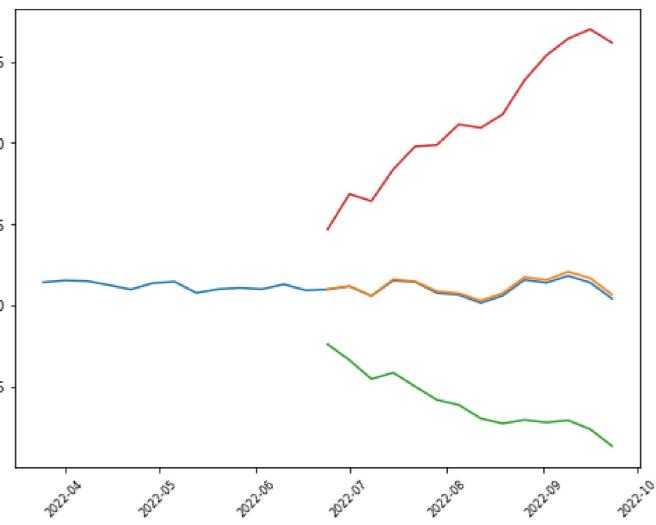
test cv mean error, stdev (10 folds): 8.
sell date: 2022-09-09

expected return: 0.028888441900735078

discounted return: 0.0003431797990320895

quarter return: 1.032070651240962

Valid till Return: 1.052070051240502



```
[ '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

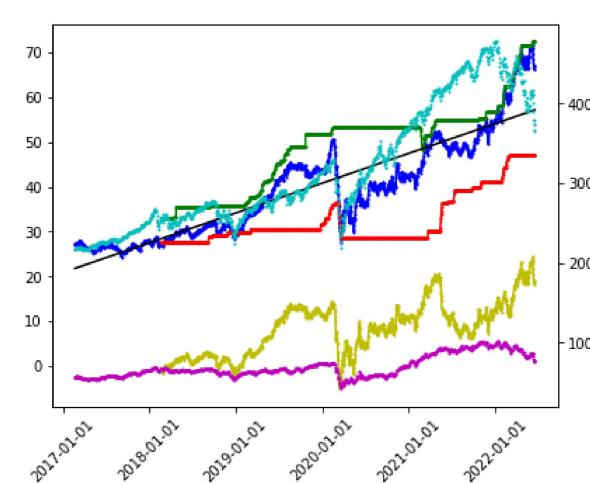
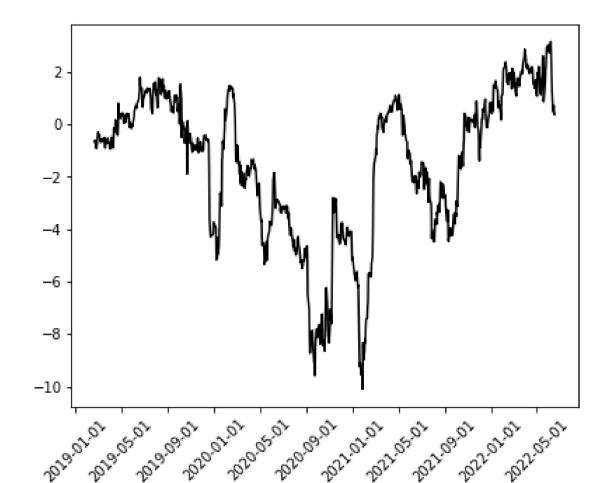
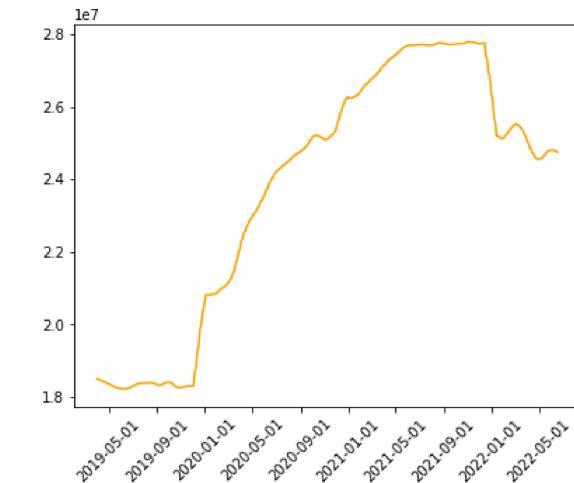
    totalRevenue trailingPE
WRB 10214005760 14.222536

Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper
2022-06-17 66.82 65.019435 68.896032 72.772628 67.946191 1.725853 64.494485 71.397896
```

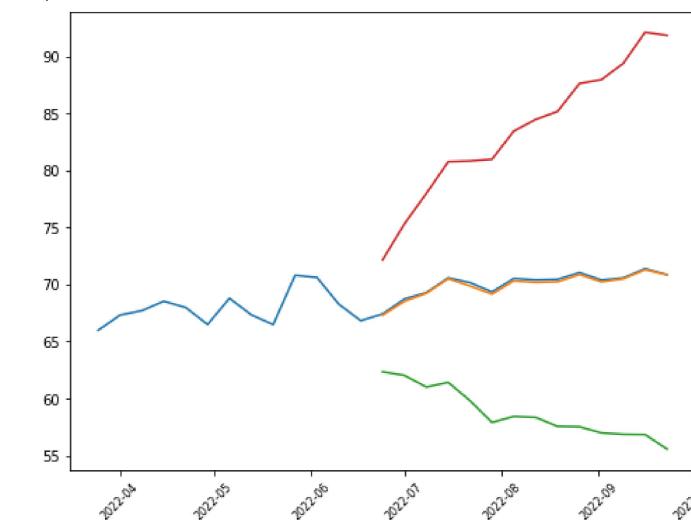
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
--	---------------	----------	-------------	---------	-----	-------

WRB	1.220256	66.82	24741280.664062	0.845794	0.942554	0.452599	
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: -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
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', 'mul', False]
best inner cv score, sdev (11 folds): 34.12905629906457 62.7094766130434
test cv mean error, stdev (10 folds): 37.07787272889841 65.03903137977144
sell date: 2022-09-16
expected return: 0.06826689811901716
discounted return: 0.0007340205271226807
quarter return: 1.0698357333497455



```

['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]

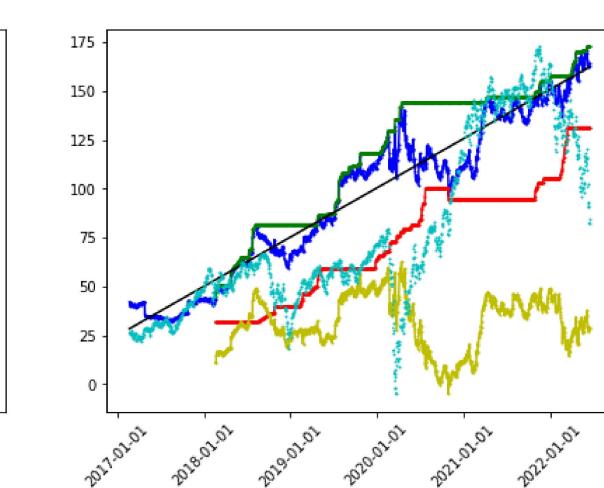
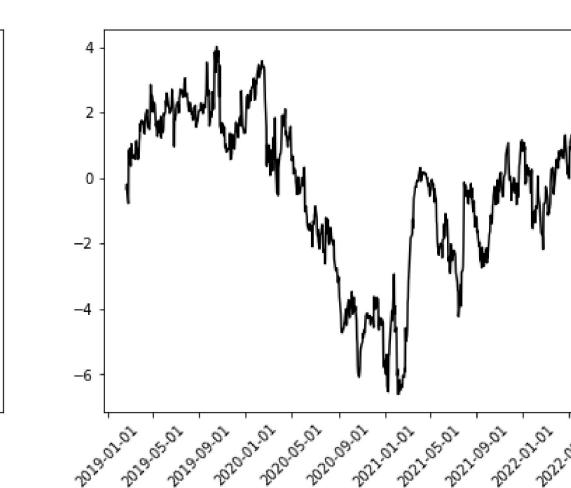
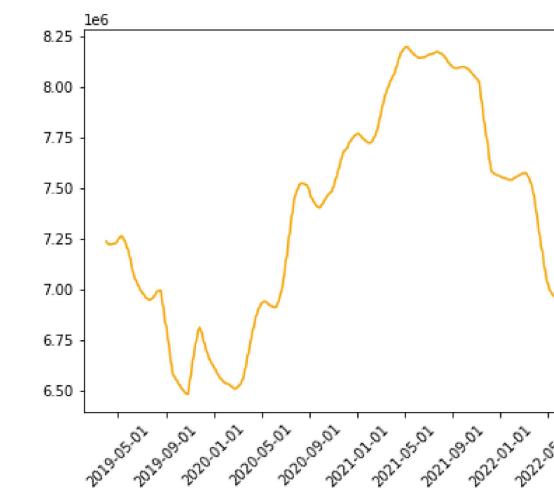
```

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

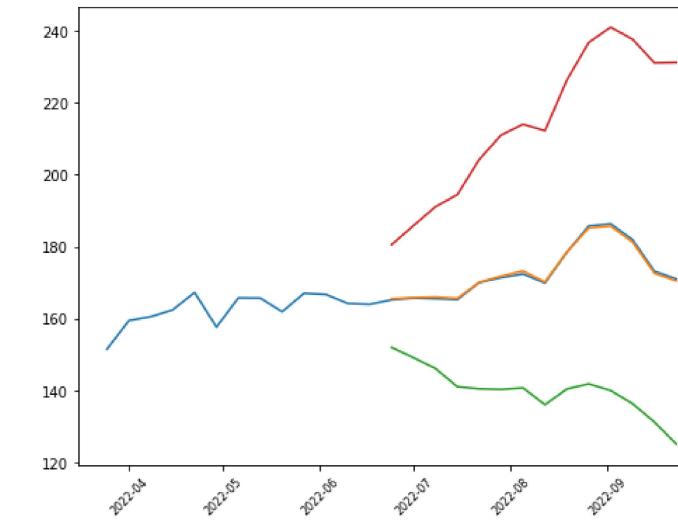
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
FCN	0.694756	164.020004	6853053.320312	0.888589	0.922824	0.404937

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
 2022-06-17
 2022-06-24
 inner cv scores:
 best model: ['mul', 'add', True]
 best inner cv score, sdev (11 folds): 113.70673887274339 46.52872638178013
 test cv mean error, stdev (10 folds): 109.63913216057483 46.89792400709696
 sell date: 2022-09-02
 expected return: 0.1364131271629469
 discounted return: 0.001684007435712731
 quarter return: 1.1674225614352378



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

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

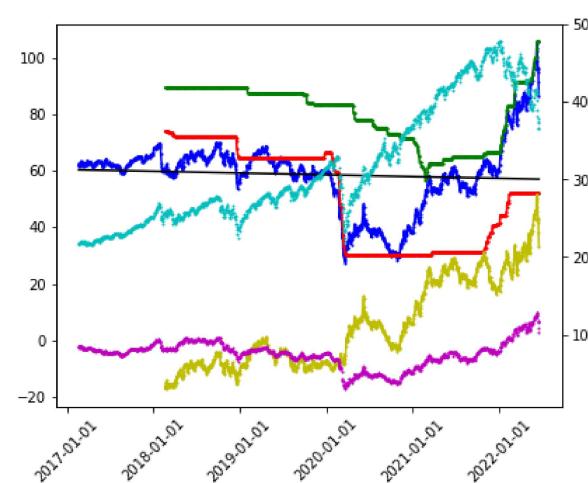
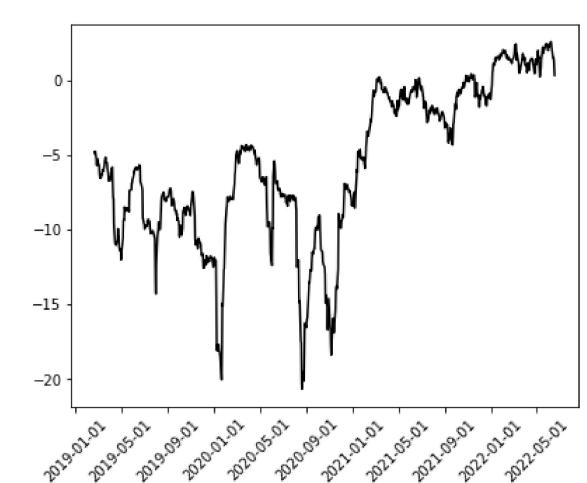
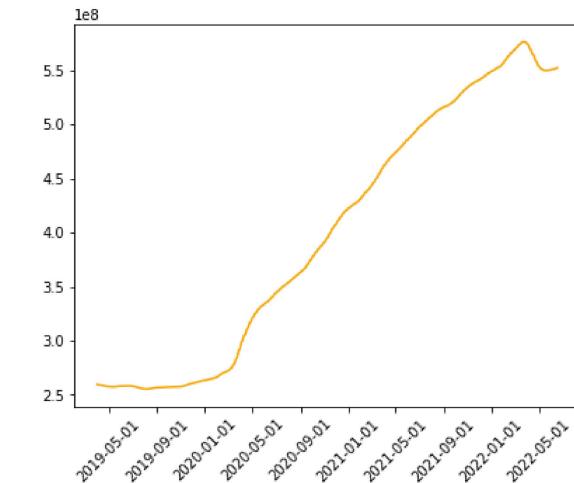
Sector Volume Factor: 0.8966412344901694

