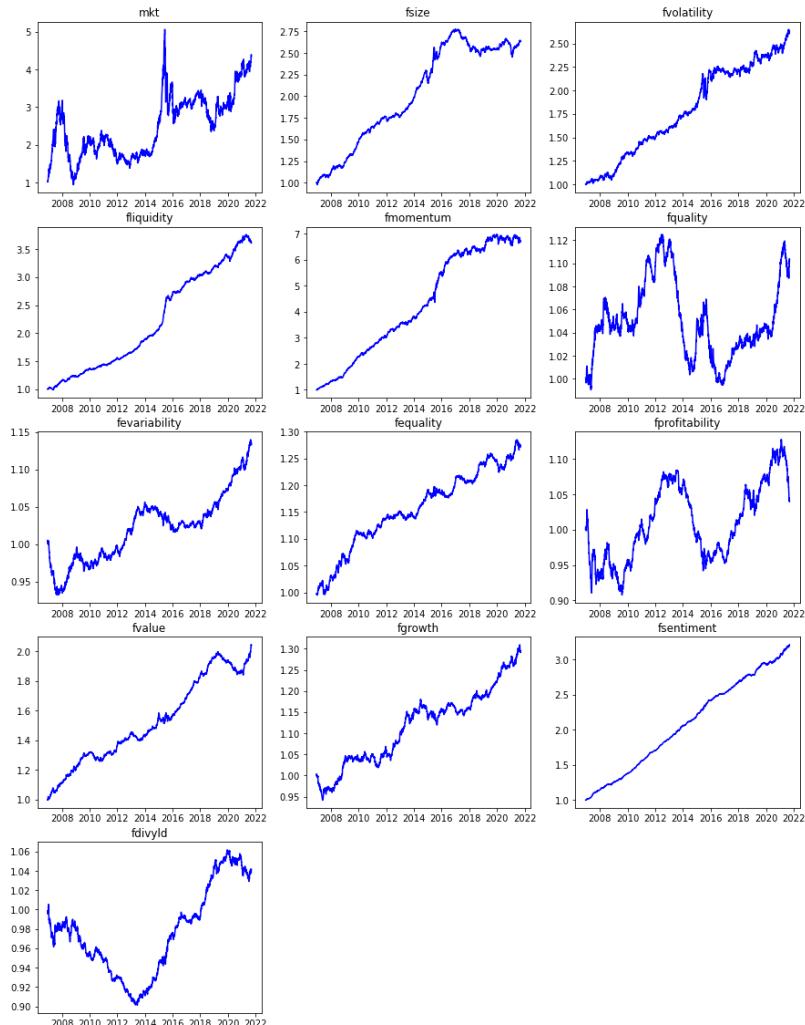


- 1) Generate the descriptive stats (N, annualized return, annualized volatility, sharpe ratio etc) for the variables in the dataset

	annualized_return	annualized_volatility	sharpe_ratio				
mkt	0.104568	0.277892	0.507843	<b>SW330000</b>	0.027622	0.111204	0.307275
fsize	-0.064783	0.033402	-2.043902	<b>SW340000</b>	0.076516	0.134535	0.630412
<b>fvolatility</b>	0.067844	0.060427	1.146861	<b>SW710000</b>	0.053306	0.118975	0.507980
fliquidity	-0.084416	0.031143	-2.894380	<b>SW640000</b>	-0.001008	0.067269	0.018177
<b>fmomentum</b>	-0.123896	0.057164	-2.348890	<b>SW410000</b>	-0.065442	0.091736	-0.712439
fquality	0.006609	0.019357	0.359446	<b>SW370000</b>	0.068565	0.114257	0.653522
<b>fvariability</b>	-0.008778	0.015058	-0.594246	<b>SW730000</b>	0.028757	0.139846	0.277817
fequality	0.016431	0.014761	1.142134	<b>SW460000</b>	0.006979	0.167915	0.126303
<b>fprofitability</b>	0.002632	0.026927	0.113782	<b>SW220000</b>	0.012717	0.066609	0.223531
fvalue	0.049662	0.028138	1.784614	<b>SW230000</b>	-0.068347	0.164901	-0.359214
<b>fgrowth</b>	0.017598	0.019817	0.914670	<b>SW510000</b>	0.028103	0.101556	0.331192
fsentiment	0.082293	0.013801	5.897192	<b>SW350000</b>	-0.086825	0.095592	-0.928643
fdivyld	0.002785	0.014148	0.207635	<b>SW270000</b>	0.045932	0.103621	0.497192
<b>SW480000</b>	-0.102265	0.176838	-0.538549	<b>SW240000</b>	0.064628	0.167586	0.487433
<b>SW430000</b>	-0.072787	0.146513	-0.456930	<b>SW110000</b>	0.071511	0.153184	0.539435
<b>SW610000</b>	0.028864	0.131973	0.287240	<b>SW620000</b>	-0.022329	0.102078	-0.176515
<b>SW420000</b>	-0.095879	0.091660	-1.084228				
<b>SW720000</b>	-0.035261	0.133313	-0.210317				
<b>SW630000</b>	0.055132	0.102289	0.590240				
<b>SW450000</b>	-0.058651	0.081411	-0.722322				
<b>SW360000</b>	-0.049852	0.081551	-0.603671				
<b>SW280000</b>	-0.013536	0.105078	-0.080982				
<b>SW490000</b>	-0.013516	0.200705	0.029766				
<b>SW210000</b>	-0.045733	0.175180	-0.187494				
<b>SW650000</b>	0.055624	0.199510	0.388178				

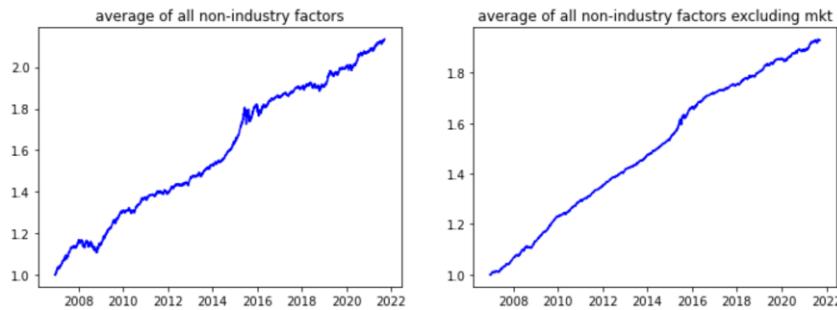
- 2) Plot the cumulative returns for the non-industry factors



- 3) Compute composite benchmark: i) a simple average of all non-industry factors; ii) a simple average of all non-industry factors excluding mkt
- 4) Do step 1) and 2) for the above benchmarks

Reversed ['fsize', 'fliquidity','fmomentum','fevariability']

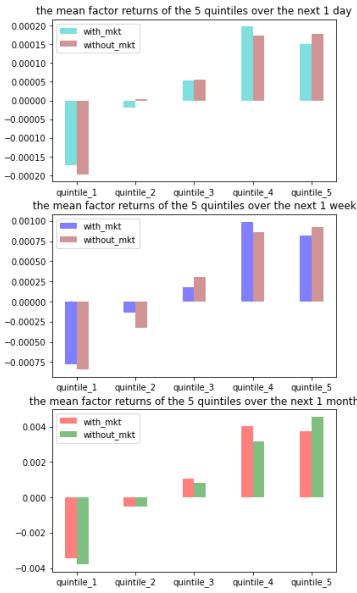
	annualized_return	annualized_volatility	sharpe_ratio
<b>mean of non-industry factors</b>	0.052724	0.027808	1.913098
<b>mean of all except mkt</b>	0.045586	0.010317	4.446185



- 5) test whether prevailing mean of past factor returns has predictive power with respect to the cross-sectional rank of factor returns (with and without mkt)
  - a) Prevailing mean(PVM)=average factor return of the factor from the beginning of the sample period until the current month
  - b) Check the cross-sectional correlations (pearson and spearman) between PVM and cumulative factor returns over the next 1 day, 1 week and 1 month, then compute the mean, std, t-stat of the three correlations.

spearman_month	spearman_week	spearman_day	pearson_month	pearson_week	pearson_day
<b>mean</b>	0.21469	0.41423	0.037253	0.226682	0.448946
<b>std</b>	0.21482	0.197267	0.244602	0.258534	0.230801
<b>t_value</b>	0.577001	1.212343	0.577001	0.50622	1.12304
<b>spearman_month_without_mkt</b>	<b>spearman_week_without_mkt</b>	<b>spearman_day_without_mkt</b>	<b>pearson_month_without_mkt</b>		
<b>mean</b>	0.215269	0.416025	0.038416	0.225344	
<b>std</b>	0.214688	0.198434	0.247454	0.251918	
<b>t_value</b>	0.01674	0.035001	0.01674	0.014933	
<b>pearson_week_without_mkt</b>	<b>pearson_day_without_mkt</b>				
0.449675	0.020006				
0.229066	0.303972				
0.032773	0.001099				

- c) Each day, rank all the factors into 5 quintiles based on their PVM and plot the mean factor returns of the 5 quintiles over the next 1 day, 1 week and 1 month



- d) Compute the portfolio annualized return, volatility and sharpe ratio of the 5 quintiles as well as the hedge portfolio (quintile 5-quintile 1) for the above portfolio for portfolio returns over the 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> day after the portfolio formation.

