

```
In [1]: import warnings
warnings.filterwarnings('ignore')
import pandas as pd
import numpy as np
import pyfolio as pf
from extract_returns import extract_returns
```

```
In [2]: results = pd.read_pickle('results_1a_2013-2018.pickle')
results.tail()
```

Out[2]:

	algo_volatility	algorithm_period_return	alpha	benchmark_period_return	benchmark_volatility	beta	capital_used	ending_
2018-10-25 20:00:00+00:00	0.233722	1.156823	0.148115	1.123940	0.123587	0.082737	-7863.0	2156827
2018-10-26 20:00:00+00:00	0.233895	1.101590	0.143191	1.086585	0.123773	0.087767	-552329.0	2101589
2018-10-29 20:00:00+00:00	0.233821	1.111384	0.144018	1.075025	0.123757	0.087456	97945.0	2111384
2018-10-30 20:00:00+00:00	0.233744	1.118251	0.144226	1.105774	0.123856	0.087677	68666.0	2118250
2018-10-31 20:00:00+00:00	0.233741	1.150234	0.146344	1.128265	0.123885	0.089217	319826.0	2150238

5 rows × 37 columns



```
In [3]: returns, positions, transactions = extract_returns(results)
```

```
In [4]: #results.to_csv('results.csv')
#returns.to_csv('returns.csv')
#transactions.to_csv('transactions.csv')
#positions.to_csv('positions.csv')
```

```
In [5]: # generate sector dictionary for every symbol
pos = list(positions.columns)
pos.remove('cash')
sectors = pd.read_csv('../bundles/meta.csv', usecols=['root_symbol', 'sector', 'sub_sector'], index_col=['root_symbol'])
sectors['sector'] = sectors['sector'].str.cat(sectors['sub_sector'], sep='/')
del sectors['sub_sector']
sectors.index = sectors.index.map(lambda x: x if len(x) > 1 else '_' + x)
sectors = sectors.T.to_dict(orient='records')[0]
sector_map = {p: sectors[p.root_symbol] for p in pos}
```

```
In [6]: out_of_sample=results.index[-21]
transactions_mod = transactions.copy()
transactions_mod.price = transactions.sid.apply(lambda x: x.multiplier) * transactions.price
benchmark = (results['benchmark_period_return'] + 1).pct_change()[1:]
benchmark.index = benchmark.index.normalize()
```

```
In [7]: pf.create_full_tear_sheet(returns, positions=positions, transactions=transactions_mod,  
                                live_start_date=out_of_sample, round_trips=True, benchmark_rets=benchmark,  
                                sector_mappings=sector_map, hide_positions=False)
```

<b>Start date</b>	2013-01-03		
<b>End date</b>	2018-10-31		
<b>In-sample months</b>	68		
<b>Out-of-sample months</b>	1		
	All	In-sample	Out-of-sample
<b>Annual return</b>	14.0%	15.5%	-52.7%
<b>Cumulative returns</b>	115.0%	128.9%	-6.0%
<b>Annual volatility</b>	23.4%	23.2%	32.3%
<b>Sharpe ratio</b>	0.68	0.74	-2.16
<b>Calmar ratio</b>	0.46	0.51	-4.32
<b>Stability</b>	0.68	0.68	0.52
<b>Max drawdown</b>	-30.5%	-30.5%	-12.2%
<b>Omega ratio</b>	1.12	1.14	0.65
<b>Sortino ratio</b>	0.98	1.07	-2.64
<b>Skew</b>	-0.04	-0.01	-0.56
<b>Kurtosis</b>	3.21	3.23	1.35
<b>Tail ratio</b>	1.07	1.09	0.36
<b>Daily value at risk</b>	-2.9%	-2.9%	-4.3%
<b>Gross leverage</b>	0.09	0.11	-1.38
<b>Daily turnover</b>	14.9%	15.0%	6.4%
<b>Alpha</b>	0.15	0.16	-0.02
<b>Beta</b>	0.09	0.05	0.78