Sector Risk Trend Factor: -0.12330558135216596

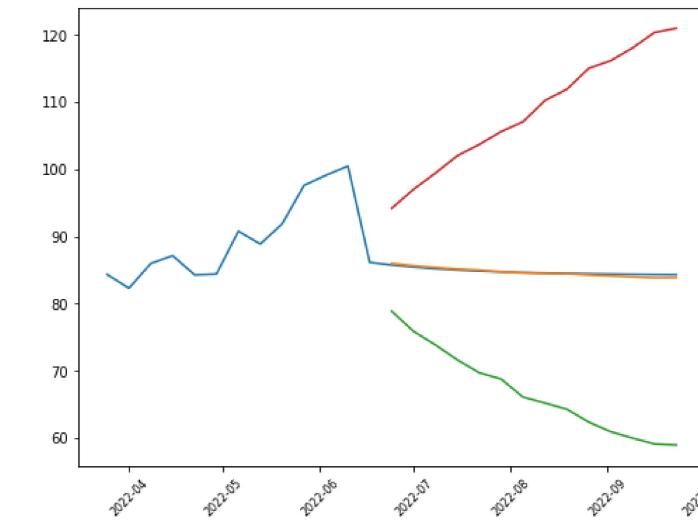
Index 1YMF: -287.8400573730469

Index Volume Factor: 1.1835166983613057

Index Risk Trend Factor: -3.791860877423899



ets next 13 weeks
2022-06-17
2022-06-24
inner cv scores:
best model: [None, 'mul', True]
best inner cv score, sdev (11 folds): 135.34507065626053 164.191540840967
test cv mean error, stdev (10 folds): 148.3675284448587 166.70199275545457
sell date: 2022-06-24
expected return: -0.004465247006522599
discounted return: -0.0007455962379439018
quarter return: 0.9336810020601286



```

['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
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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

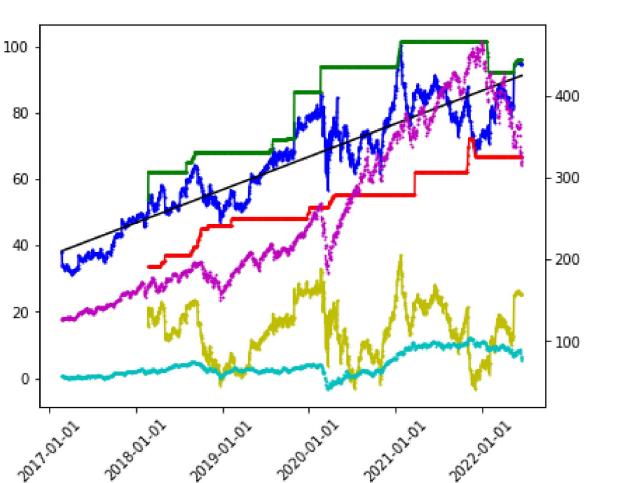
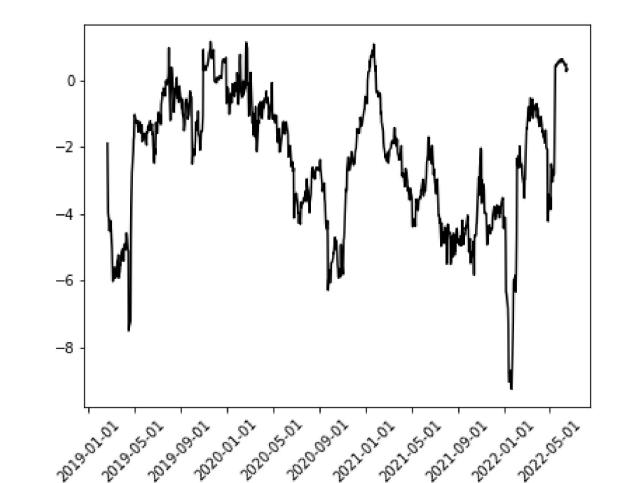
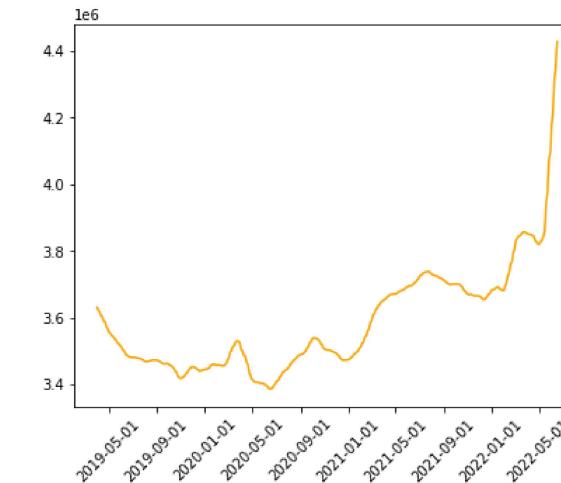
Sector Volume Factor: 1.1528457613891094

Sector Risk Trend Factor: -4.954471974241429

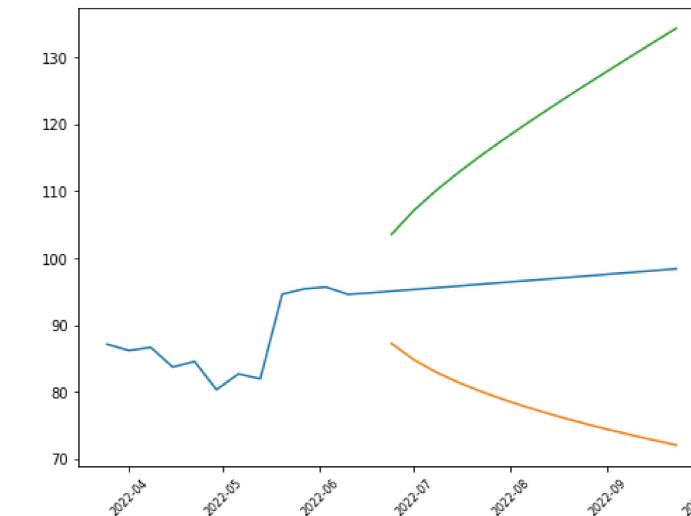
Index 1YMF: -77.27001953125

Index Volume Factor: 1.232760496116622

Index Risk Trend Factor: -5.242200185196592



sets next 13 weeks
 2022-06-17
 2022-06-24
 inner cv scores:
 best model: [None, 'add', False]
 best inner cv score, sdev (11 folds): 79.08240099617208 56.43307468179763
 test cv mean error, stdev (10 folds): 75.67083754568336 58.095909388628236
 sell date: 2022-09-23
 expected return: 0.03804220288704062
 discounted return: 0.00038498585922175366
 quarter return: 1.0360463507561577



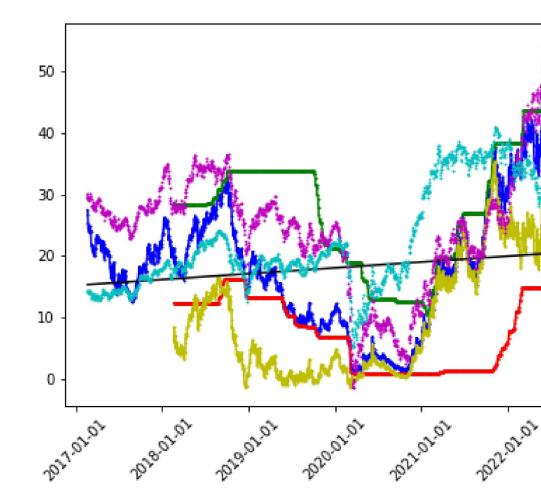
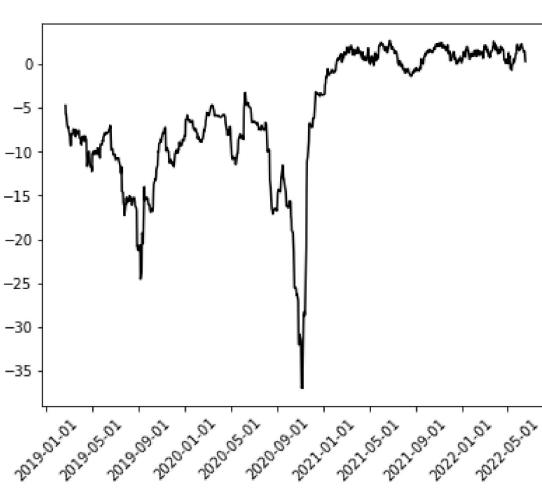
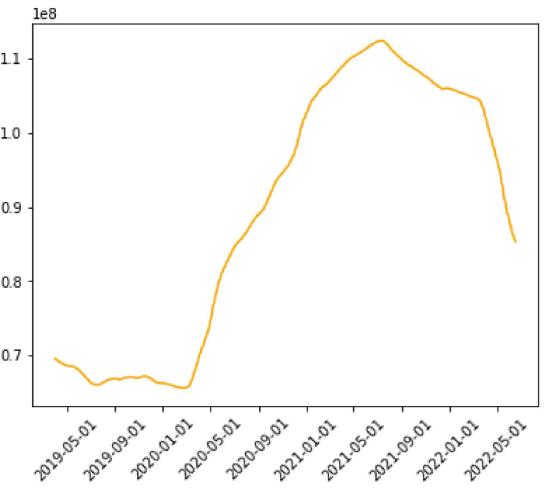
['options', ('2022-08-19',)]
 symbol: SM
 sector: Energy
 Index: SP600
 vol_30d_2yr: 85332599.609375
 Sector 1YMF: 6.969999313354492
 1YMF: 6.969999313354492
 risk trend factor: 0.3050327621527311
 beta currentRatio debtToEquity dividendRate dividendYield ebitda \
 SM 5.488235 0.717 93.916 0.02 0.0006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

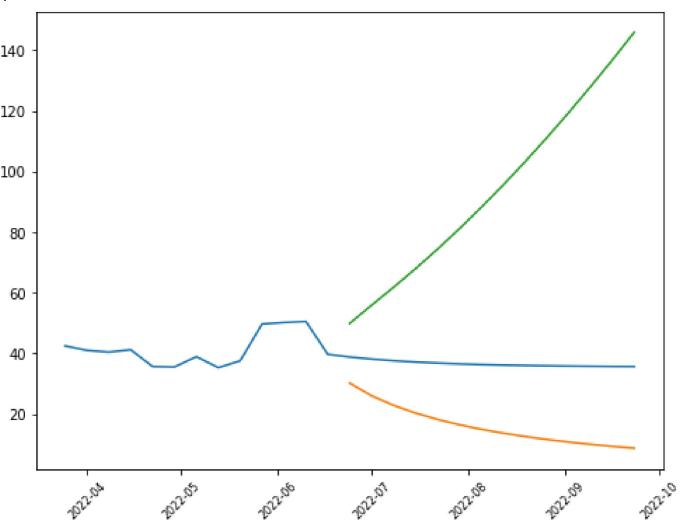
volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
SM	0.640686	39.709999	85332599.609375	0.715458	0.803847	0.471215

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
2022-06-17
2022-06-24
inner cv scores:
best model: [None, 'add', True]
best inner cv score, sdev (11 folds): 38.1885741853141 45.77804827643135
test cv mean error, stdev (10 folds): 41.847933605020515 46.45312322423157
sell date: 2022-06-24
expected return: -0.022211695892274834
discounted return: -0.0037366828843222732
quarter return: 0.7086321484394967



	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]
['quarterly_earnings',	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