PVM with window size 500days(rolling)

	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	0.091518	0.060386	1.762287
2nd_the_hedge_portfolio	0.094228	0.06045	1.809525
3rd_the_hedge_portfolio	0.092055	0.060658	1.764359
4th_the_hedge_portfolio	0.08892	0.060549	1.710724
5th_the_hedge_portfolio	0.085532	0.06055	1.649204
1st_the_hedge_portfolio_without_mkt	0.092063	0.05942	1.800021
2nd_the_hedge_portfolio_without_mkt	0.09226	0.059623	1.797691
3rd_the_hedge_portfolio_without_mkt	0.091304	0.059552	1.782219
4th_the_hedge_portfolio_without_mkt	0.087038	0.059385	1.708275
5th_the_hedge_portfolio_without_mkt	0.086412	0.059712	1.687703

PVM start from the 500<sup>th</sup> day

	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	0.060874	0.059346	1.218933
2nd_the_hedge_portfolio	0.061141	0.059343	1.224066
3rd_the_hedge_portfolio	0.059663	0.059305	1.196721
4th_the_hedge_portfolio	0.060928	0.059299	1.22087
5th_the_hedge_portfolio	0.058522	0.059339	1.174394
1st_the_hedge_portfolio_without_mkt	0.061018	0.058056	1.247495
2nd_the_hedge_portfolio_without_mkt	0.061652	0.058094	1.259013
3rd_the_hedge_portfolio_without_mkt	0.062766	0.058298	1.276301
4th_the_hedge_portfolio_without_mkt	0.063458	0.058313	1.289335
5th_the_hedge_portfolio_without_mkt	0.059456	0.058417	1.210054

PVM with window size 750 days(rolling)

	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	0.06283	0.059065	1.370268
2nd_the_hedge_portfolio	0.064783	0.059293	1.405465
3rd_the_hedge_portfolio	0.063497	0.059309	1.378635
4th_the_hedge_portfolio	0.061195	0.059396	1.329284
5th_the_hedge_portfolio	0.05938	0.059922	1.281015
1st_the_hedge_portfolio_without_mkt	0.073434	0.058069	1.615003
2nd_the_hedge_portfolio_without_mkt	0.071067	0.058157	1.563276
3rd_the_hedge_portfolio_without_mkt	0.068282	0.057964	1.509923
4th_the_hedge_portfolio_without_mkt	0.064575	0.05853	1.418705
5th_the_hedge_portfolio_without_mkt	0.065622	0.058673	1.437142

PVM start from the 500<sup>th</sup> day

	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	0.053935	0.057614	1.213708
2nd_the_hedge_portfolio	0.05362	0.057591	1.207416
3rd_the_hedge_portfolio	0.052666	0.057512	1.19284
4th_the_hedge_portfolio	0.054602	0.057461	1.231092
5th_the_hedge_portfolio	0.05288	0.057547	1.192446
1st_the_hedge_portfolio_without_mkt	0.055089	0.056911	1.253005
2nd_the_hedge_portfolio_without_mkt	0.055202	0.056857	1.256577
3rd_the_hedge_portfolio_without_mkt	0.055969	0.057008	1.26997
4th_the_hedge_portfolio_without_mkt	0.056425	0.057018	1.322712
5th_the_hedge_portfolio_without_mkt	0.053979	0.057114	1.22479

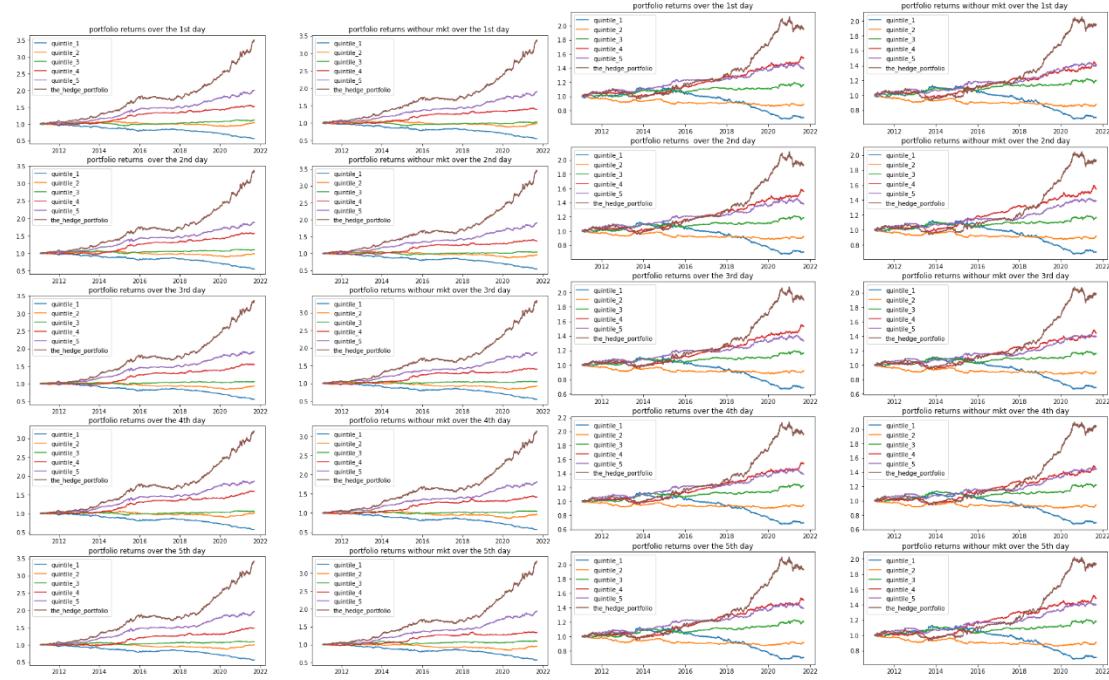
PVM with window size 1000 days(rolling)

	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	0.088615	0.063801	1.928605
2nd_the_hedge_portfolio	0.085665	0.06359	1.873943
3rd_the_hedge_portfolio	0.085702	0.063788	1.869107
4th_the_hedge_portfolio	0.082011	0.063447	1.802306
5th_the_hedge_portfolio	0.086731	0.063782	1.890459
1st_the_hedge_portfolio_without_mkt	0.086045	0.061631	1.939628
2nd_the_hedge_portfolio_without_mkt	0.087678	0.061561	1.976554
3rd_the_hedge_portfolio_without_mkt	0.085076	0.061789	1.91422
4th_the_hedge_portfolio_without_mkt	0.080728	0.061677	1.824801
5th_the_hedge_portfolio_without_mkt	0.084996	0.062467	1.892462

PVM start from the 1000<sup>th</sup> day

	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	0.046514	0.05745	1.156529
2nd_the_hedge_portfolio	0.045583	0.057375	1.135849
3rd_the_hedge_portfolio	0.044621	0.057372	1.113035
4th_the_hedge_portfolio	0.04683	0.057283	1.167215
5th_the_hedge_portfolio	0.045727	0.057374	1.139281
1st_the_hedge_portfolio_without_mkt	0.046434	0.056718	1.168764
2nd_the_hedge_portfolio_without_mkt	0.045697	0.056606	1.153239
3rd_the_hedge_portfolio_without_mkt	0.047733	0.056802	1.198264
4th_the_hedge_portfolio_without_mkt	0.049804	0.056836	1.247108
5th_the_hedge_portfolio_without_mkt	0.045882	0.056951	1.151035

- e) Plot the cumulative returns of the portfolios in d)
- PVM with window size 1000 days(rolling)      PVM start from the 1000<sup>th</sup> day



- 6) Test a more flexible factor momentum strategy
- Features: (same) factor return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]
  - Learn a model using pooled data over the past 3 years, **predicting** future 1 day, 1 week and 1 month factor returns using the above feature using historical data (make sure no peek head) (ols, lasso, elastic net)
  - Generate prediction of future factor return over the next 1 day, week and month, and repeat the analysis in (5)

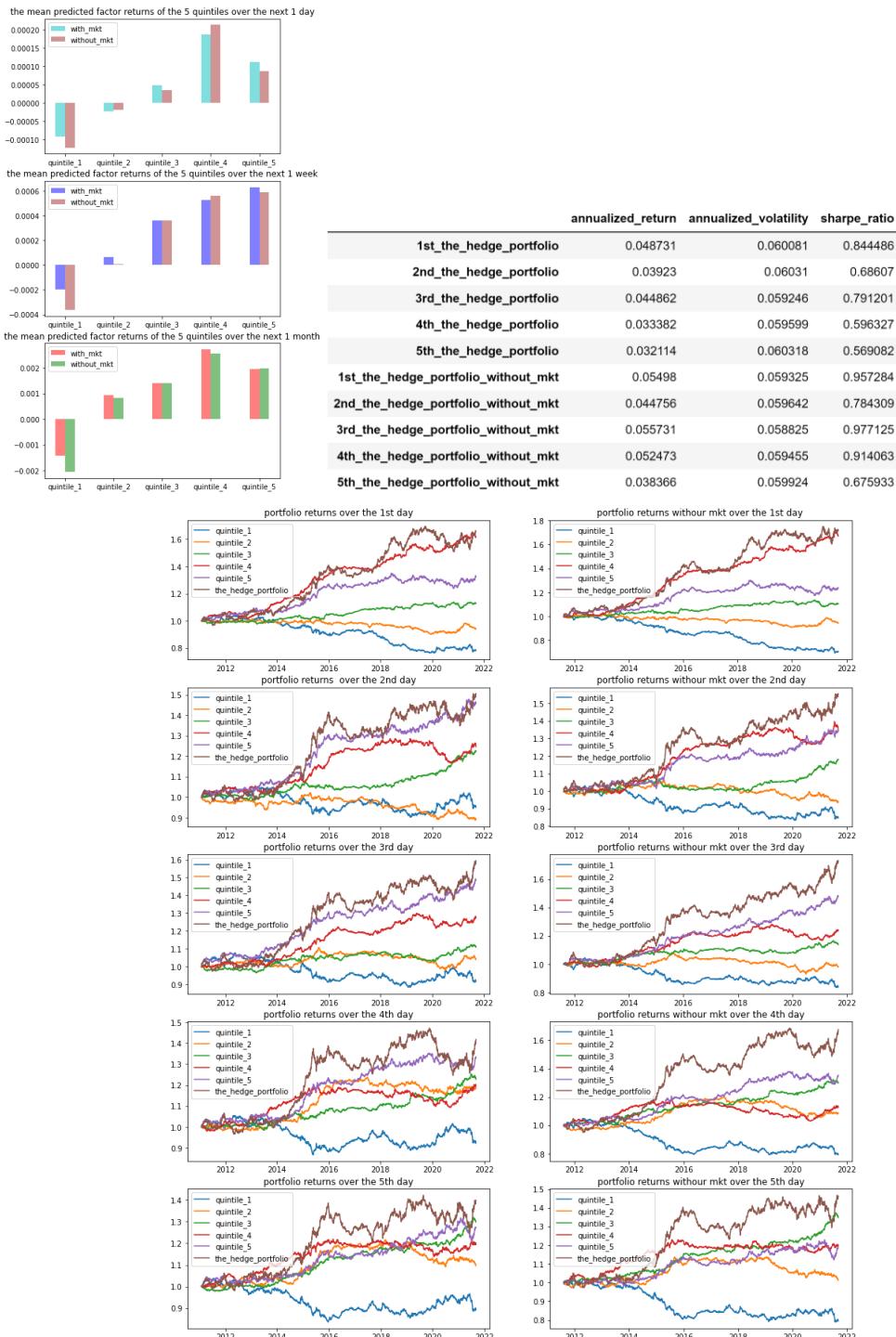
The Model is predicting the next day return with next day return as label in Lasso regression

The input is the **single factor** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated each day before next day prediction

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram

The reason of week, month predciton performs better is that that has the return of past days in training so the label is more smooth and more predictable.