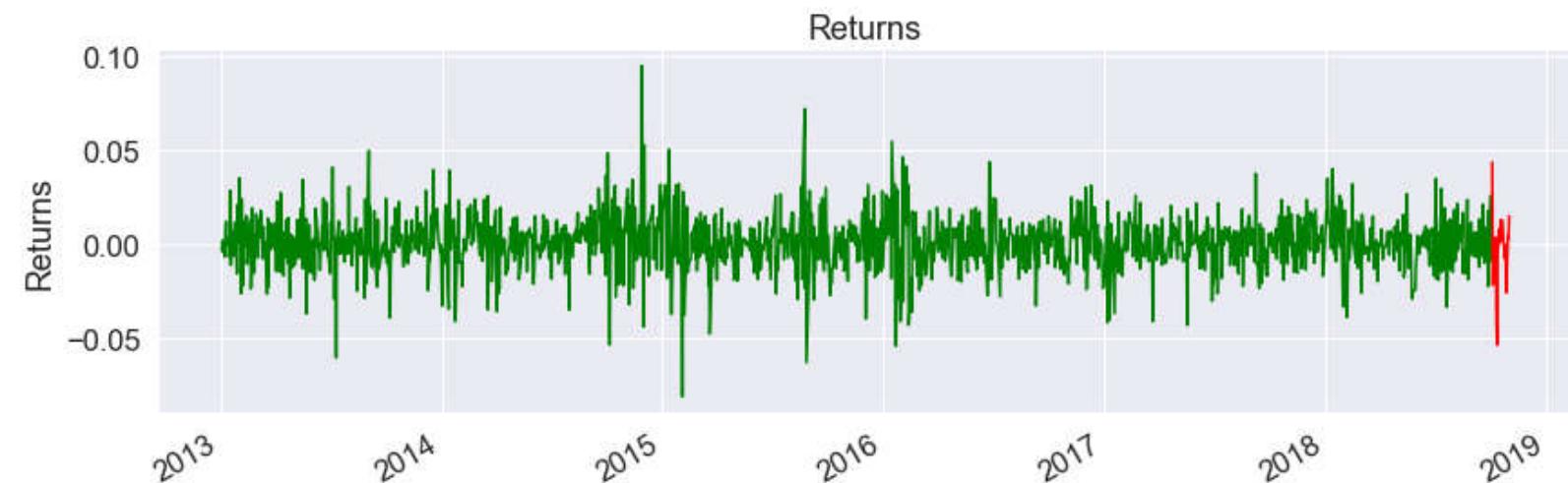
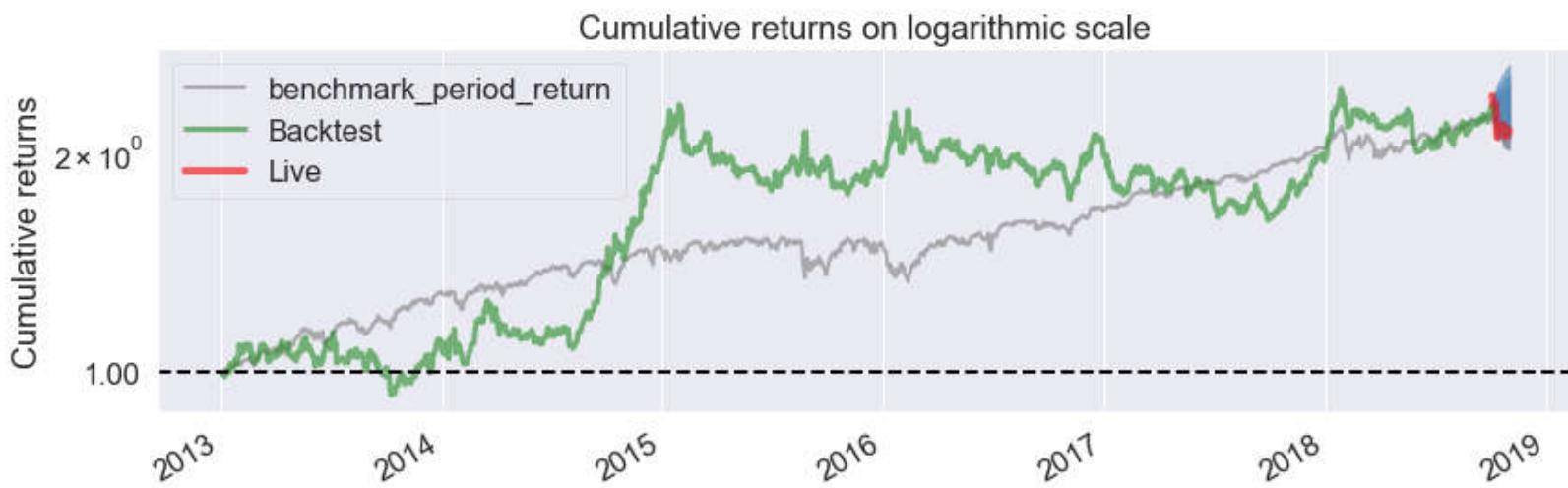
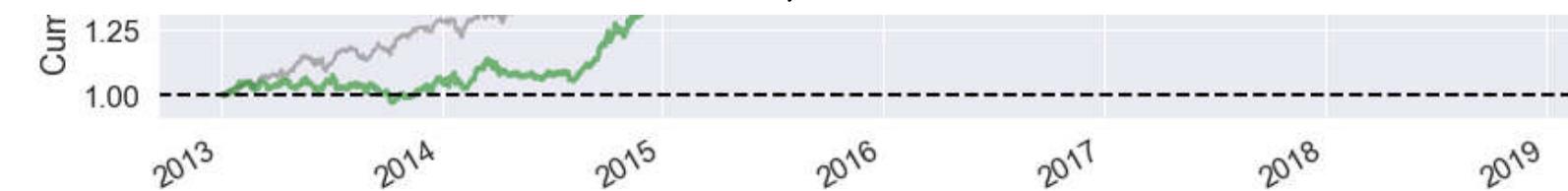
Worst drawdown periods	Net drawdown in %	Peak date	Valley date	Recovery date	Duration
0	30.53	2015-01-29	2017-09-27	2018-01-22	778
1	18.42	2018-01-26	2018-06-04	NaT	NaN
2	17.90	2013-07-05	2013-10-10	2014-01-22	144
3	13.97	2014-03-18	2014-08-06	2014-09-17	132
4	10.32	2014-01-22	2014-02-11	2014-02-27	27