```

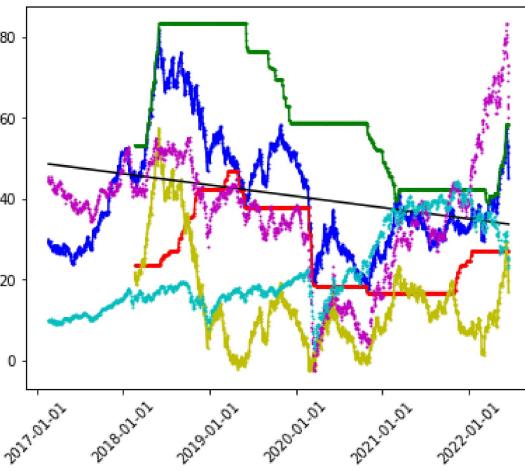
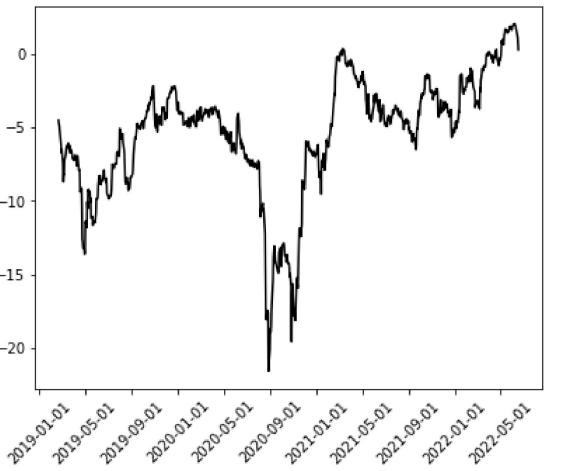
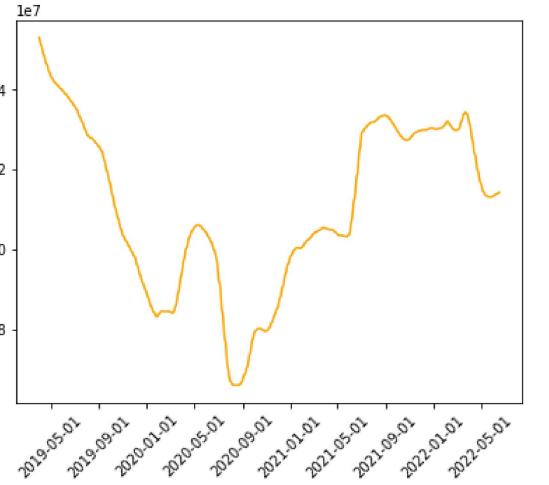
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
DINO	1.094012	45.0	51433534.179688	0.676181	0.488602	0.560442

l axis r axis

legend legend

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

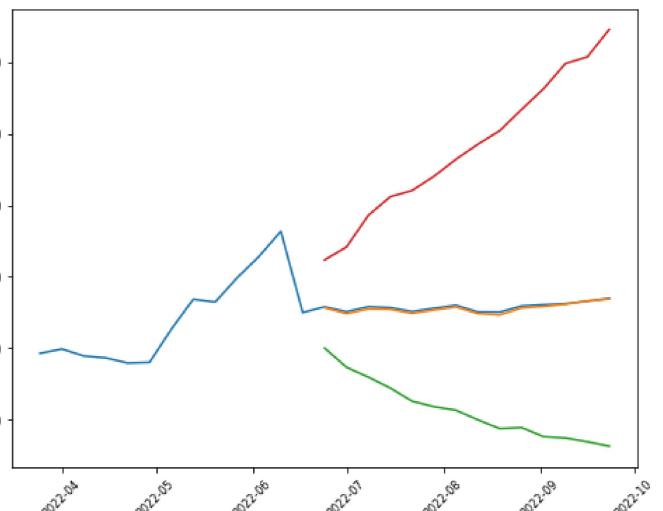


ets next 13 weeks

```

2022-06-17
2022-06-24
inner cv scores:
best model: ['mul', 'mul', True]
best inner cv score, sdev (11 folds): 70.25982738916844 77.80841849754646
test cv mean error, stdev (10 folds): 75.88424653938752 79.44551535924022
sell date: 2022-09-23
expected return: 0.04392420203304192
discounted return: 0.00044326195803545687
quarter return: 1.0416136160961917

```



```

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

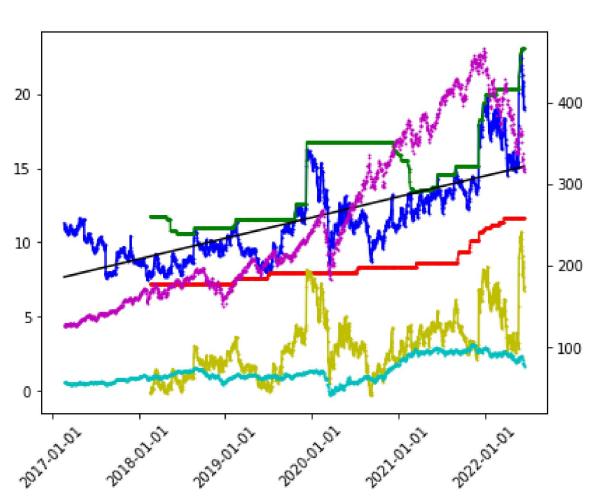
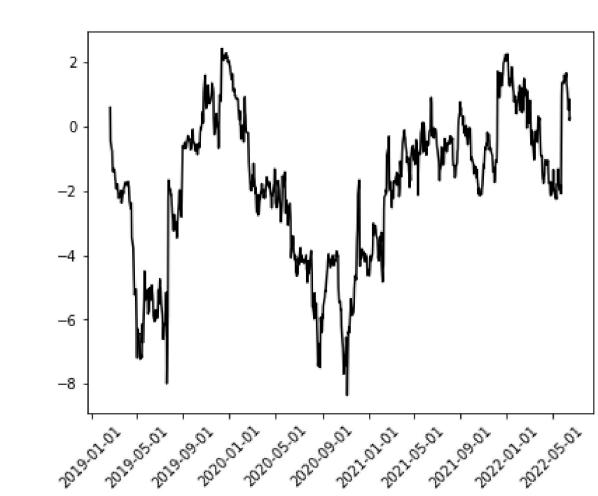
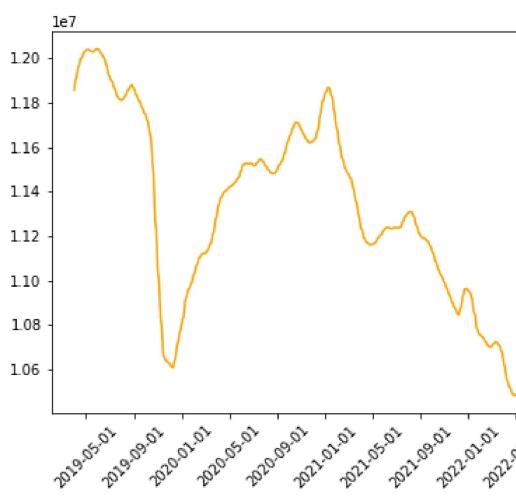
Sector Volume Factor: 1.1528457613891094

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

2022-06-17

2022-06-24

inner cv scores:

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

best inner cv score, sdev (11 folds): 4.567473579208203 5.14678224750561

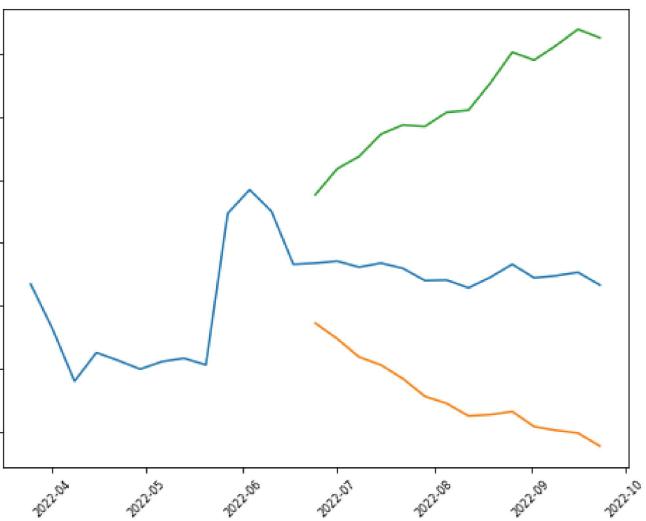
test cv mean error, stdev (10 folds): 4.293159706587295 5.32076774345972

sell date: 2022-07-01

expected return: 0.006554572839609505

discounted return: 0.0005026789957469635

quarter return: 1.0473203431010953



```

['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

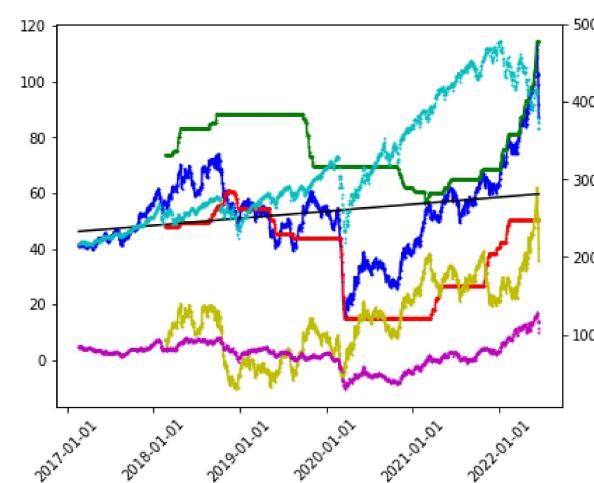
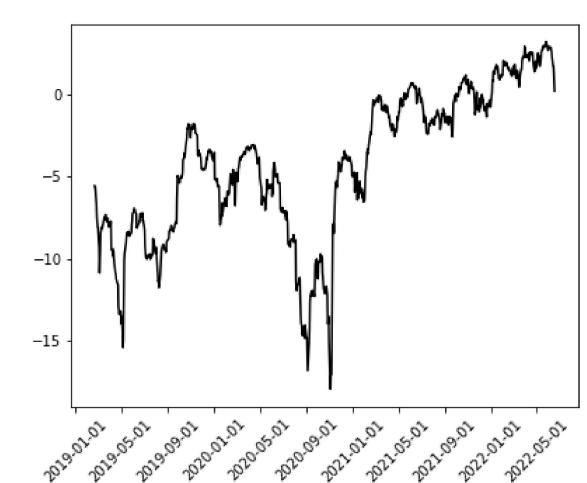
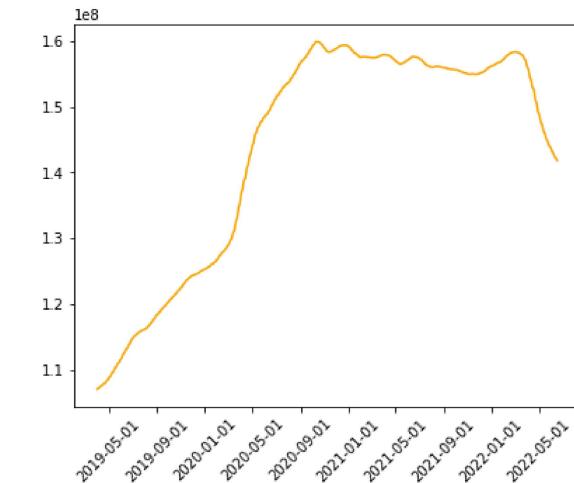
    shortRatio      totalCash totalCashPerShare      totalDebt totalRevenue \
MPC      2.78  10597000192      19.588  28034000896  135922999296

    trailingPE
MPC      4.97776

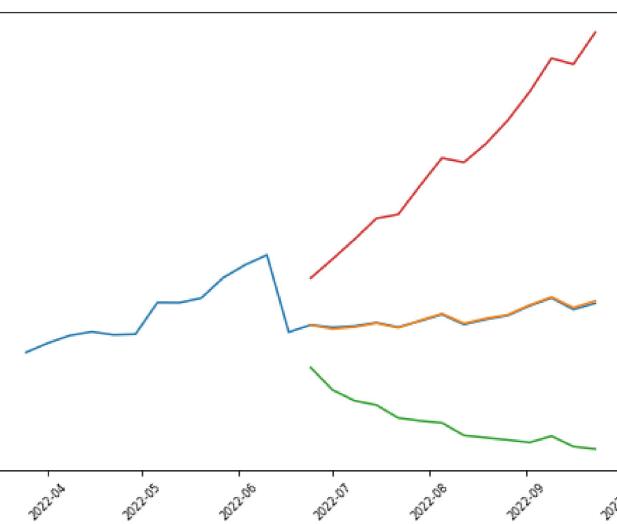
    Adj Close  21dBOLD  21dMA-TP  21dBOLU  90dSMA  90dSDev  90d_lower  90d_upper
2022-06-17  87.290001  89.493723  102.090159  114.686595  92.392331  8.807067  74.7778196  110.006465

```

volume_factor	volume_ip	volume_2y	price_2y	div	ratio
MPC	1.221452	87.290001	141817662.109375	0.691764	0.549549
I axis		r axis			
legend	symbol	sector	index	linear	factor
blue		magenta	cyan	red	orange
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
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', 'mul', False]
best inner cv score, sdev (11 folds): 143.4033947580166 157.92853994777207
test cv mean error, stdev (10 folds): 150.67304260862073 163.8726366020405
sell date: 2022-09-09
expected return: 0.10691313670911945
discounted return: 0.0012245465354387974
quarter return: 1.1191722615273865
```



```

['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