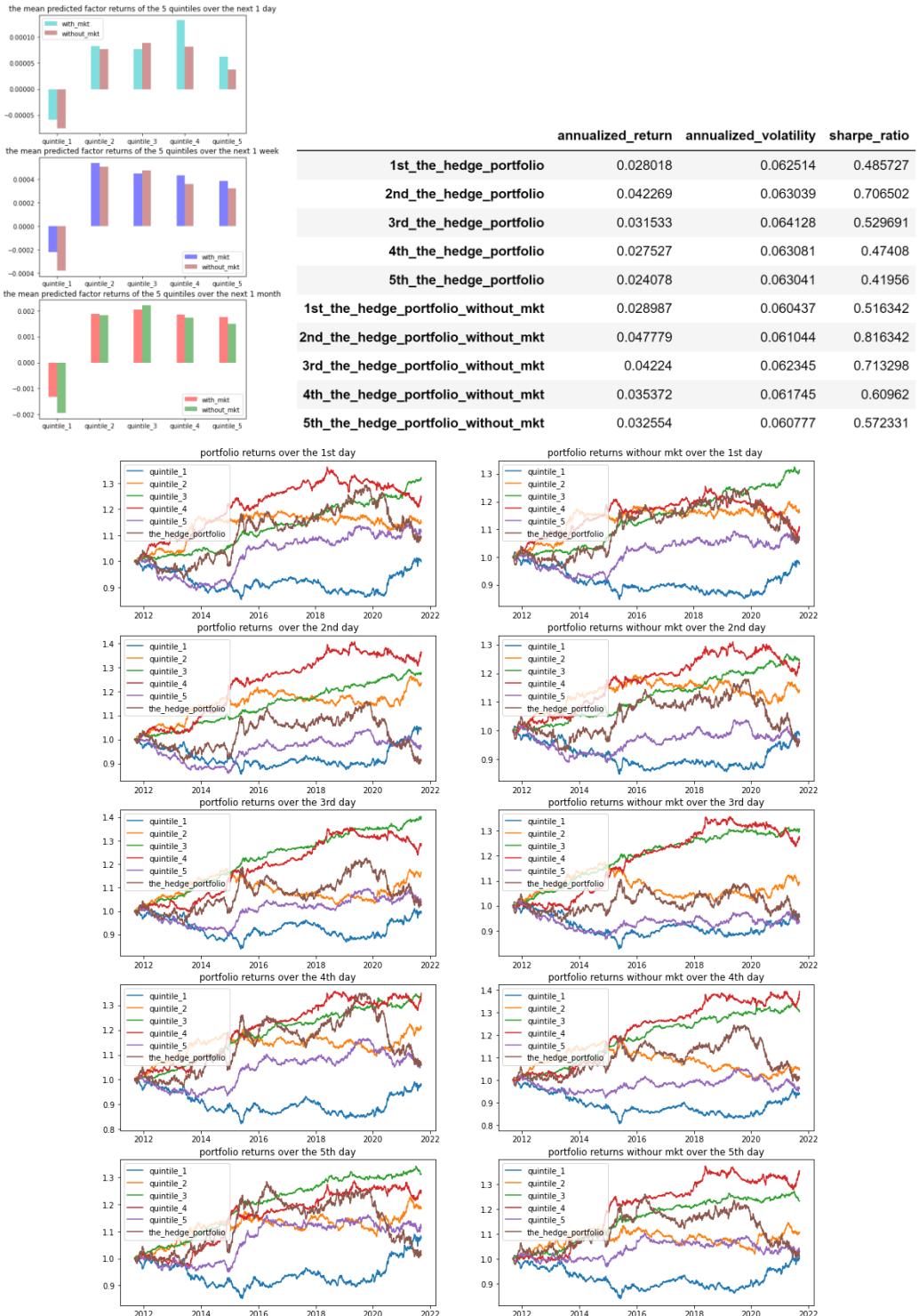
New!

The Model is predicting the next day return with next week return as label in Lasso regression  
 The input is the **single factor** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **each day** before next day prediction

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram

The reason of week, month prediciton performs better is that that has the return of past days in training so the label is more smooth and more predictable.



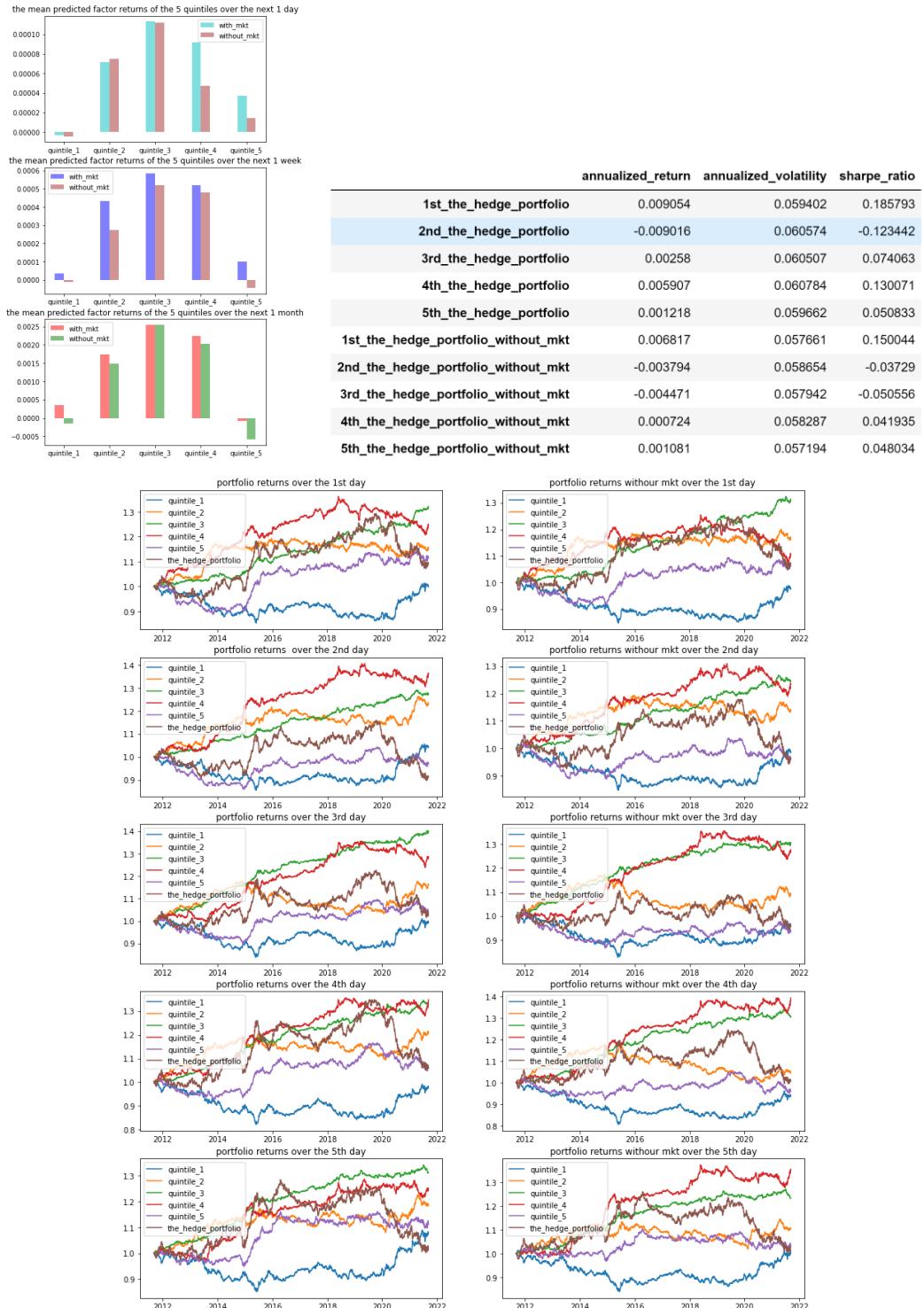
New!

The Model is predicting the next day return with next month return as label in Lasso regression  
 The input is the **single factor** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **each day** before next day prediction

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram

The reason of week, month predcition performs better is that that has the return of past days in training so the label is more smooth and more predictable.