## Cumulative returns



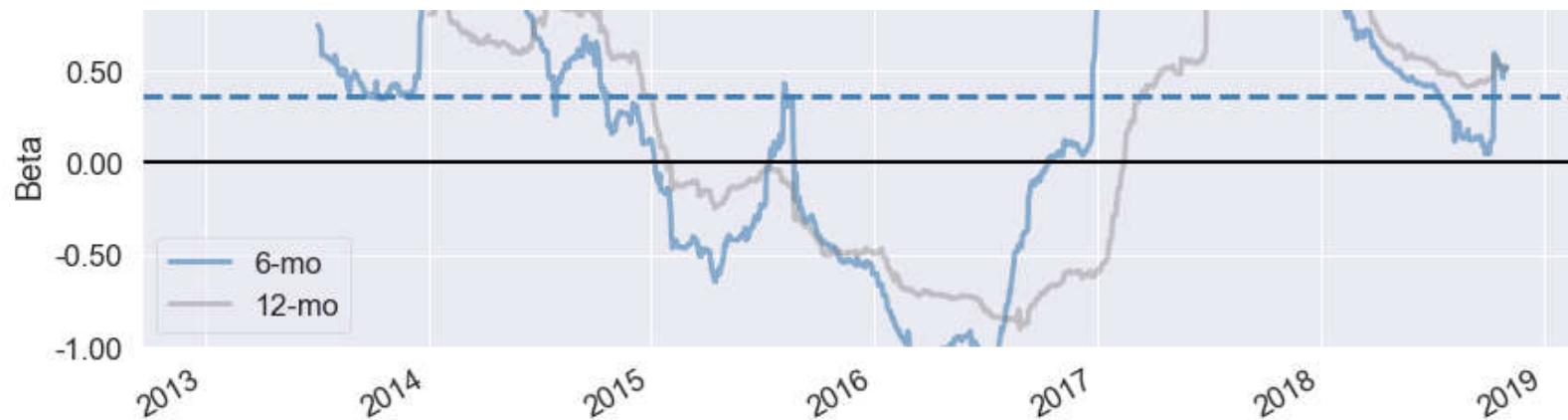
## Cumulative returns volatility matched to benchmark