```

2022-06-17 290.899994 284.096885 302.232381 320.367877 296.315556 9.524706 277.266144 315.364968

volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst	
LLY	0.967658	290.899994	70977344.335938	0.829733	0.979741	0.407173

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

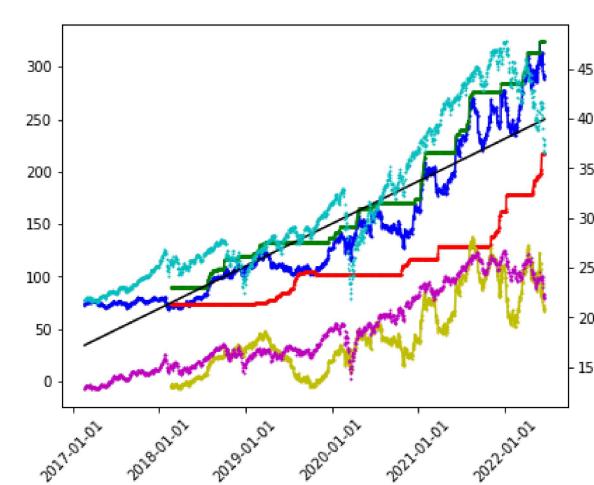
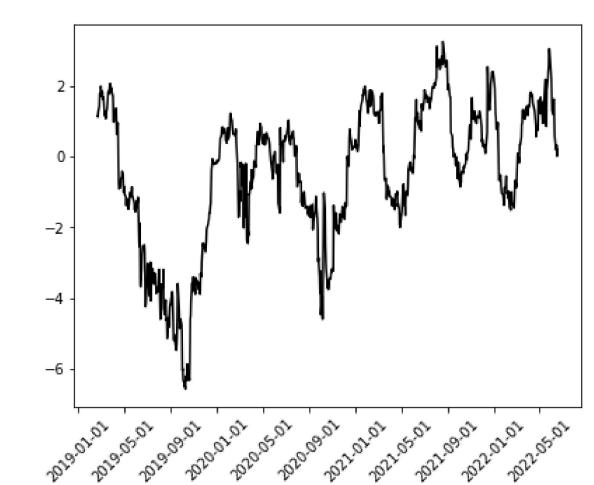
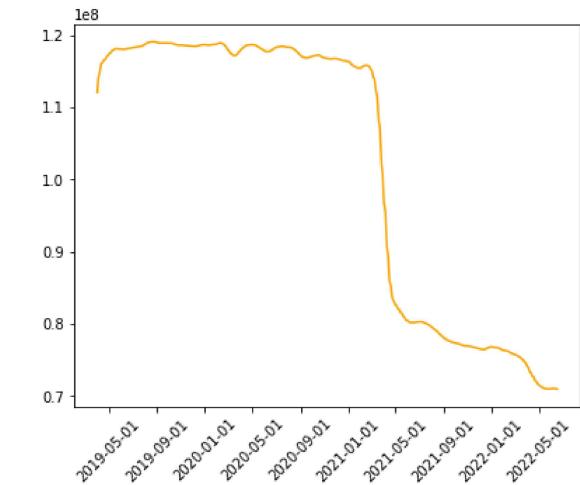
Sector Volume Factor: 1.2238851152317325

Sector Risk Trend Factor: -3.3236323632363236

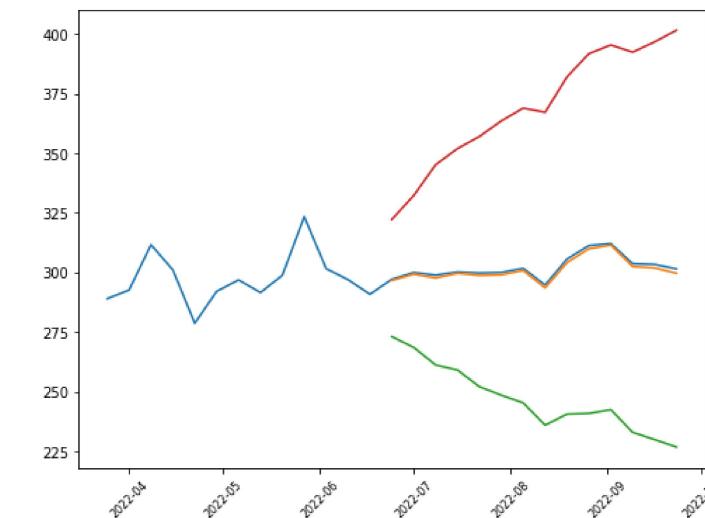
Index 1YMF: -287.8400573730469

Index Volume Factor: 1.1835166983613057

Index Risk Trend Factor: -3.791860877423899



ets next 13 weeks
2022-06-17
2022-06-24
inner cv scores:
best model: ['mul', 'mul', True]
best inner cv score, sdev (11 folds): 404.30063071188147 288.1894769788956
test cv mean error, stdev (10 folds): 433.70233236467345 286.09339973931145
sell date: 2022-09-02
expected return: 0.07317246303165768
discounted return: 0.0009296315831439639
quarter return: 1.0892467217652508



	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 \
```

	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
```

	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 \
```

	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
0.0258	6758239936
0.0177	4644434068
0.0171	4492389045
0.0107	2506198743
0.0089	2070303407
0.0086	2032317955
0.0069	1620192382
0.0069	1817135643
0.0068	1616168951
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

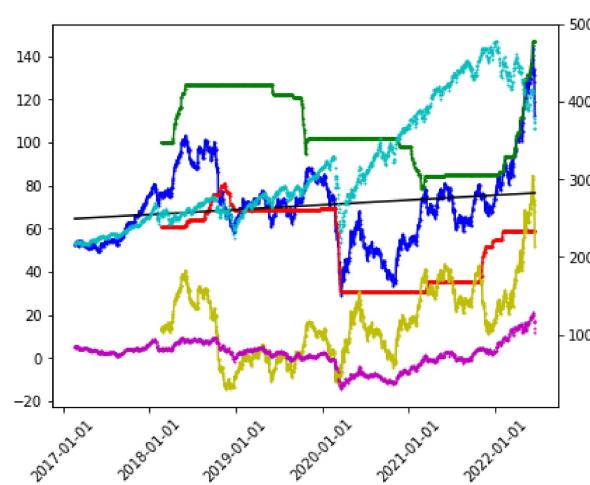
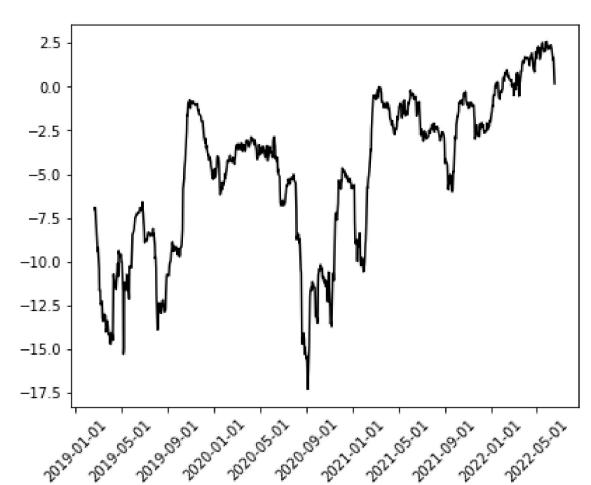
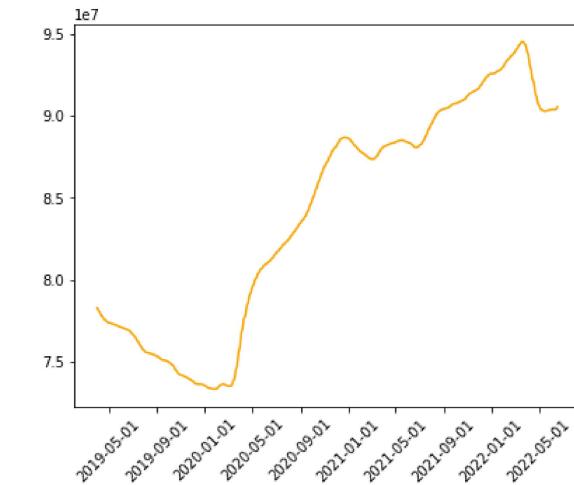
          sharesOutstanding shortRatio totalCash totalCashPerShare totalDebt \
VLO      408096000      1.46      2638000128      6.464      13160999936

          totalRevenue trailingPE
VLO  125765001216      18.10045

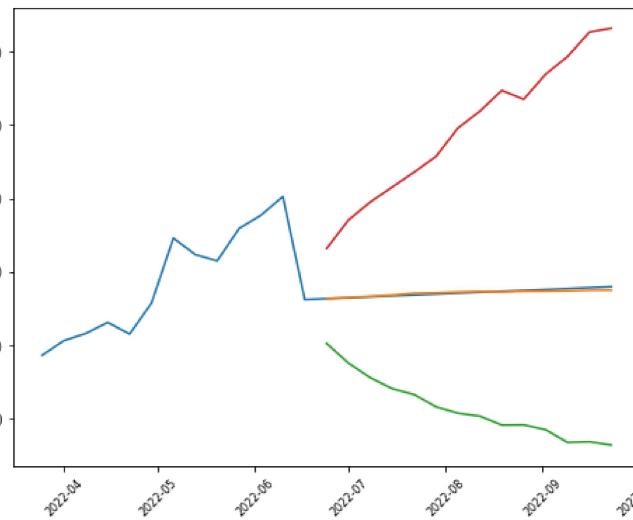
          Adj Close 21dBOLD 21dMA-TP 21dBOLU 90dSMA 90dSDev 90d_lower 90d_upper