The Model is predicting the next day return with next day return as label in Lasso regression  
The input are the **single factor return** over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

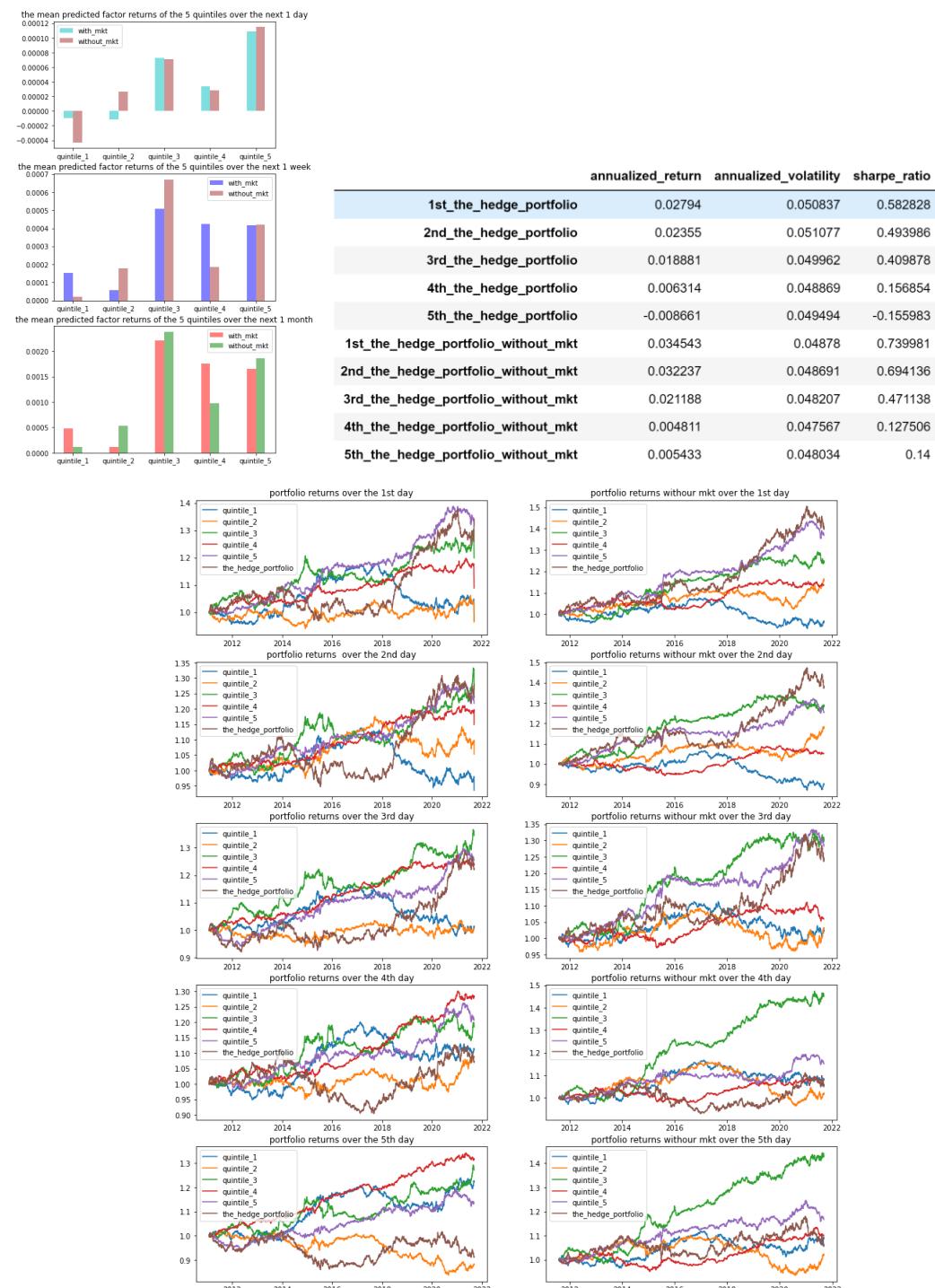
The model is updated **monthly** before next day prediction

It means the train data has maximum 10 days lag with the test date.

For yearly updated model, the day lag between train and test would be larger, so the performance would be more random.

There is no need to calculate the **yearly** updated result.

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram

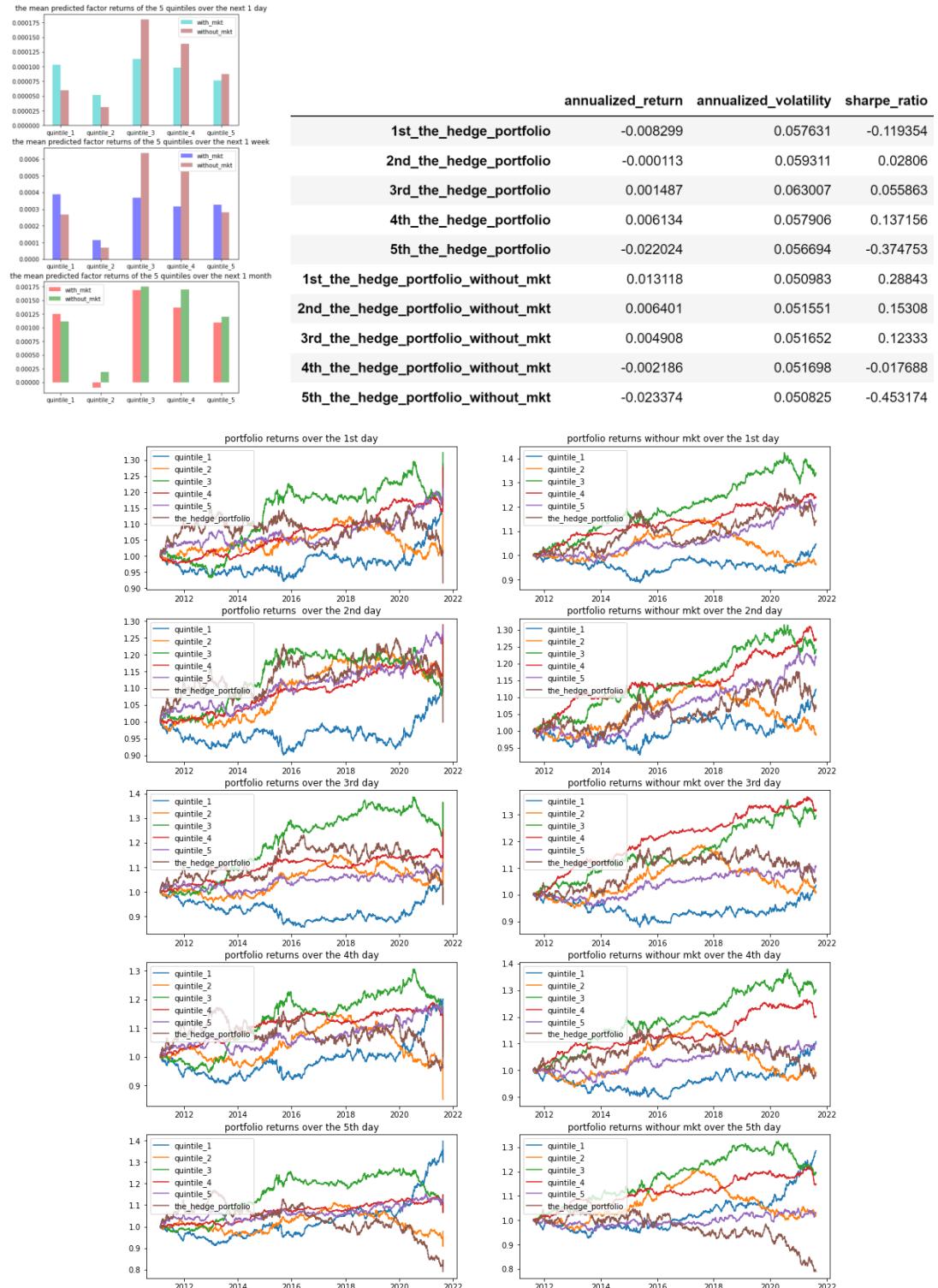


The Model is predicting the next week return with next week return as label in Lasso regression  
The input are the **single factor return** over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **monthly** before next day prediction

It means the train data has maximum 26 days lag with the test date.

We use the weekly return label prediction as factor into **daily return** back test.



The Model is predicting the next month return with next month return as label in Lasso regression

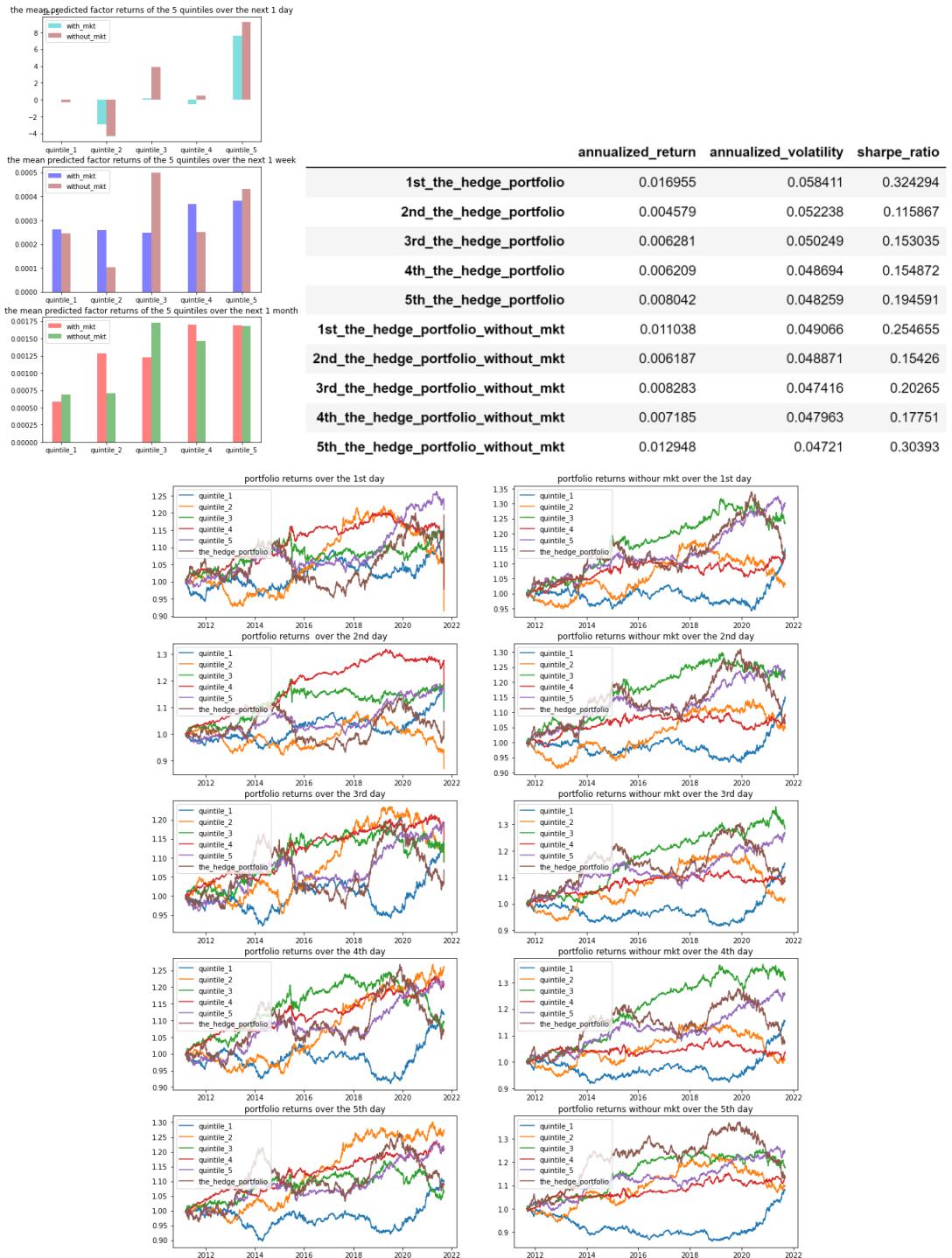
The input are the **single factor return** over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **monthly** before next day prediction