1.00

Rolling portfolio beta to benchmark\_period\_return

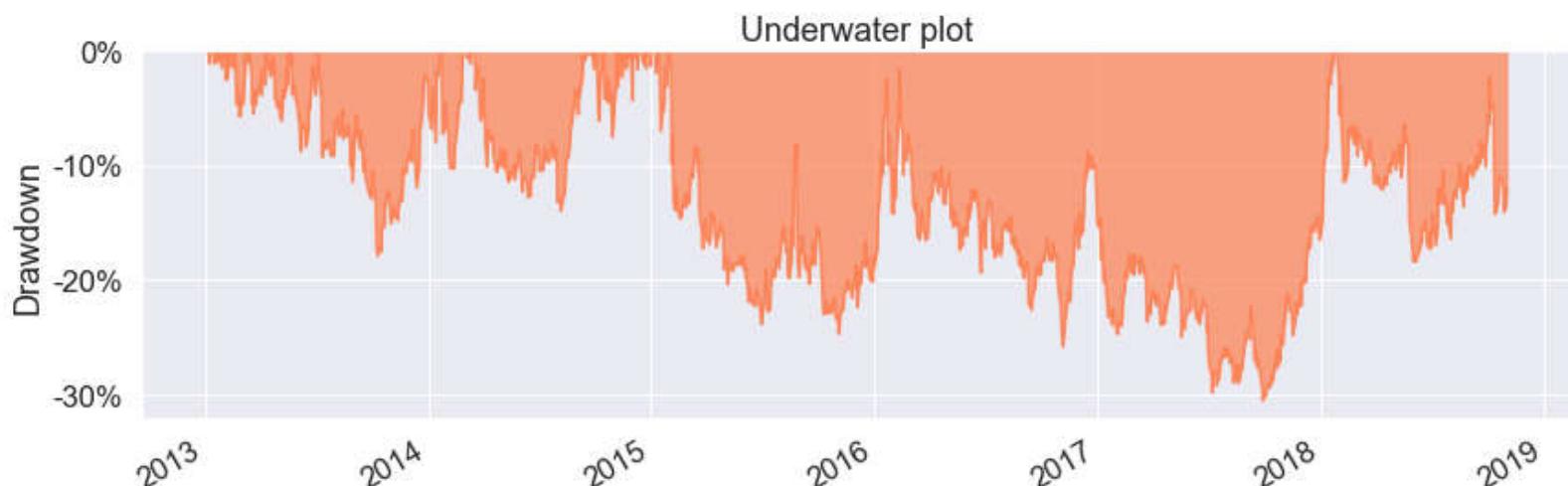
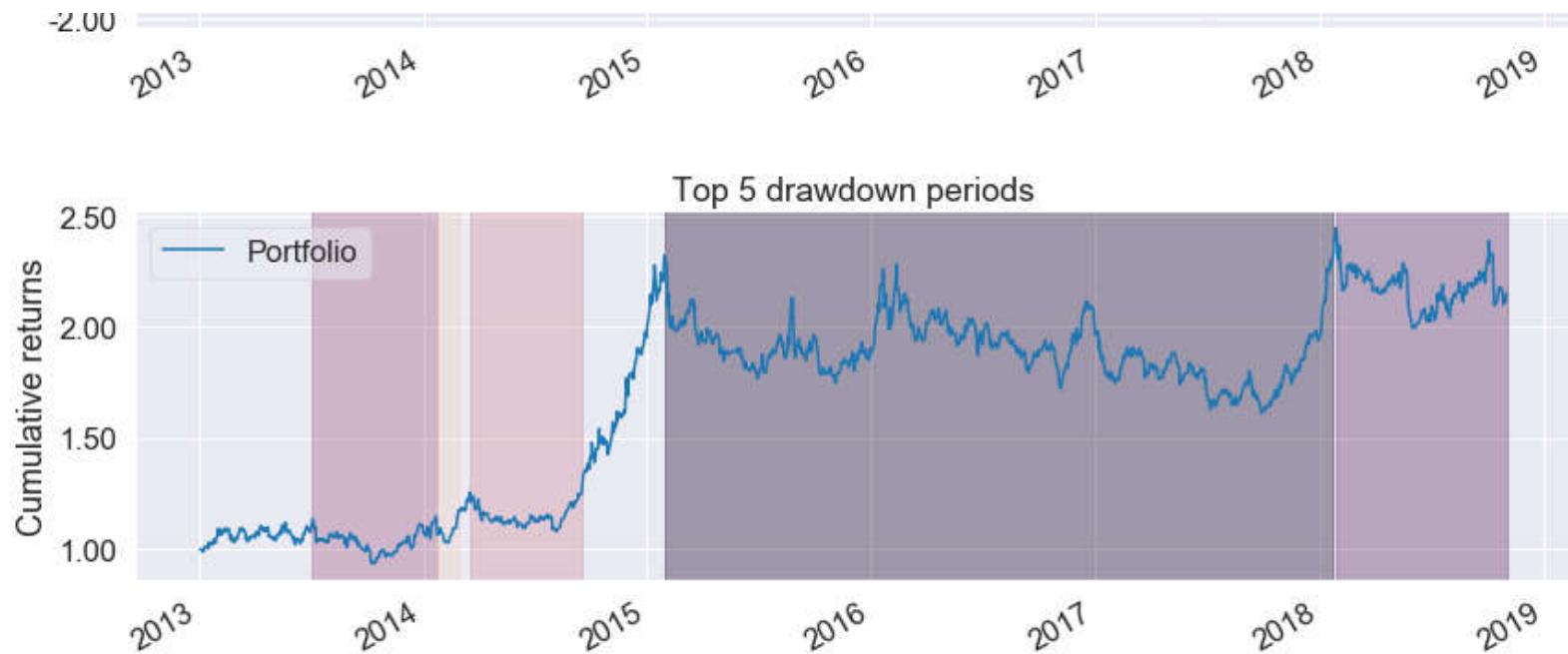