```

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
2022-06-17
2022-06-24
inner cv scores:
best model: [None, 'mul', False]
best inner cv score, sdev (11 folds): 317.1522116457144 364.5902798516252
test cv mean error, stdev (10 folds): 348.4664863354353 368.0112218992618
sell date: 2022-09-23
expected return: 0.03125312454311619
discounted return: 0.0003173151639344063
quarter return: 1.029618519655626



```

['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

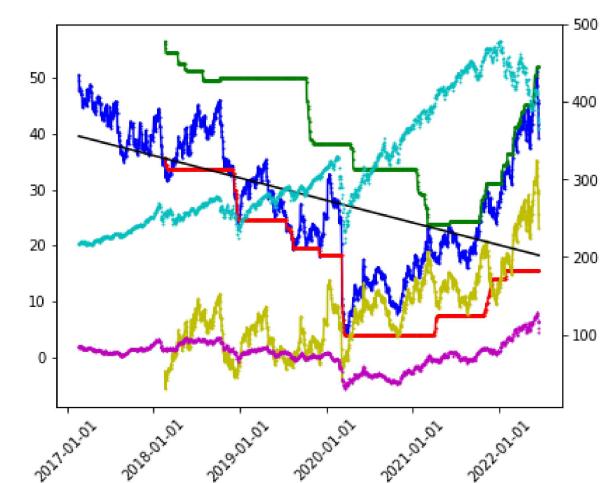
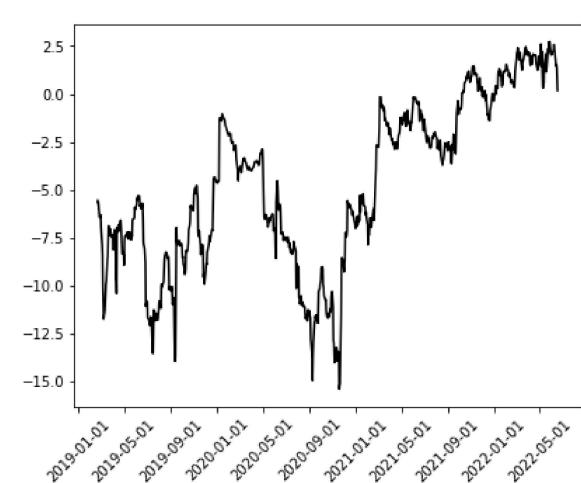
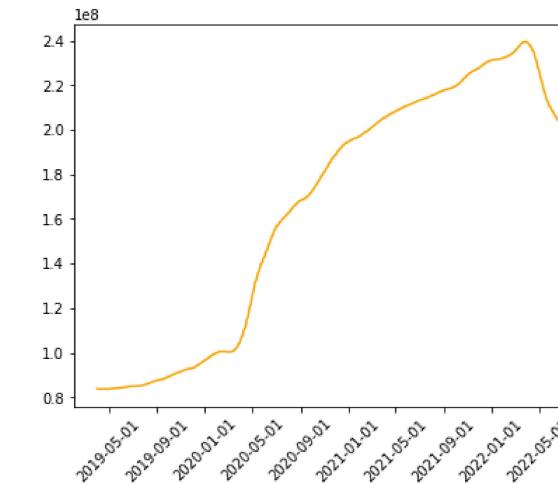
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper
2022-06-17	39.220001	39.703868	46.051746	52.399625	42.946032	3.294685	36.356662	49.535402

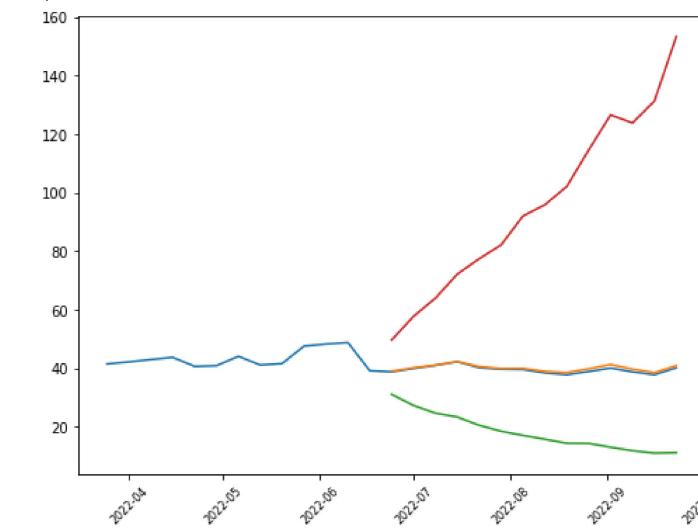
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
APA	0.999608	39.220001	204531248.4375	0.713933	0.302651	0.445144

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
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', 'mul', True]
best inner cv score, sdev (11 folds): 47.19517775857519 46.896895105345905
test cv mean error, stdev (10 folds): 51.47031682136132 47.097832210472035
sell date: 2022-07-15
expected return: 0.07803719469902784
discounted return: 0.002786912363174965
quarter return: 1.2918035249477826



	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

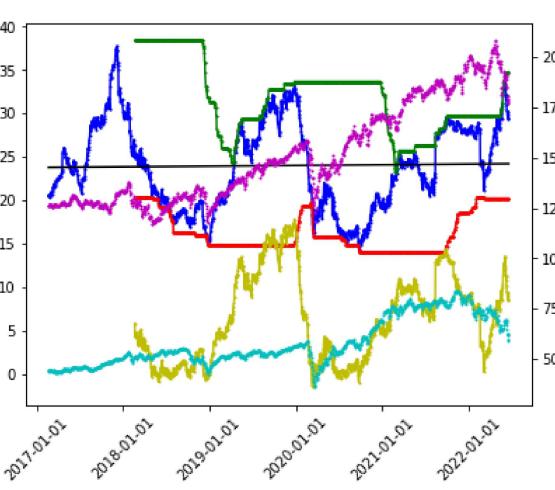
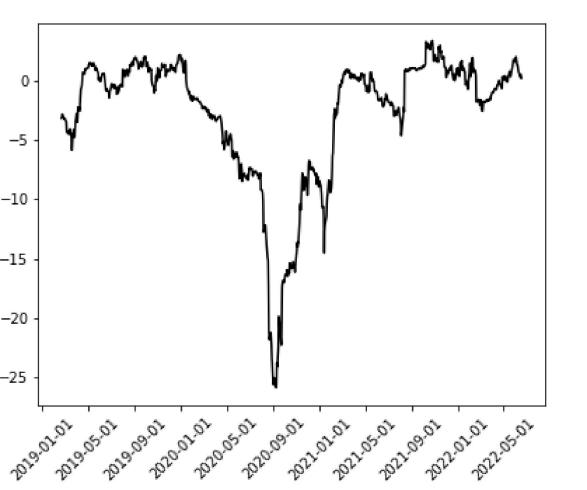
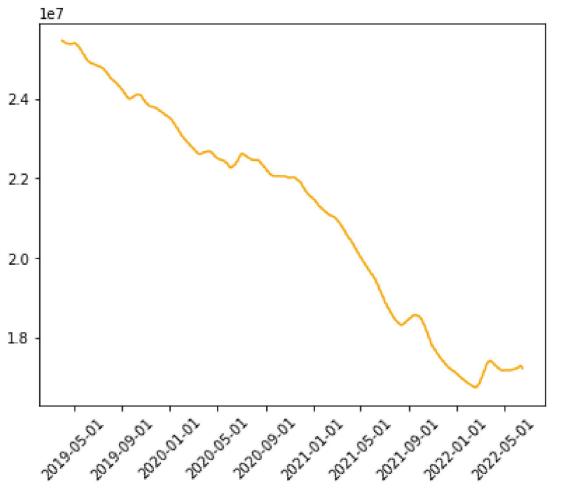
PPC 1.275425 29.34 17241312.5 0.741748 0.282386 0.556574

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

2022-06-17

2022-06-24

inner cv scores:

best model: [None, None]

best inner cv score, sdev (11 folds): 26.767895680888554 40.45510269367232

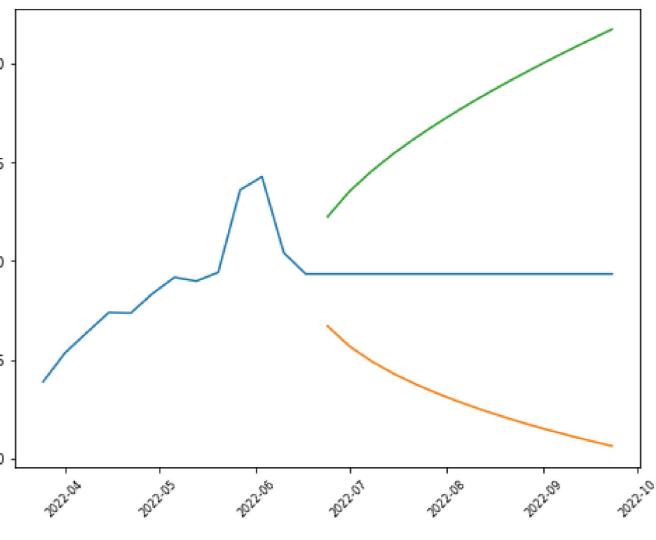
test cv mean error, stdev (10 folds): 28.55364065607615 42.01427294468685

sell date: 2022-06-24

expected return: 3.5831703451015226e-06

discounted return: 5.971941658966529e-07

quarter return: 1.0000549433561878



	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]
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Quarter			

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

['quarterly_financials',
 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 4355000000 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

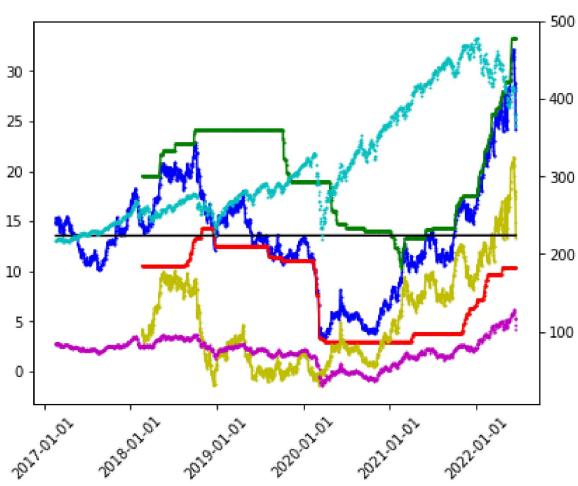
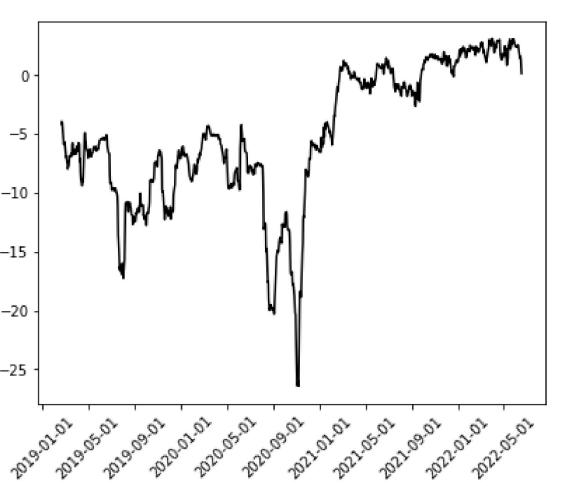
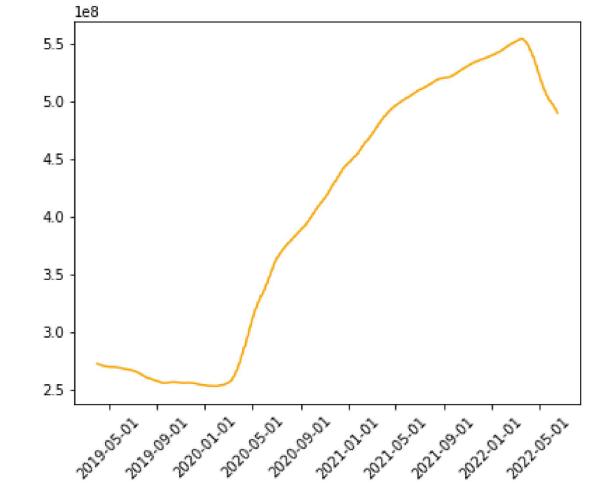
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MRO      1.000459    24.15 490057840.234375 0.691969 0.80545 0.53536
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l axis r axis

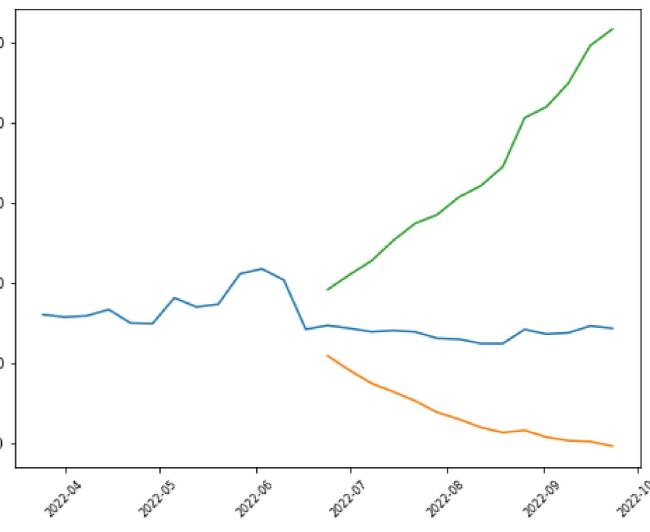
legend legend

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
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', 'add', True]
best inner cv score, sdev (11 folds): 12.692432412590874 12.658305738958342
test cv mean error, stdev (10 folds): 13.816439192514759 12.742004604225077
sell date: 2022-06-24
expected return: 0.01931126866256095
discounted return: 0.00319294870710074
quarter return: 1.340822605801948



	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 1180000000 97000000

2Q2021 1259000000 16000000

3Q2021	1439000000	184000000
4Q2021	1738000000	649000000]
['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	9400000.0	16700000.0
Interest Expense	-7400000.0	-5700000.0
Extraordinary Items	None	None
Non Recurring	None	None
Other Items	None	None
Income Tax Expense	3400000.0	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	-7200000.0	-6600000.0
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	96600000.0	90700000.0
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')]

['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      6770000000

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

          trailingPE
DVN 28.808342

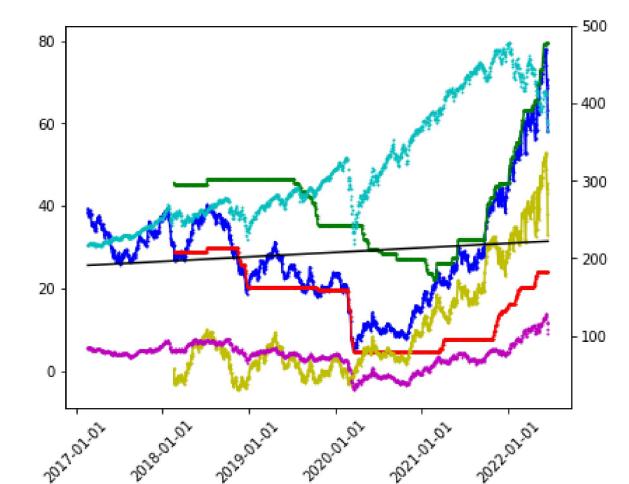
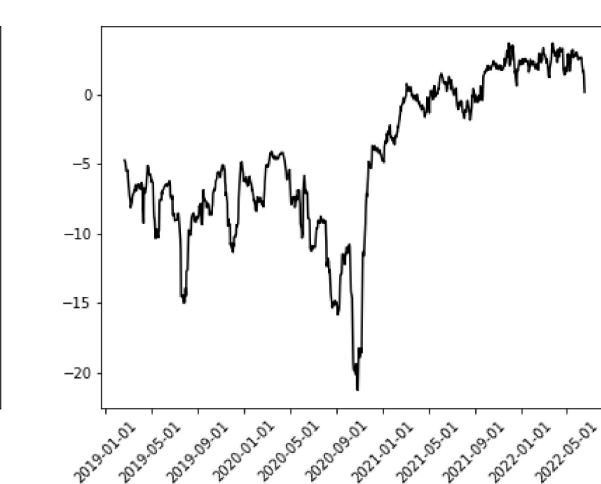
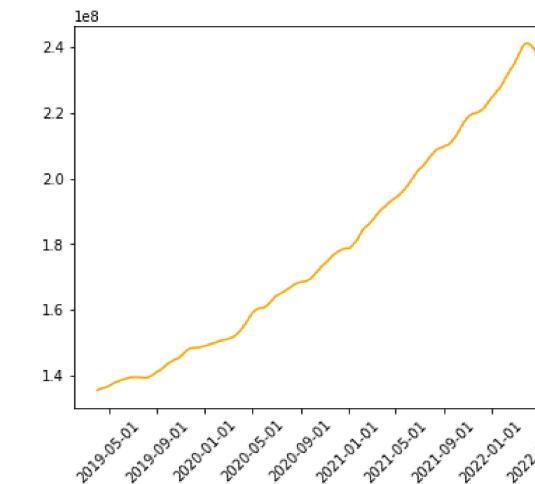
```