It means the train data has maximum 42 days lag with the test date.

We use the weekly return label prediction as factor into **daily return** back test.

The only reason the month data has relative better results than week is the month data is more smooth in model

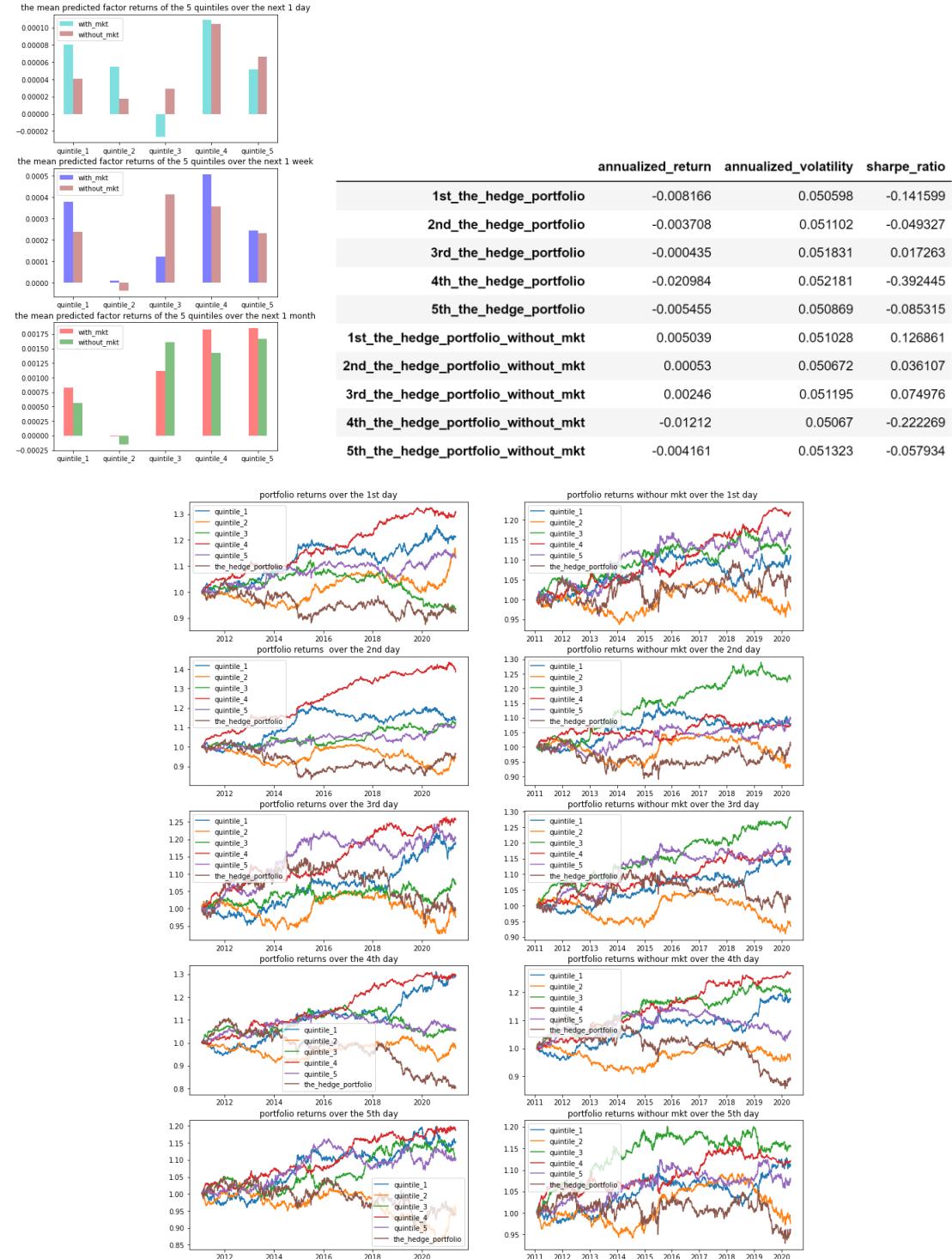


The Model is predicting the next day return with next day return as label in Lasso regression

The input is the single factor return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **yearly** before next day prediction

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram



The Model is predicting the next day return with next day return as label in Lasso regression

The input is the **all the factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **daily** before next day prediction

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram

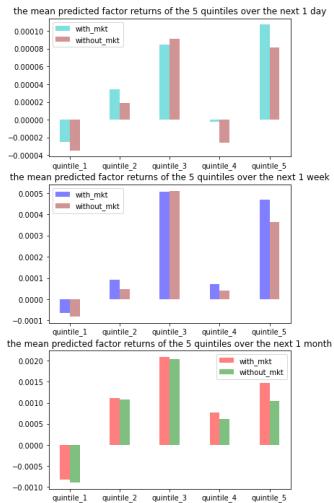


New!

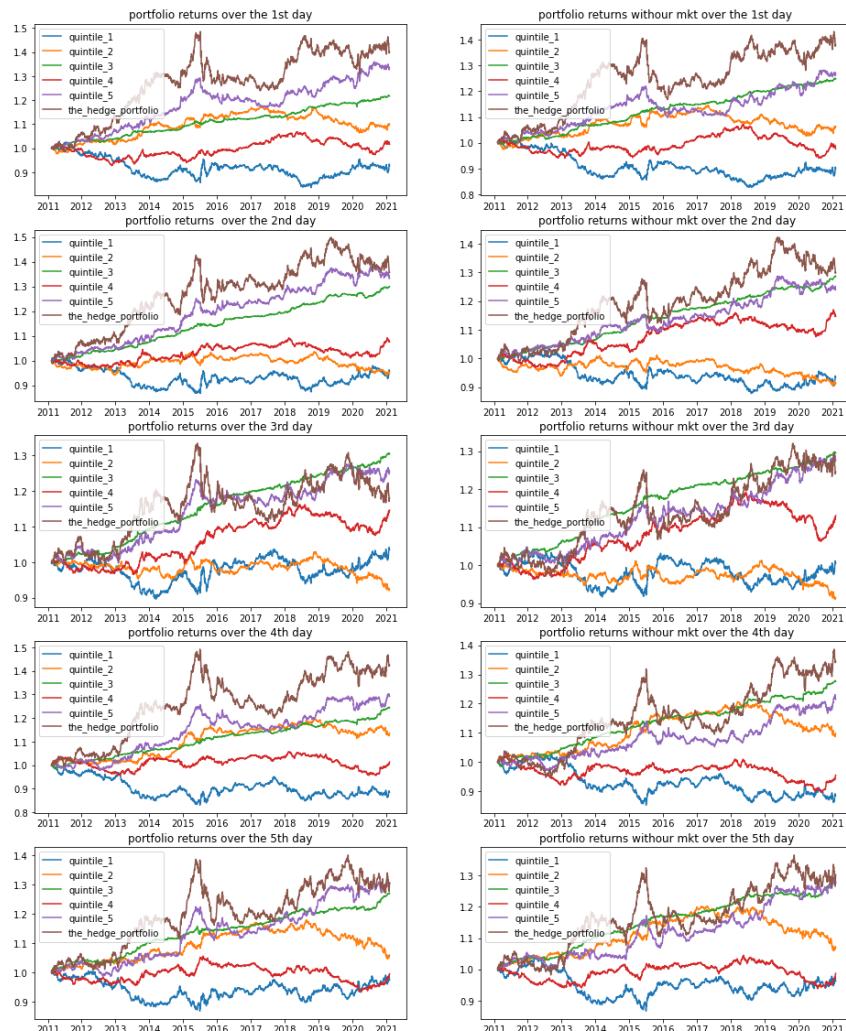
The Model is predicting the next day return with next week return as label in Lasso regression  
 The input is the **all the factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **daily** before next day prediction

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram



	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	0.034324	0.065859	0.559035
2nd_the_hedge_portfolio	0.031037	0.065653	0.510789
3rd_the_hedge_portfolio	0.016733	0.066642	0.28898
4th_the_hedge_portfolio	0.036061	0.066396	0.580986
5th_the_hedge_portfolio	0.027139	0.065717	0.451169
1st_the_hedge_portfolio_without_mkt	0.032637	0.061669	0.565505
2nd_the_hedge_portfolio_without_mkt	0.026531	0.060962	0.471472
3rd_the_hedge_portfolio_without_mkt	0.022159	0.062054	0.393644
4th_the_hedge_portfolio_without_mkt	0.030038	0.062021	0.520918
5th_the_hedge_portfolio_without_mkt	0.026781	0.061962	0.468887

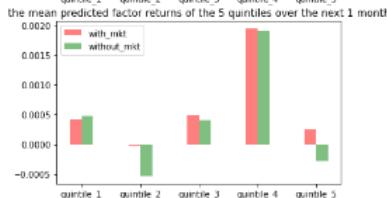
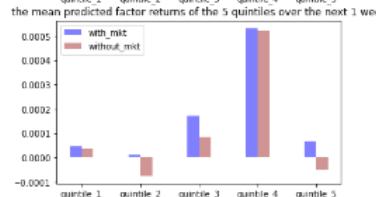
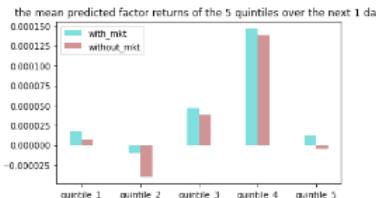


New!