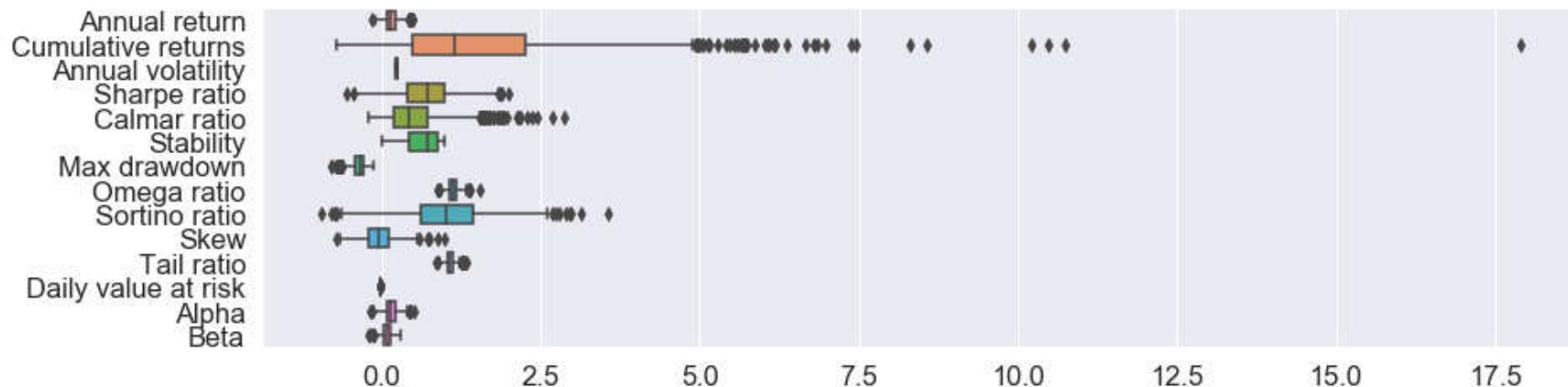
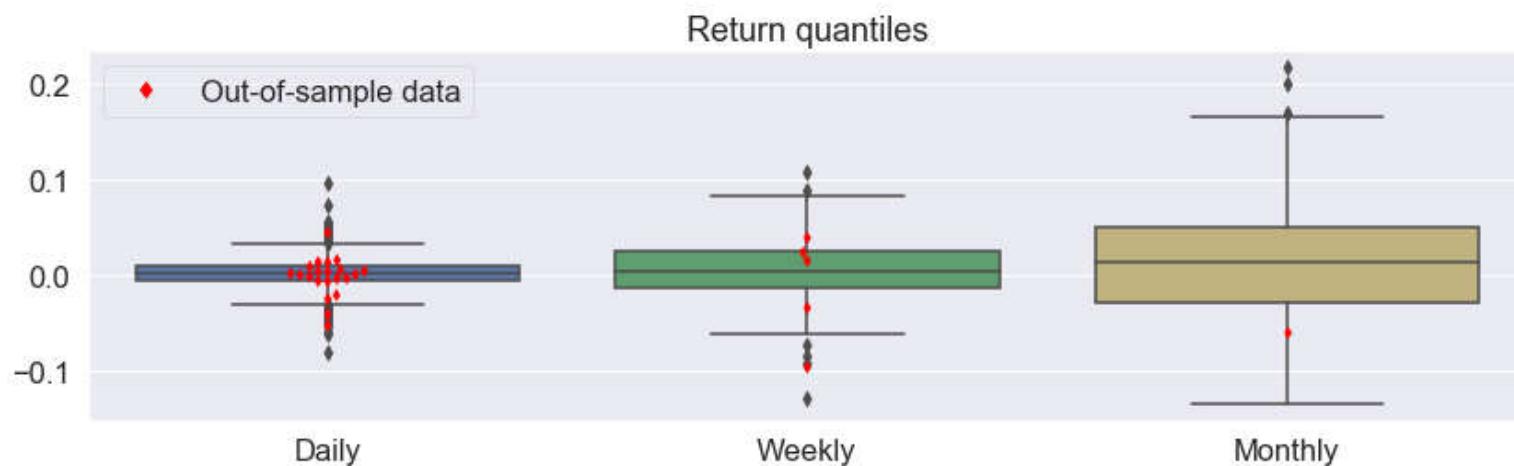
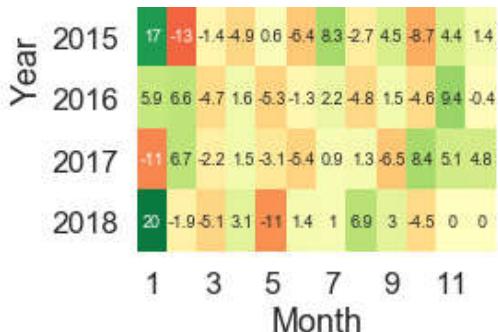
Rolling volatility (6-month)