	Adj Close	21dBOLD	21dMA-TP	21dBOLU	90dSMA	90dSDev	90d_lower	90d_upper	
2022-06-17	58.02	63.067854		72.56	82.052146	65.759365	6.444488	52.870389	71.648034

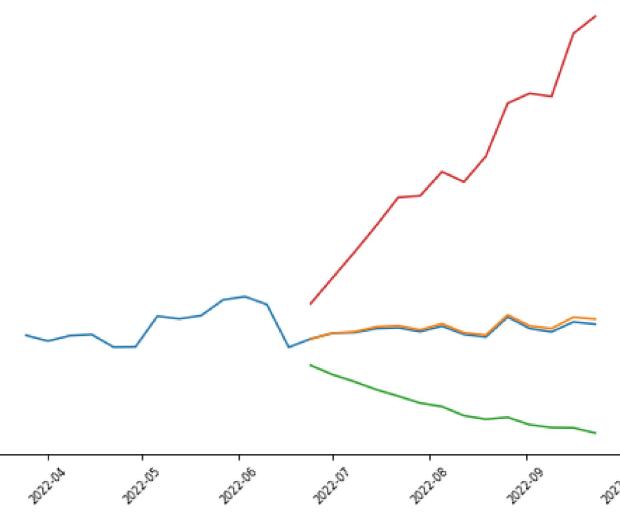
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	h
DVN	1.104104	58.02	237878397.65625	0.701688	0.885466	0.54

I axis		r axis	
legend		legend	
blue	symbol	magenta	sec
green	trailing_1yr_max	cyan	ind
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: -0.123305581352161
Index 1YMF: -287.8400573730469
Index Volume Factor: 1.1835166983613057
Index Risk Trend Factor: -3.791860877423899



ets next 13 weeks
2022-06-17
2022-06-24
inner cv scores:
best model: ['mul', 'mul', True]
best inner cv score, sdev (11 folds): 68.71417504199978 62.17975730670345
test cv mean error, stdev (10 folds): 74.8364635408426 61.97296178663387
sell date: 2022-08-26
expected return: 0.19567618412251
discounted return: 0.0025933841164804683
quarter return: 1.2690676450165288



	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	2.090000e+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	1.500000e+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	137000000.0	137000000.0
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
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	165500000.0	129100000.0
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	-234000000.0
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 \
```

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
```

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

2022-06-17 219.380005 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
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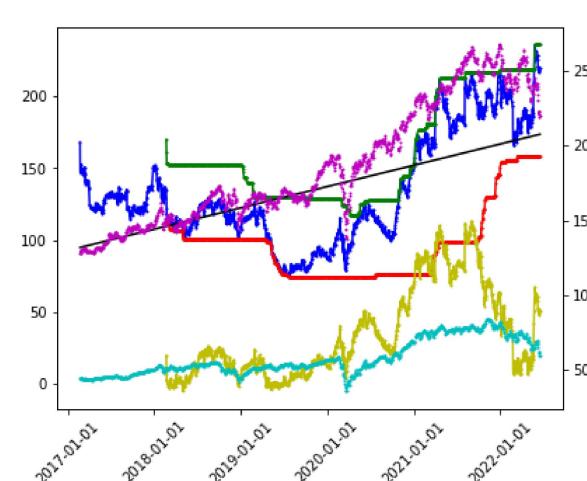
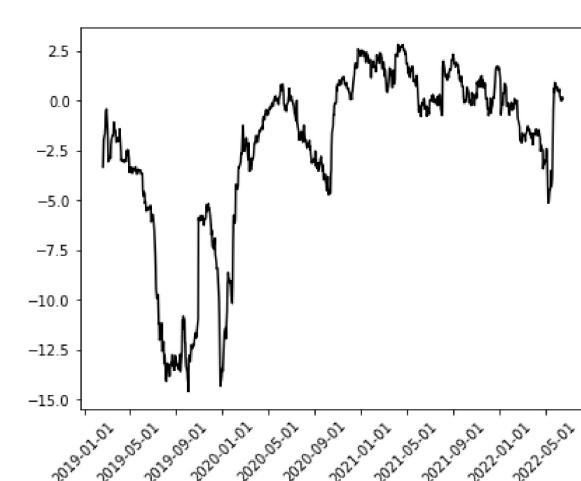
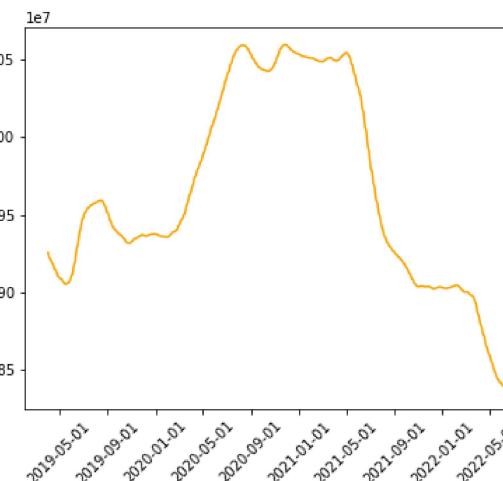
UTHR 1.481235 219.380005 8360250.78125 0.878858 0.826178 0.414478

l axis r axis

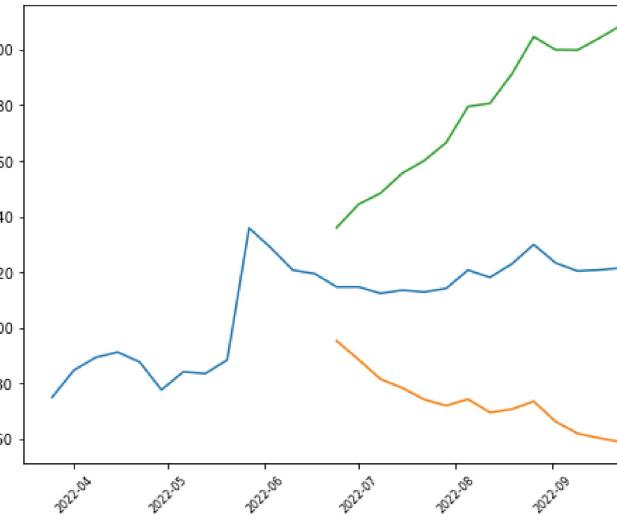
legend legend

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
 2022-06-17
 2022-06-24
 inner cv scores:
 best model: ['add', None]
 best inner cv score, sdev (11 folds): 531.9683167236265 452.06536333131106
 test cv mean error, stdev (10 folds): 561.1667761631824 464.1350765775999
 sell date: 2022-08-26
 expected return: 0.04782932199603667
 discounted return: 0.0006773410592377793
 quarter return: 1.0642754964010441



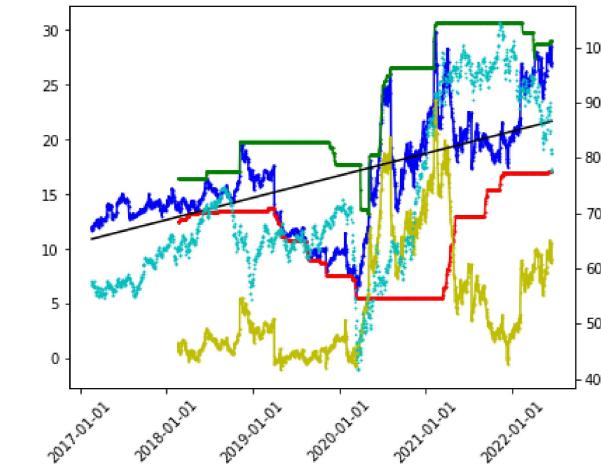
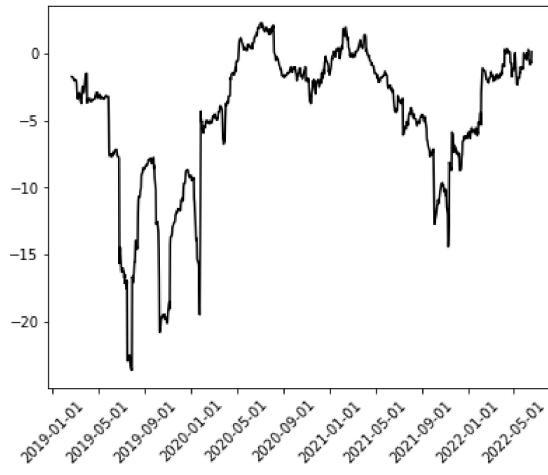
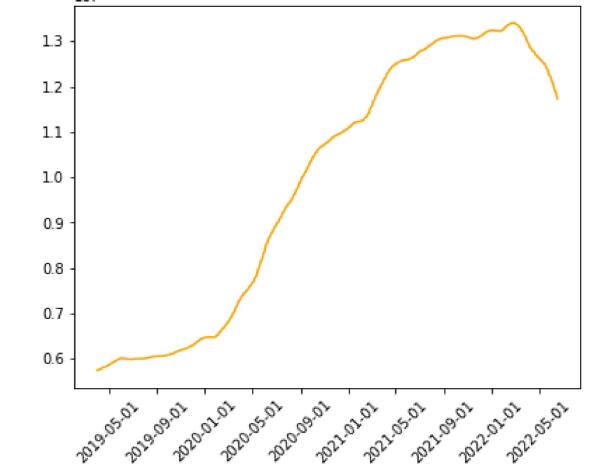
['options', ('2022-08-19',)],
 ['sustainability',
 2022-5
 palmOil False
 controversialWeapons False
 gambling False
 socialScore 16.62
 nuclear False
 furLeather False
 alcoholic False
 gmo False
 catholic False
 socialPercentile None
 peerCount 83
 governanceScore 7.41
 environmentPercentile None
 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	90dSDDev	90d_lower	90d_upper
2022-06-17	28.5	25.427799	27.012222	28.596646	26.44746	1.162243	24.122974	28.771947

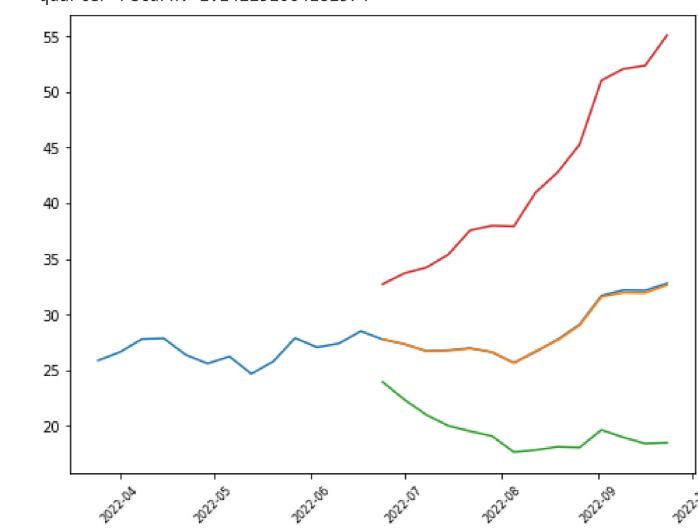
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
VIVO	0.591657	28.5	11730103.320312	0.878325	0.565494	0.431737