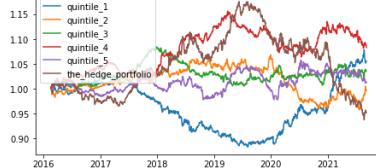
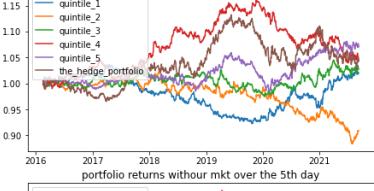
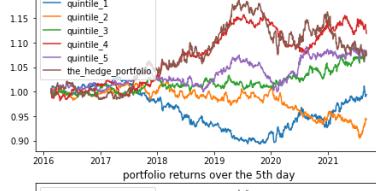
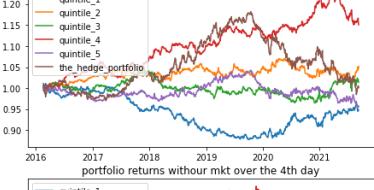
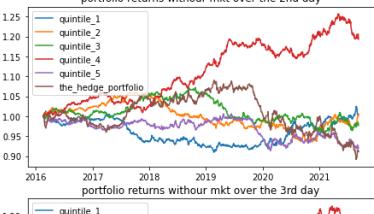
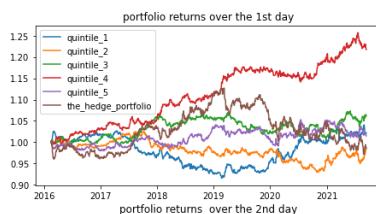
The Model is predicting the next day return with next month return as label in Lasso regression  
 The input is the **all the factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **daily** before next day prediction

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram



	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	-0.002511	0.051555	-0.024127
2nd_the_hedge_portfolio	-0.014058	0.052163	-0.251462
3rd_the_hedge_portfolio	0.010453	0.052807	0.227819
4th_the_hedge_portfolio	0.013201	0.051227	0.28754
5th_the_hedge_portfolio	-0.008751	0.051865	-0.14748
1st_the_hedge_portfolio_without_mkt	-0.004099	0.04955	-0.060066
2nd_the_hedge_portfolio_without_mkt	-0.016477	0.049085	-0.321575
3rd_the_hedge_portfolio_without_mkt	0.000189	0.050749	0.029178
4th_the_hedge_portfolio_without_mkt	0.007559	0.048862	0.18212
5th_the_hedge_portfolio_without_mkt	-0.014241	0.04945	-0.272076



The Model is predicting the next day return with next day return as label in Lasso regression  
The input is **all the factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **monthly** before next day prediction

So the largest day lag would be **22** days without model updating.

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram



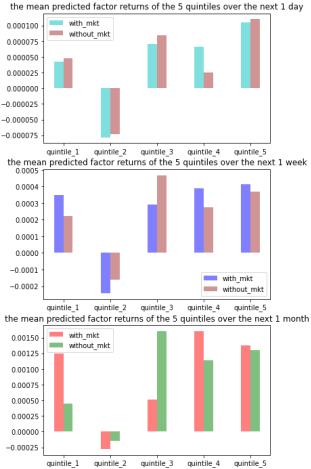
The Model is predicting the next week return with next week return as label in Lasso regression

The input is **all the factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

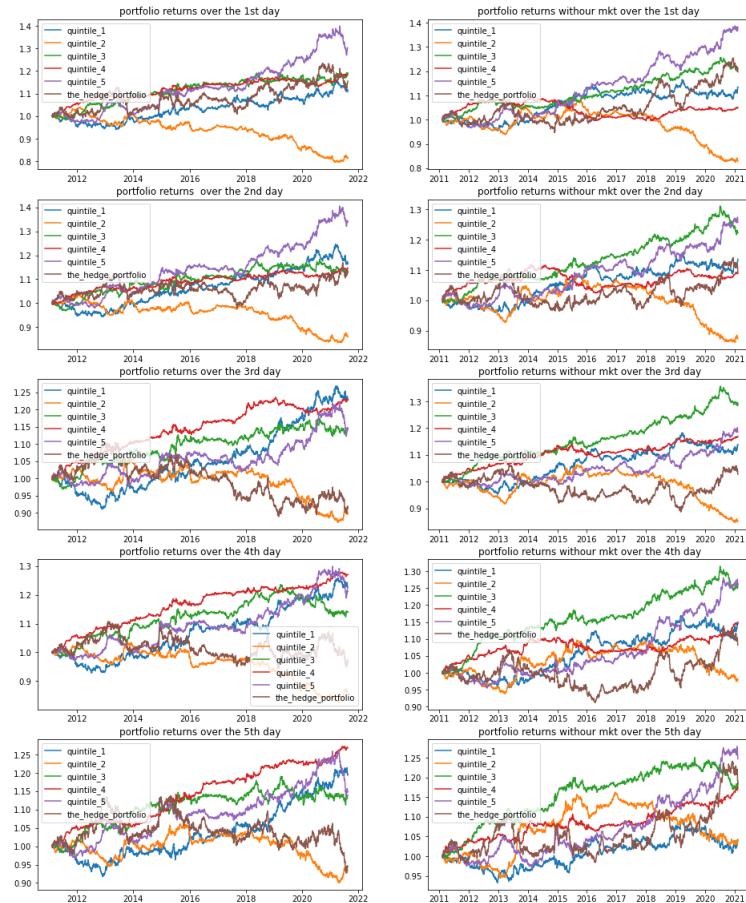
The model is updated **monthly** before next day prediction

So the largest day lag would be **26** days without model updating.

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram



	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	0.013836	0.055316	0.282751
2nd_the_hedge_portfolio	0.011535	0.056126	0.237909
3rd_the_hedge_portfolio	-0.008138	0.055659	-0.122918
4th_the_hedge_portfolio	-0.002519	0.055977	-0.018269
5th_the_hedge_portfolio	-0.00546	0.055023	-0.074669
1st_the_hedge_portfolio_without_mkt	0.018148	0.050346	0.391905
2nd_the_hedge_portfolio_without_mkt	0.008949	0.050299	0.20698
3rd_the_hedge_portfolio_without_mkt	0.002671	0.050274	0.079608
4th_the_hedge_portfolio_without_mkt	0.007895	0.050577	0.184916
5th_the_hedge_portfolio_without_mkt	0.017013	0.050441	0.36857



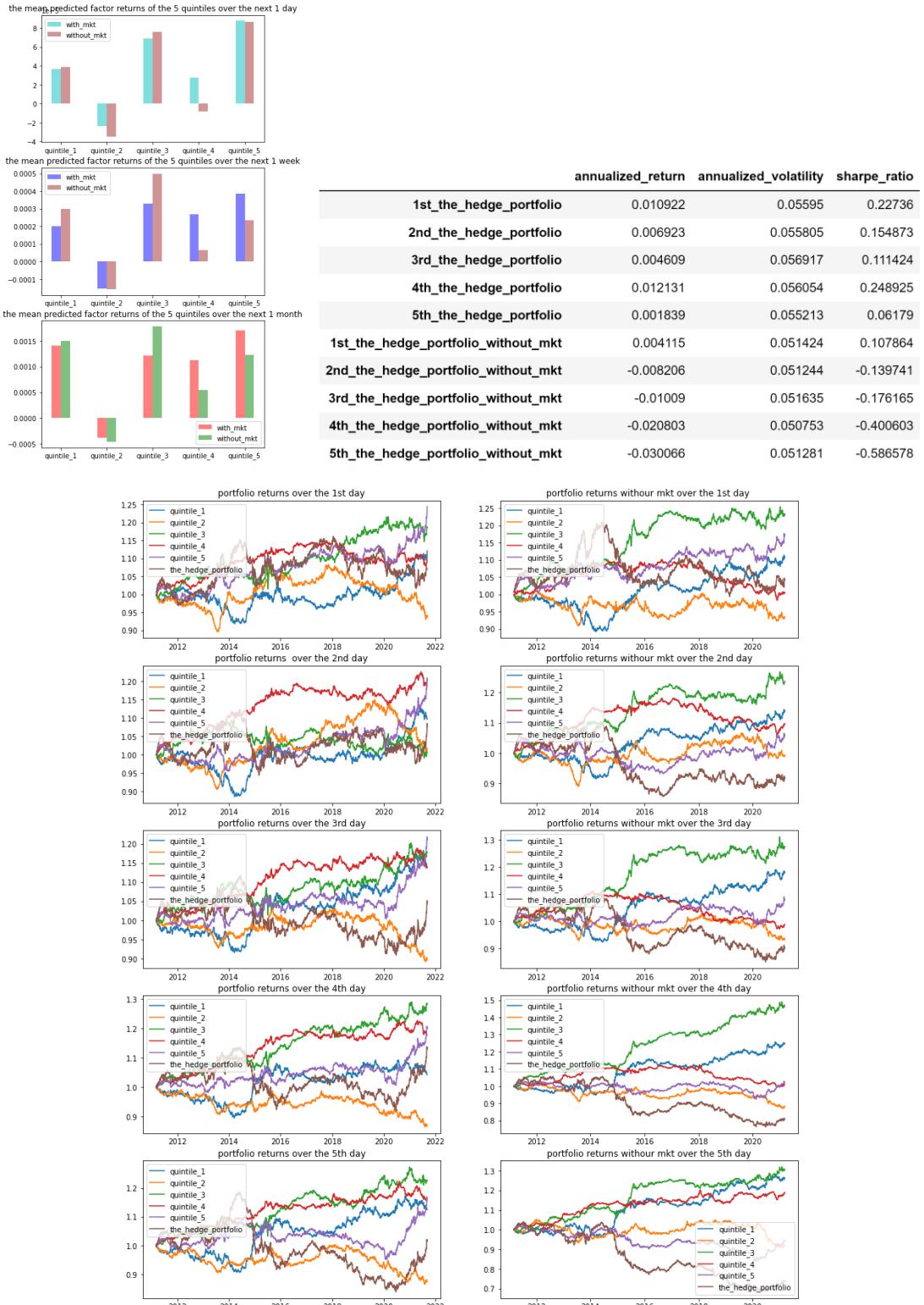
The Model is predicting the next month return with next day return as label in Lasso regression

The input is **all the factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **monthly** before next day prediction

So the largest day lag would be **22** days without model updating.