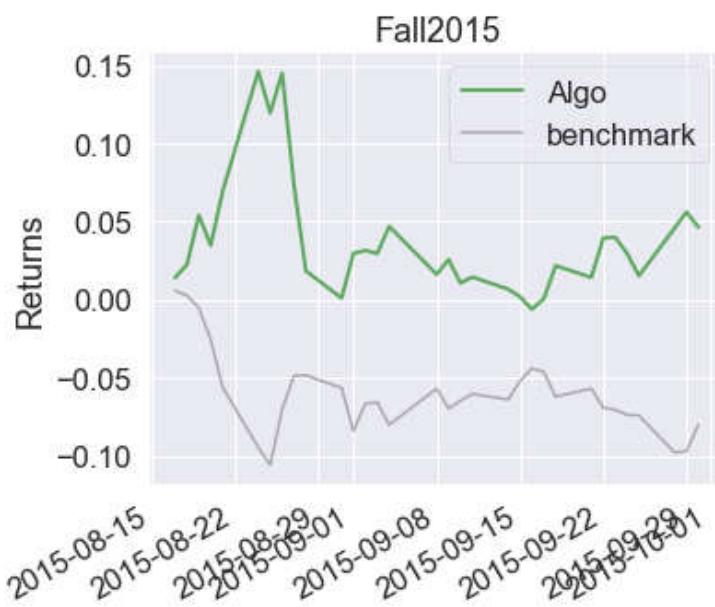
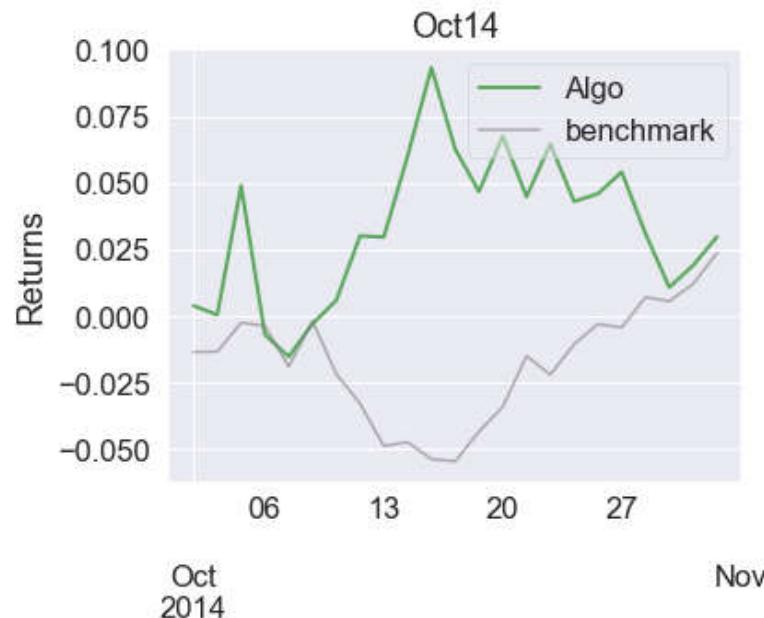
Rolling Sharpe ratio (6-month)







Stress Events	mean	min	max
Apr14	-0.24%	-3.56%	1.96%
Oct14	0.15%	-5.33%	4.85%
Fall2015	0.17%	-6.27%	7.19%
New Normal	0.06%	-8.07%	9.48%



<b>Top 10 long positions of all time</b>	<b>max</b>
	<b>sid</b>
<b>BPH13</b>	9332.75%
<b>CDH13</b>	4519.73%
<b>JYH13</b>	3169.43%
<b>LCJ13</b>	2466.94%
<b>GCJ13</b>	1865.53%
<b>DAJ13</b>	1688.51%
<b>WK13</b>	1348.06%
<b>MPH15</b>	612.61%
<b>ECH15</b>	511.81%
<b>FFF16</b>	371.88%

<b>Top 10 short positions of all time</b>	<b>max</b>
	<b>sid</b>
<b>RUH13</b>	-3560.58%
<b>YMH13</b>	-2440.58%
<b>ESH13</b>	-2214.91%
<b>NKH13</b>	-2138.43%
<b>NQH13</b>	-1856.48%
<b>RBJ13</b>	-1318.96%
<b>PAM13</b>	-1183.50%
<b>FFX15</b>	-368.70%
<b>ESH15</b>	-359.12%
<b>NQH15</b>	-319.07%

Top 10 positions of all time	max
sid	
<b>BPH13</b>	9332.75%
<b>CDH13</b>	4519.73%
<b>RUH13</b>	3560.58%
<b>JYH13</b>	3169.43%
<b>LCJ13</b>	2466.94%
<b>YMH13</b>	2440.58%
<b>ESH13</b>	2214.91%
<b>NKH13</b>	2138.43%
<b>GCJ13</b>	1865.53%
<b>NQH13</b>	1856.48%