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
 2022-06-17
 2022-06-24
 inner cv scores:
 best model: ['add', 'mul', False]
 best inner cv score, sdev (11 folds): 13.78828049725383 13.738014693840999
 test cv mean error, stdev (10 folds): 15.089252687370422 13.74731059302835
 sell date: 2022-09-23
 expected return: 0.15053752325427533
 discounted return: 0.0014467077899793512
 quarter return: 1.142251064182574



```
[ '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

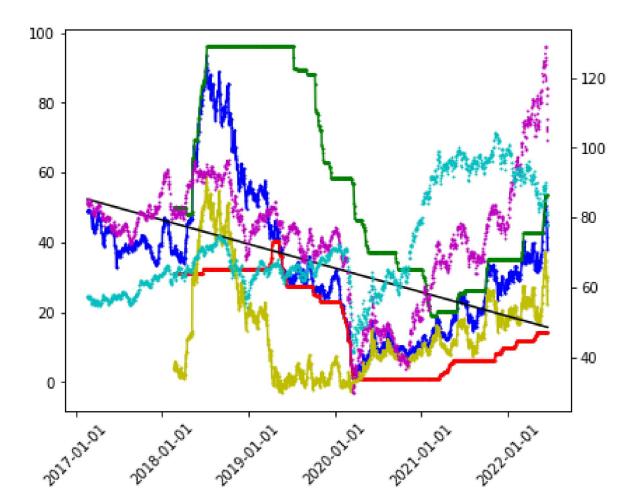
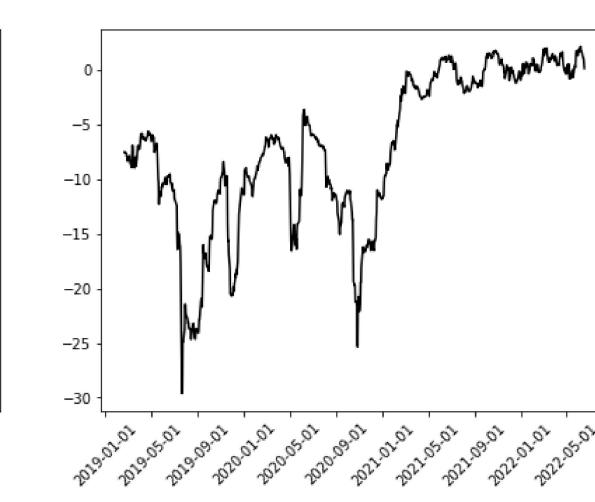
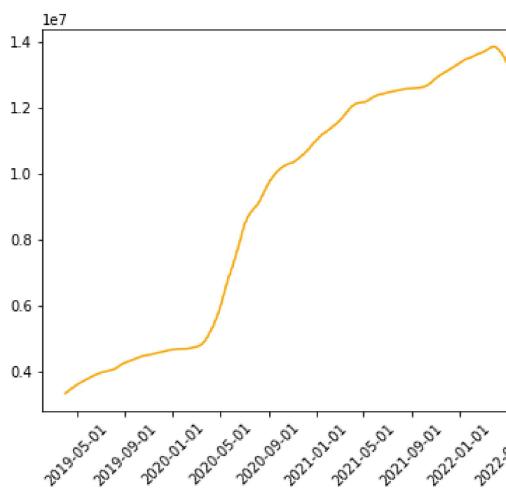
Sector Volume Factor: 0.8966412344901694

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

2022-06-17

2022-06-24

inner cv scores:

best model: [None, None]

best inner cv score, sdev (11 folds): 73.68165632851665 104.52540939563205

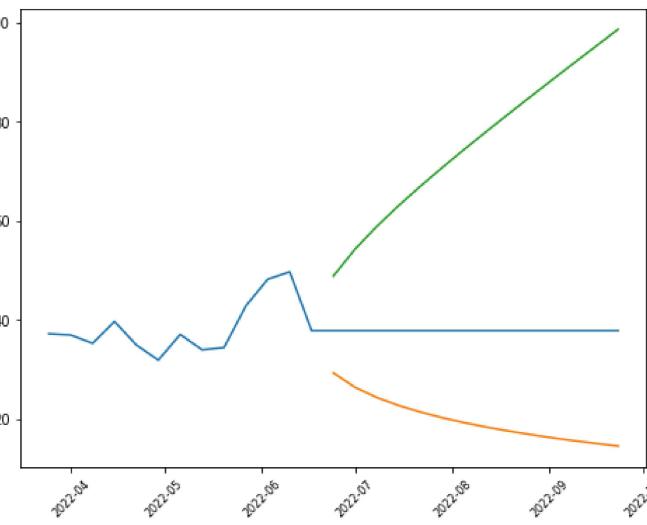
test cv mean error, stdev (10 folds): 78.01204327647841 108.68230107955519

sell date: 2022-06-24

expected return: 2.7276508304821144e-05

discounted return: 4.546033051111564e-06

quarter return: 1.0004183215621212



['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

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

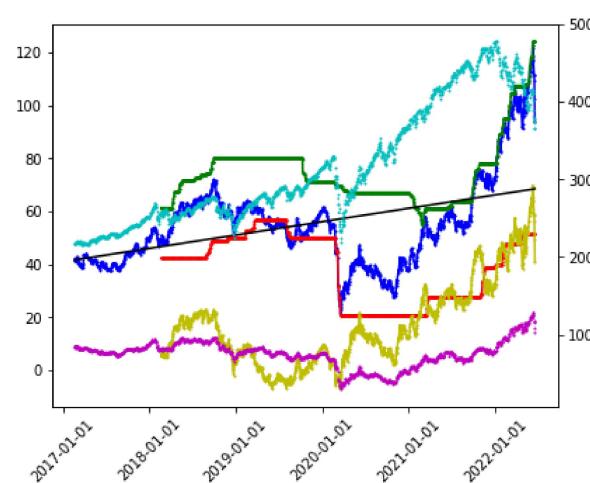
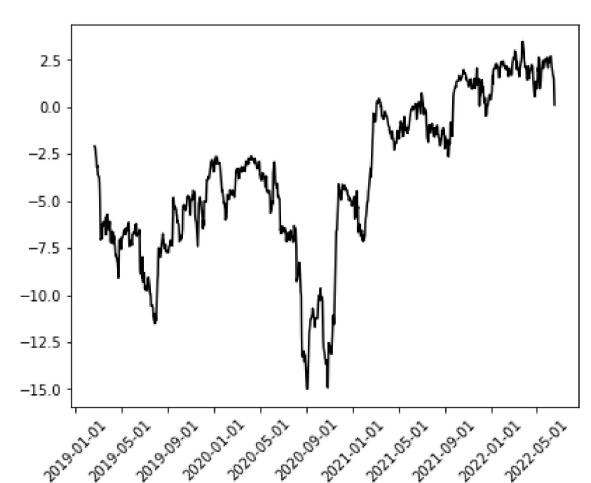
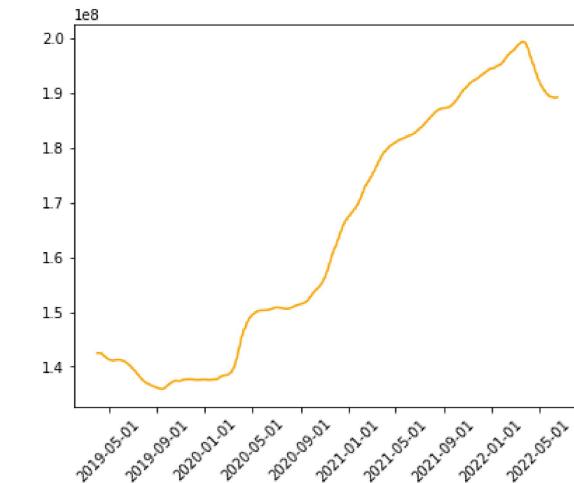
Sector Volume Factor: 0.8966412344901694

Sector Risk Trend Factor: -0.12330558135216596

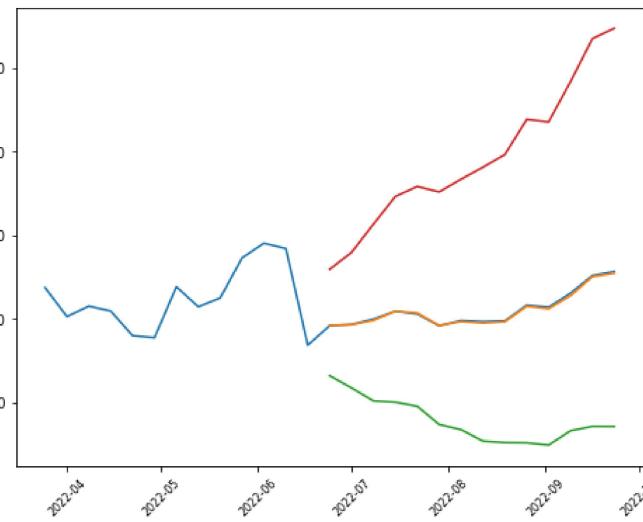
Index 1YMF: -287.8400573730469

Index Volume Factor: 1.1835166983613057

Index Risk Trend Factor: -3.791860877423899



ets next 13 weeks
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', 'mul', False]
best inner cv score, sdev (11 folds): 146.57805524621241 144.15463593023645
test cv mean error, stdev (10 folds): 160.23698597176514 144.244439582369
sell date: 2022-09-23
expected return: 0.18761434275396785
discounted return: 0.0017742168152898863
quarter return: 1.1771347611364196