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram



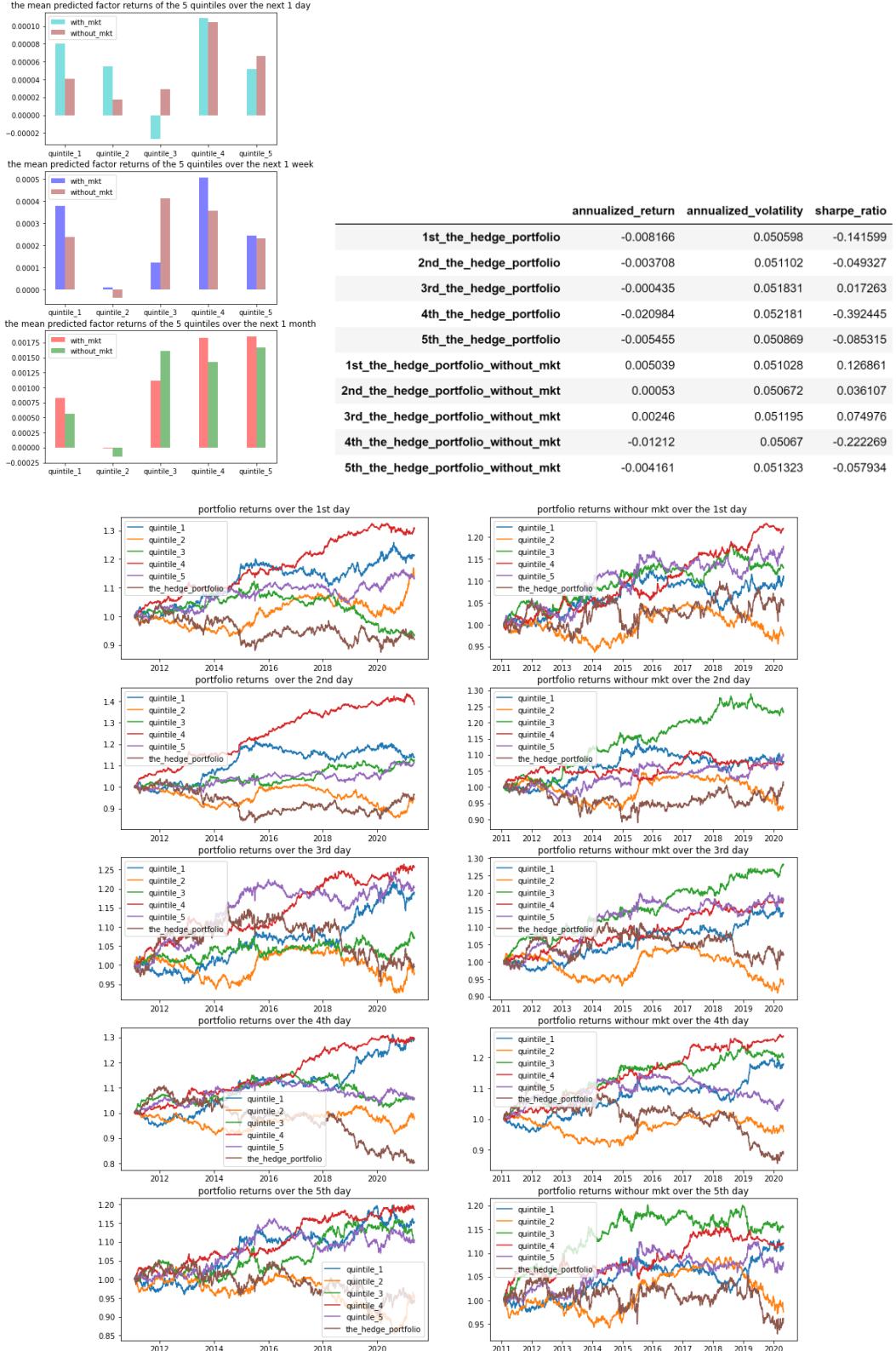
The Model is predicting the next day return with next day return as label in Lasso regression

The input is **all the factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **yearly** before next day prediction

In back test, I still use the **daily** return.

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram



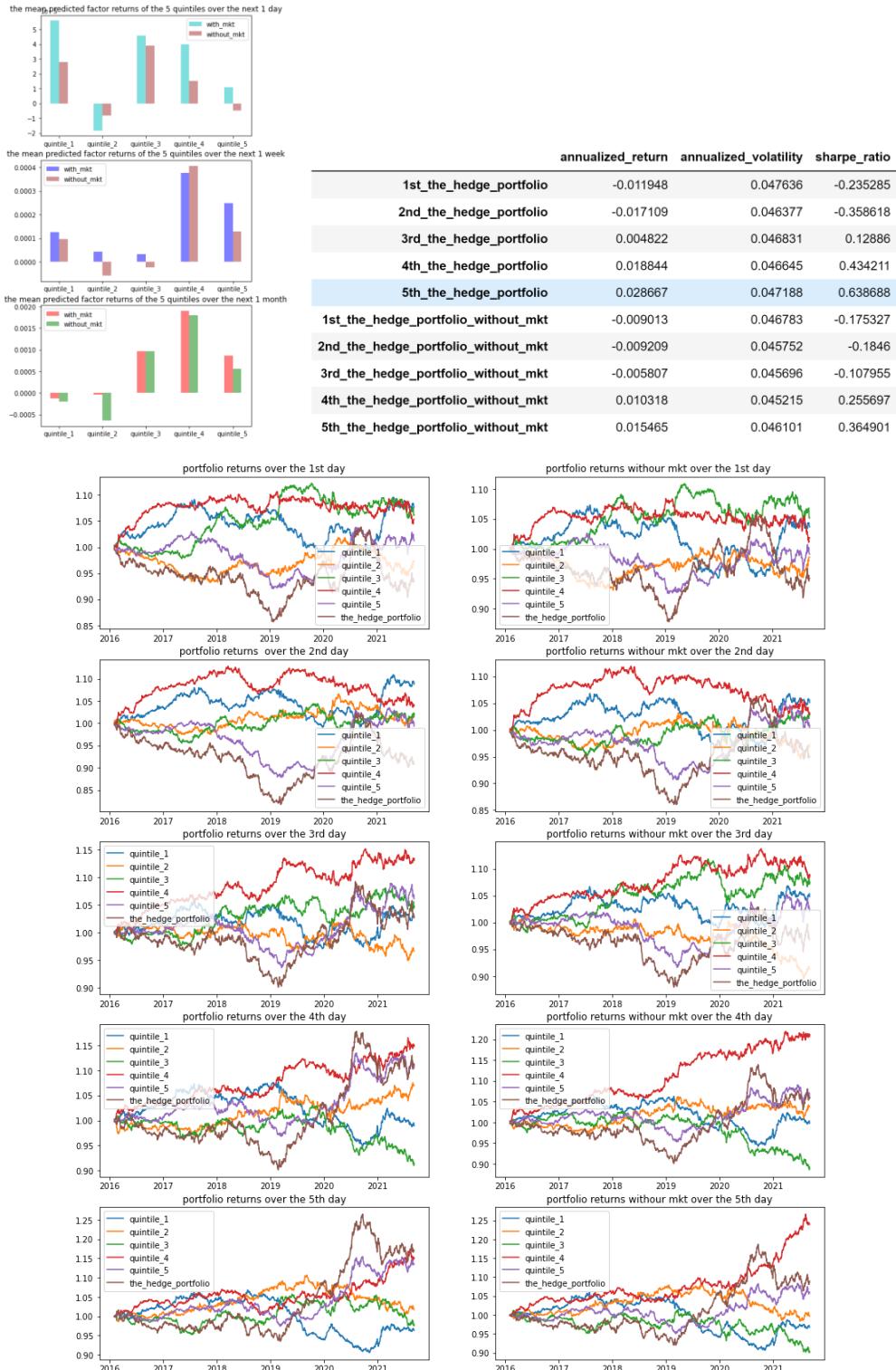
## LSTM

The Model is predicting the next day return with next day return as label in Lasso regression  
 The input is the **single kind factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65,-126],[-127,-252]

The model is updated **after 125 days** before next day prediction with normalized data

LSTM parameters layer = 2; batch 20; hidden size 16, epoch = 60; loss: mse; dropout = 0