All positions ever held	max
sid	
<b>BPH13</b>	9332.75%
<b>CDH13</b>	4519.73%
<b>RUH13</b>	3560.58%
<b>JYH13</b>	3169.43%
<b>LCJ13</b>	2466.94%
<b>YMH13</b>	2440.58%
<b>ESH13</b>	2214.91%
<b>NKH13</b>	2138.43%
<b>GCJ13</b>	1865.53%
<b>NQH13</b>	1856.48%
<b>DAJ13</b>	1688.51%
<b>WK13</b>	1348.06%
<b>RBJ13</b>	1318.96%
<b>PAM13</b>	1183.50%
<b>MPH15</b>	612.61%
<b>ECH15</b>	511.81%
<b>FFF16</b>	371.88%
<b>ADH15</b>	368.82%
<b>FFX15</b>	368.70%
<b>ESH15</b>	359.12%
<b>NQH15</b>	319.07%
<b>MDH15</b>	318.94%
<b>ECM18</b>	300.79%
<b>USM18</b>	300.04%

All positions ever held	max
sid	
<b>FVH16</b>	282.48%
<b>SFM18</b>	276.81%
<b>ADM18</b>	259.81%
<b>TUM15</b>	236.65%
<b>NKH15</b>	235.56%
<b>ULM18</b>	232.38%
<b>EDU13</b>	225.94%
<b>FFJ13</b>	222.63%
<b>FFK13</b>	219.10%
<b>TUU15</b>	217.48%
<b>PLJ15</b>	202.96%
<b>FVM16</b>	196.35%
<b>MDM18</b>	195.67%
<b>SH15</b>	182.75%
<b>DAM18</b>	182.33%
<b>CH15</b>	180.27%
<b>TYH16</b>	174.47%
<b>CN18</b>	172.19%
<b>FFF15</b>	163.35%
<b>FFZ14</b>	160.87%
<b>SMH15</b>	157.22%
<b>NKM18</b>	151.96%
<b>JYH15</b>	150.82%
<b>WH15</b>	137.63%

All positions ever held	max
sid	
<b>FFM13</b>	133.87%
<b>EDH17</b>	133.46%
<b>PLN18</b>	132.53%
<b>LNJ15</b>	130.33%
<b>FFN17</b>	129.39%
<b>BZN18</b>	129.31%
<b>EDZ15</b>	127.65%
<b>YMH15</b>	125.37%
<b>FFQ17</b>	124.69%
<b>BON18</b>	124.07%
<b>TYM16</b>	122.10%
<b>HON18</b>	120.09%
<b>SIN18</b>	118.39%
<b>FFV15</b>	116.53%
<b>FFQ15</b>	116.22%
<b>TUU18</b>	115.91%
<b>TUZ18</b>	115.46%
<b>JYH16</b>	111.43%
<b>USH13</b>	110.31%
<b>FFJ17</b>	109.52%
<b>EDZ14</b>	108.36%
<b>FFM16</b>	107.09%
<b>FFV16</b>	106.28%
<b>SFU18</b>	105.77%

All positions ever held	max
sid	
RBN18	105.65%
FFX16	105.02%
EDM15	104.88%
WN18	104.65%
EDM13	101.62%
CDU18	99.18%
FFG16	98.16%
ADU18	93.33%
BPH16	92.13%
BPU18	91.23%
EDU14	90.51%
CDH15	89.24%
FFU14	88.83%
FFX13	88.03%
FFJ18	87.92%
TUM18	86.29%
FFH18	86.14%
NGH15	85.96%
FFK18	85.73%
FFN18	85.48%
EDM14	85.36%
FFJ15	84.25%
BPM15	83.30%
EDM16	82.82%

All positions ever held	max
sid	
<b>TUU13</b>	82.65%
<b>FFU13</b>	82.61%
<b>FFK15</b>	82.22%
<b>TUM13</b>	80.98%
<b>FFN13</b>	80.76%
<b>GCJ15</b>	79.91%
<b>EDH18</b>	79.60%
<b>CDH16</b>	79.16%
<b>ESM18</b>	78.49%
<b>TUZ13</b>	77.50%
<b>FFQ13</b>	77.31%
<b>CDM18</b>	76.13%
<b>USH16</b>	76.12%
<b>FFG14</b>	74.98%
<b>FFV14</b>	74.45%
<b>FFV13</b>	73.60%
<b>TUH16</b>	73.52%
<b>EDZ16</b>	73.47%
<b>FFN16</b>	73.01%
<b>EDM18</b>	72.81%
<b>FFF14</b>	72.71%
<b>FFK16</b>	72.51%
<b>ESU18</b>	72.06%
<b>MPM18</b>	71.98%