```

['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

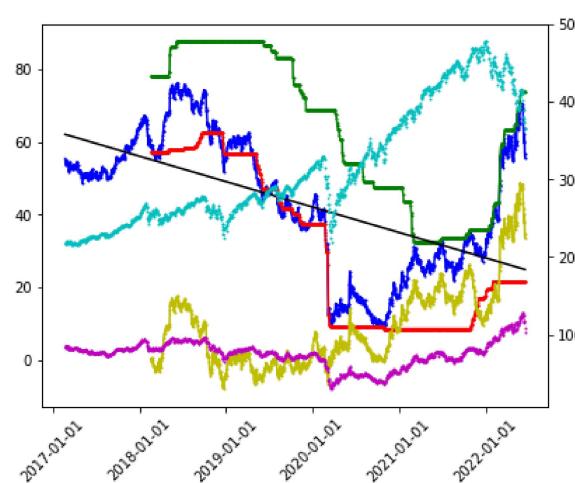
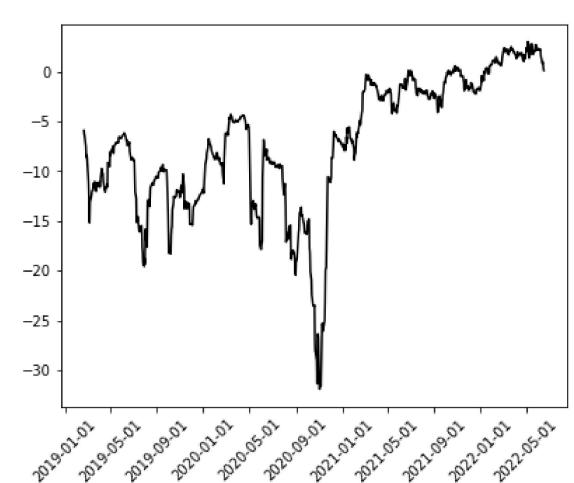
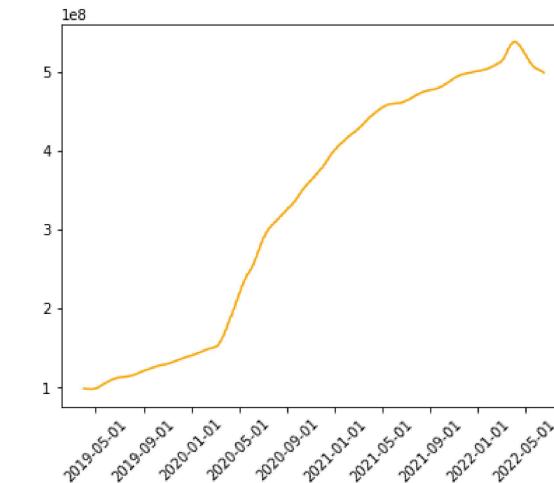
```

	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

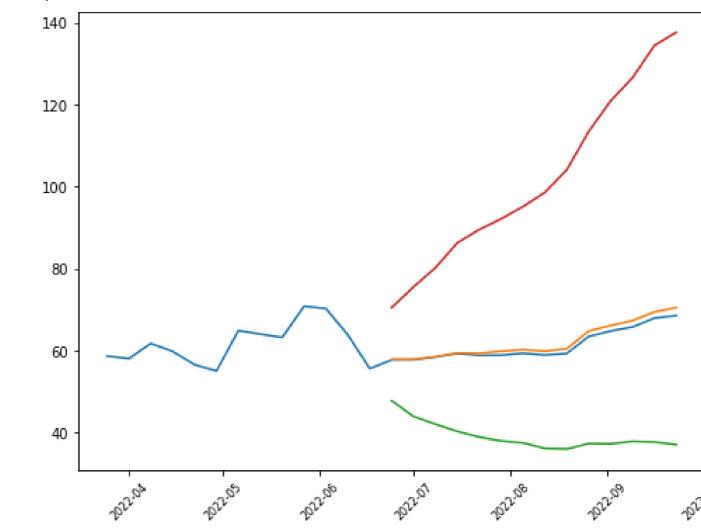
	volume_factor	latest_p	vol_30d_2yr	pct_2yr	adf	hurst
OXY	1.190976	55.68	498984476.953125	0.71978	0.690434	0.542013

	l axis	r axis
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
2022-06-17
2022-06-24
inner cv scores:
best model: ['add', 'mul', False]
best inner cv score, sdev (11 folds): 67.21993373712324 59.73887066111215
test cv mean error, stdev (10 folds): 72.475170600916 60.18150263676098
sell date: 2022-09-23
expected return: 0.23160518895383148
discounted return: 0.002149919628264385
quarter return: 1.21845089162151
```



```

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

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

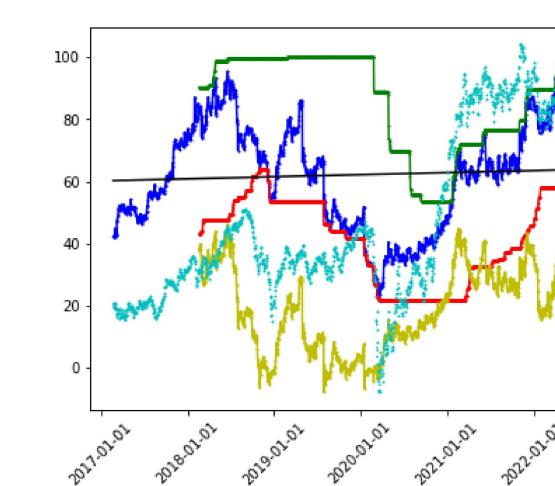
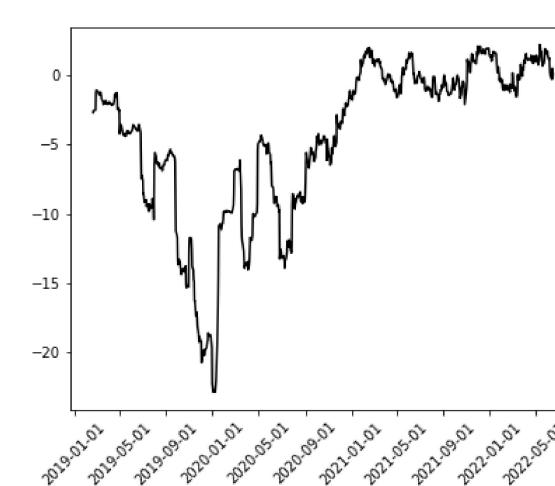
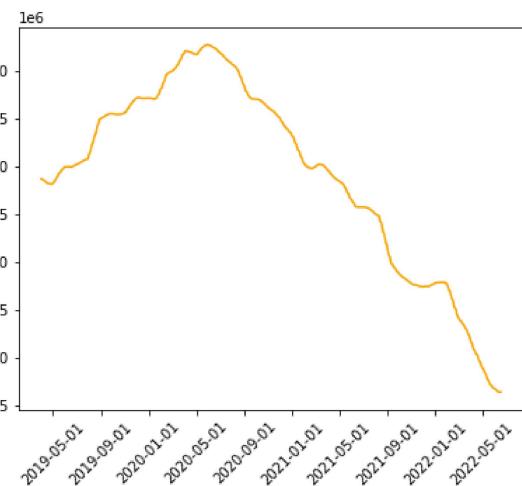
I axis

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

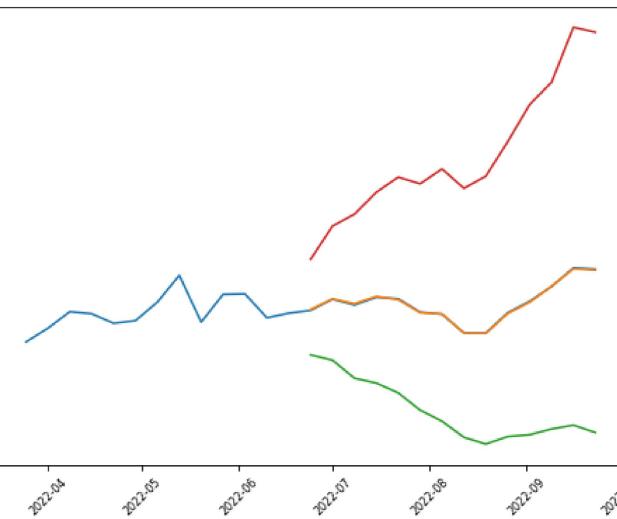
R axis

legend	legend
magenta	sector
cyan	index

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



ets next 13 weeks
2022-06-17
2022-06-24
inner cv scores:
best model: ['mul', None]
best inner cv score, sdev (11 folds): 108.84844216056213 108.3305131858911
test cv mean error, stdev (10 folds): 117.69850070122239 109.76106620833859
sell date: 2022-09-16
expected return: 0.117659139799815
discounted return: 0.0012367246066797843
quarter return: 1.1204253223659248



	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																
CEIX	0.703694	2022-09-16	39.043539	90	0.005938	1.723985	36.226317	60.302806	False	36.015583	179.258066	46.150002	Energy	SP600	0.784969	1.306670
AZPN	0.266130	2022-08-05	191.250372	48	0.004928	1.571870	536.281428	511.570565	False	184.958582	310.577160	189.199997	Technology	SP400	2.834468	2.703861
GO	0.127318	2022-07-22	38.488688	34	0.003531	1.383028	23.788533	17.286792	False	34.838240	58.804077	40.150002	Consumer Defensive	SP400	0.592491	0.430555
MRO	0.019311	2022-06-24	22.722915	6	0.003193	1.340823	13.816439	12.742005	False	20.829462	29.091750	24.150000	Energy	SP500	0.572109	0.527619
APA	0.078037	2022-07-15	34.652185	27	0.002787	1.291804	51.470317	47.097832	False	23.401851	72.199192	39.220001	Energy	SP500	1.312349	1.200863
DVN	0.195676	2022-08-26	55.600653	69	0.002593	1.269068	74.836464	61.972962	False	31.745381	149.517122	58.020000	Energy	SP500	1.289839	1.068131
OXY	0.231605	2022-09-23	52.689332	97	0.002150	1.218451	72.475171	60.181503	False	37.114114	137.681356	55.680000	Energy	SP500	1.301637	1.080846
VPU	0.027129	2022-07-01	139.692828	13	0.002061	1.208564	285.003324	656.825284	False	134.258472	157.200137	141.440002	error	nan	2.015012	4.643844
TVTY	0.107950	2022-08-12	28.370434	55	0.001866	1.187052	19.958987	15.095907	False	17.720075	69.815012	32.130001	error	SP600	0.621195	0.469838
VNQ	0.011191	2022-06-24	85.823057	6	0.001857	1.186067	167.133480	335.246219	False	82.964663	94.792159	87.699997	error	nan	1.905741	3.822648
LNTH	0.180050	2022-09-16	55.858596	90	0.001841	1.184399	42.361418	59.407851	False	39.336281	130.518116	60.720001	Healthcare	SP600	0.697652	0.978390
COP	0.187614	2022-09-23	92.258599	97	0.001774	1.177135	160.236986	144.244440	False	74.317474	169.498786	93.739998	Energy	SP500	1.709377	1.538772
FCN	0.136413	2022-09-02	158.195205	76	0.001684	1.167423	109.639132	46.897924	False	140.059723	240.993608	164.020004	error	SP400	0.668450	0.285928
ROG	0.141909	2022-09-09	243.123607	83	0.001600	1.158459	1106.816691	1545.323948	False	176.094236	496.726106	259.380005	error	SP600	4.267163	5.957761
SAFM	0.061346	2022-07-29	201.790554	41	0.001453	1.142932	459.890089	617.424184	False	176.827922	276.428658	208.309998	Consumer Defensive	SP400	2.207720	2.963968
VIVO	0.150538	2022-09-23	25.787355	97	0.001447	1.142251	15.089253	13.747311	False	18.479650	55.074628	28.500000	error	SP600	0.529447	0.482362
BANF	0.035293	2022-07-15	90.123403	27	0.001285	1.125451	118.635699	88.263651	False	80.750862	122.187345	94.860001	error	SP600	1.250640	0.930462
MGPI	0.117659	2022-09-16	87.798993	90	0.001237	1.120425	117.698501	109.761066	False	66.046145	162.382737	93.139999	error	SP600	1.263673	1.178453
MPC	0.106913	2022-09-09	83.505263	83	0.001225	1.119172	150.673043	163.872637	False	58.913545	162.024290	87.290001	Energy	SP500	1.726120	1.877336
MDYG	0.082567	2022-08-26	58.996999	69	0.001150	1.111577	92.566300	171.541962	False	53.929058	78.355528	59.930000	error	nan	1.544574	2.862372
VIS	0.070728	2022-08-26	158.178942	69	0.000991	1.095399	522.769332	837.226282	False	141.401483	208.025868	159.809998	error	nan	3.271193	5.238886
LLY	0.073172	2022-09-02	285.779513	76	0.000930	1.089247	433.702332	286.093400	False	242.510259	395.449392	290.899994	Healthcare	SP500	1.490898	0.983477
VDE	0.083754	2022-09-16	100.482864	90	0.000894	1.085693	212.289077	224.133796	False	70.693429	183.953627	102.349998	error	nan	2.074148	2.189876
SLY	0.055532	2022-08-26	76.489281	69	0.000784	1.074720	137.652934	194.205069	False	65.896695	103.418064	78.089996	error	nan	1.762747	2.486939
TWI	0.073936	2022-09-23	16.068676	97	0.000736	1.069995	4.868335	6.397286	False	8.676500	40.519143	17.520000	Industrials	SP600	0.277873	0.365142
WRB	0.068267	2022-09-16	64.971031	90	0.000734	1.069836	37.077873	65.039031	False	56.832128	92.111429	66.820000	Financial Services	SP500	0.554892	0.973347
SJI	0.070747	2022-09-23	32.889464	97	0.000705	1.066981	8.673775	8.038840	False	25.998074	51.580453	34.200001	error	SP600	0.253619	0.235054
VAW	0.004089	2022-06-24	158.825796	6	0.000680	1.064576	311.019484	418.064742	False	152.859283	174.389166	162.800003	error	nan	1.910439	2.567965
UTHR	0.047829	2022-08-26	204.891892	69	0.000677	1.064275	561.166776	464.135077	False	173.434608	304.676821	219.380005	Healthcare	SP400	2.557967	2.115667
VDC	0.031438	2022-08-12	174.298393	55	0.000563	1.053142	195.945343	249.963928	False	162.609504	203.779047	177.059998	error	nan	1.106661	1.4111747
VOX	0.039138	2022-08-26	89.953669	69	0.000557	1.052521	142.340034	124.210714	False	80.503471	115.879259	92.860001	error	nan	1.532846	1.337613
VFH	0.037342	2022-08-26	74.556802	69	0.000531	1.050097	110.844841	128.669516	False	63.537636	97.062488	75.849998	error	nan	1.461369	1.696368
SPTM	0.003188	2022-06-24	44.300396	6	0.000531	1.050018	28.190470	43.995278	False	43.146336	47.886053	45.310001	error	nan	0.622169	0.970984
MCK	0.046541	2022-09-16	289.437101	90	0.000506	1.047600	436.745527	368.056923	False	239.472835	410.629816	300.570007	Healthcare	SP500	1.453058	1.224530
PLAB	0.															

	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																
XOM	-0.004465	2022-06-24	82.113684	6	-0.000746	0.933681	148.367528	166.701993	False	78.858756	94.164821	86.120003	Energy	SP500	1.722800	1.935694
SM	-0.022212	2022-06-24	34.516857	6	-0.003737	0.708632	41.847934	46.453123	False	30.205741	49.911420	39.709999	Energy	SP600	1.053839	1.169809