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram

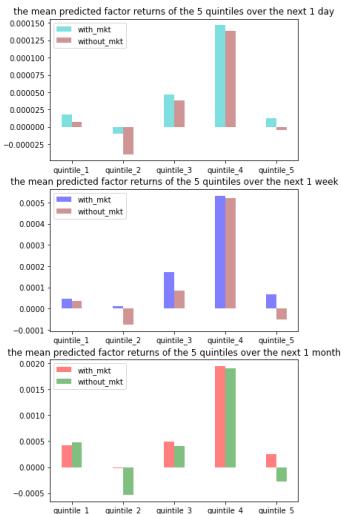


The Model is predicting the next day return with next week return as label in Lasso regression  
The input is the **single kind factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65,-126],[-127,-252]

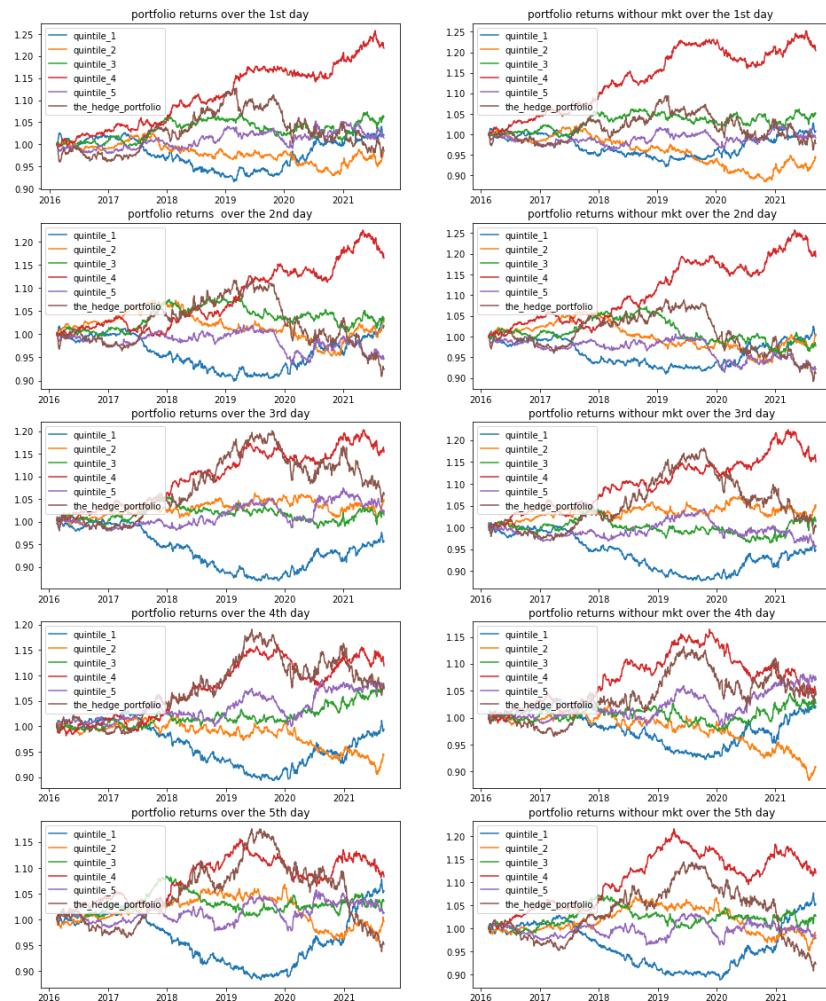
The model is updated **after 125 days** before next day prediction with normalized data

LSTM parameters layer = 2; batch 20; hidden size 16, epoch = 60; loss: mse; dropout = 0

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram



	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	-0.002511	0.051555	-0.024127
2nd_the_hedge_portfolio	-0.014058	0.052163	-0.251462
3rd_the_hedge_portfolio	0.010453	0.052807	0.227819
4th_the_hedge_portfolio	0.013201	0.051227	0.28754
5th_the_hedge_portfolio	-0.008751	0.051865	-0.14748
1st_the_hedge_portfolio_without_mkt	-0.004099	0.04955	-0.060066
2nd_the_hedge_portfolio_without_mkt	-0.016477	0.049085	-0.321575
3rd_the_hedge_portfolio_without_mkt	0.000189	0.050749	0.029178
4th_the_hedge_portfolio_without_mkt	0.007559	0.048862	0.18212
5th_the_hedge_portfolio_without_mkt	-0.014241	0.04945	-0.272076



The Model is predicting the next day return with next month return as label in Lasso regression  
The input is the **single kind of factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

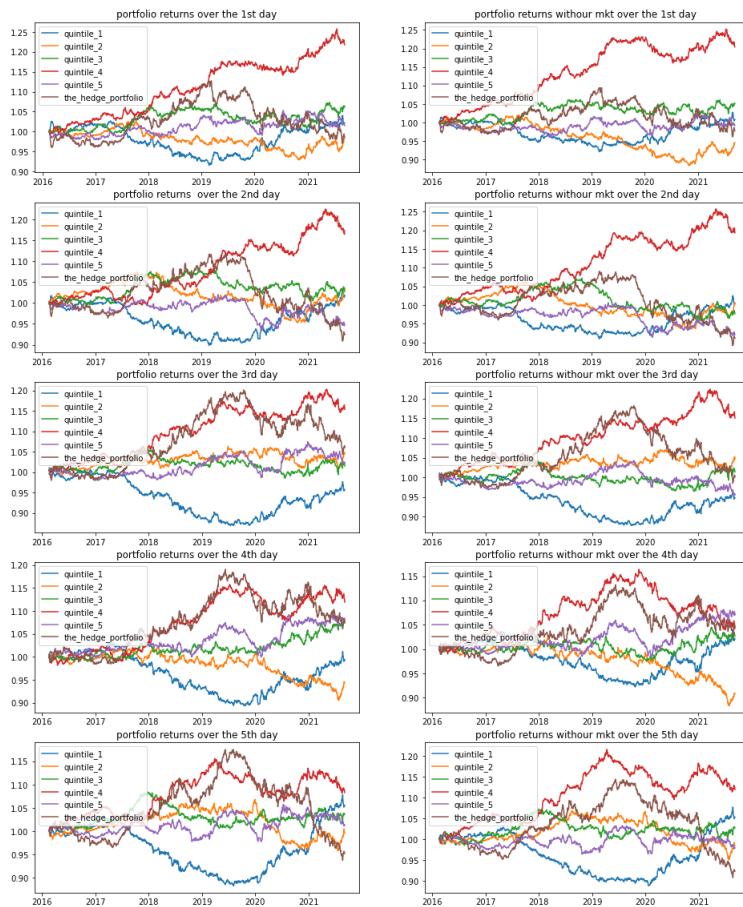
The model is updated **after 125 days** before next day prediction with normalized data

LSTM parameters layer = 3; batch 20; hidden size 16, epoch = 60; loss: mse; dropout = 0

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram



	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	-0.002511	0.051555	-0.024127
2nd_the_hedge_portfolio	-0.014058	0.052163	-0.251462
3rd_the_hedge_portfolio	0.010453	0.052807	0.227819
4th_the_hedge_portfolio	0.013201	0.051227	0.28754
5th_the_hedge_portfolio	-0.008751	0.051865	-0.14748
1st_the_hedge_portfolio_without_mkt	-0.004099	0.04955	-0.060066
2nd_the_hedge_portfolio_without_mkt	-0.016477	0.049085	-0.321575
3rd_the_hedge_portfolio_without_mkt	0.000189	0.050749	0.029178
4th_the_hedge_portfolio_without_mkt	0.007559	0.048862	0.18212
5th_the_hedge_portfolio_without_mkt	-0.014241	0.04945	-0.272076



The Model is predicting the next day return with next day return as label in Lasso regression

The input is the **all the factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **after 125 days** before next day prediction with normalized data

LSTM parameters layer = 2; batch 20; hidden size 16, epoch = 60; loss: mse; dropout = 0

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram



The Model is predicting the next day return with next month return as label in Lasso regression

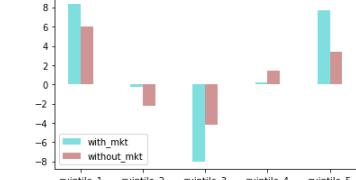
The input is the **all the factors** return over day -1, -2, -3, [-4,-5],[-6,-21],[-22,-64],[-65, -126],[-127,-252]

The model is updated **after 125 days** before next day prediction with normalized data

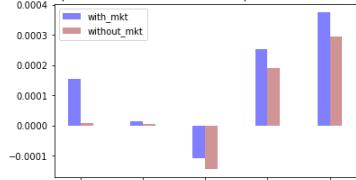
LSTM parameters layer = 2; batch 20; hidden size 16, epoch = 60; loss: mse; dropout = 0

The cumulative factor returns over the next 1 day 1 week and 1 month, in histogram

the mean predicted factor returns of the 5 quintiles over the next 1 day



the mean predicted factor returns of the 5 quintiles over the next 1 week



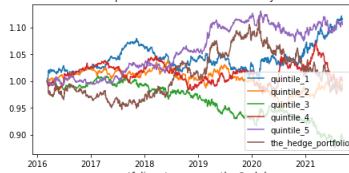
the mean predicted factor returns of the 5 quintiles over the next 1 month



annualized\_return annualized\_volatility sharpe\_ratio

	annualized_return	annualized_volatility	sharpe_ratio
1st_the_hedge_portfolio	-0.0028	0.04879	-0.034463
2nd_the_hedge_portfolio	0.029087	0.049021	0.623223
3rd_the_hedge_portfolio	0.020176	0.047803	0.451751
4th_the_hedge_portfolio	0.00367	0.047541	0.102683
5th_the_hedge_portfolio	-0.00117	0.047536	-0.001456
1st_the_hedge_portfolio_without_mkt	-0.00744	0.04842	-0.133767
2nd_the_hedge_portfolio_without_mkt	0.038125	0.049766	0.7945
3rd_the_hedge_portfolio_without_mkt	0.025489	0.048285	0.557867
4th_the_hedge_portfolio_without_mkt	0.00808	0.048534	0.194085
5th_the_hedge_portfolio_without_mkt	-0.000456	0.047758	0.014099

portfolio returns over the 1st day



portfolio returns without mkt over the 1st day