All positions ever held	max
sid	
<b>FFJ14</b>	71.74%
<b>FFQ14</b>	71.47%
<b>EDZ18</b>	71.04%
<b>FFZ13</b>	70.03%
<b>EDH13</b>	69.67%
<b>FFH16</b>	69.66%
<b>CDM15</b>	69.66%
<b>GCQ18</b>	69.50%
<b>FFF18</b>	68.87%
<b>MDU18</b>	68.73%
<b>FFJ16</b>	68.50%
<b>FFN14</b>	68.03%
<b>JYM15</b>	67.65%
<b>FFH14</b>	67.65%
<b>DAG16</b>	67.58%
<b>HGH15</b>	67.50%
<b>ULH16</b>	66.88%
<b>MPH16</b>	66.19%
<b>FFG18</b>	65.33%
<b>MPU18</b>	65.06%
<b>ADH16</b>	64.41%
<b>YMU18</b>	64.13%
<b>NQM18</b>	63.49%
<b>EDU16</b>	62.16%

All positions ever held	max
sid	
YMH16	59.03%
NQU18	57.50%
ESH16	57.16%
USM16	56.74%
NKU18	51.40%
MDH16	51.17%
ULM16	50.82%
CDM17	49.63%
GCZ18	49.05%
NKM15	49.05%
MDM15	48.07%
SN18	47.94%
ESM17	47.92%
LCJ15	47.41%
CDZ15	47.11%
RUU18	46.86%
EDZ17	46.40%
DAF16	44.98%
TUU17	44.58%
NQM17	43.10%
ADM17	42.60%
YMM18	42.23%
WK15	41.72%
TUU16	40.21%

All positions ever held	max
sid	
<b>SX18</b>	39.81%
<b>EHN18</b>	39.73%
<b>BZJ13</b>	38.63%
<b>NKH16</b>	37.37%
<b>SK16</b>	36.24%
<b>MDM17</b>	36.24%
<b>TUZ17</b>	36.16%
<b>SMH16</b>	35.87%
<b>HOJ13</b>	35.68%
<b>CH16</b>	35.38%
<b>HGN18</b>	34.85%
<b>EHG16</b>	32.78%
<b>TUZ15</b>	32.03%
<b>HOV18</b>	32.01%
<b>BOZ18</b>	31.86%
<b>PLJ16</b>	31.45%
<b>NQZ15</b>	31.11%
<b>MDH13</b>	31.03%
<b>FVZ18</b>	30.99%
<b>BPH15</b>	30.63%
<b>PLV18</b>	30.39%
<b>BPZ15</b>	30.36%
<b>NQH16</b>	30.35%
<b>JYZ15</b>	30.14%

All positions ever held	max
sid	
<b>GCG16</b>	30.04%
<b>ECM15</b>	29.76%
<b>EHV18</b>	29.55%
<b>SIV18</b>	29.44%
<b>CK16</b>	29.43%
<b>NKM17</b>	29.20%
<b>JYU18</b>	29.07%
<b>SMK16</b>	29.04%
<b>EDM17</b>	28.88%
<b>WH13</b>	28.78%
<b>PAH13</b>	28.44%
<b>FVM18</b>	27.77%
<b>SMZ18</b>	27.76%
<b>MPM15</b>	27.48%
<b>EDH14</b>	27.42%
<b>SIH16</b>	27.37%
<b>MPM17</b>	27.13%
<b>RUH16</b>	27.11%
<b>HGH16</b>	26.69%
<b>SK15</b>	26.47%
<b>CLQ18</b>	26.25%
<b>SIU18</b>	26.12%
<b>NGN18</b>	25.94%
<b>LNJ16</b>	25.88%

All positions ever held	max
sid	
<b>HGH19</b>	25.77%
<b>WH16</b>	25.33%
<b>CK15</b>	25.27%
<b>LCG16</b>	25.22%
<b>HGU18</b>	25.15%
<b>EDZ13</b>	24.84%
<b>SIK15</b>	24.80%
<b>ADM15</b>	24.76%
<b>BPM17</b>	24.12%
<b>TUH17</b>	22.25%
<b>WK16</b>	21.94%
<b>FVZ17</b>	21.20%
<b>TUH18</b>	21.03%
<b>ECH13</b>	20.80%
<b>FVM13</b>	20.70%
<b>SFH13</b>	20.53%
<b>PAH16</b>	20.25%
<b>CN17</b>	20.25%
<b>BPU16</b>	19.71%
<b>SMF16</b>	19.68%
<b>TUZ16</b>	19.66%
<b>CZ18</b>	19.26%
<b>MPH13</b>	18.87%
<b>SN17</b>	18.84%

All positions ever held	max
sid	
<b>ESM15</b>	18.52%
<b>YMM17</b>	18.05%
<b>FVU13</b>	17.95%
<b>TUM16</b>	17.86%
<b>YMM15</b>	17.72%
<b>PLF16</b>	17.66%
<b>TYZ18</b>	17.49%
<b>PAM16</b>	17.45%
<b>TUU14</b>	17.43%
<b>ADU16</b>	17.39%
<b>BON17</b>	17.21%
<b>TUM14</b>	17.17%
<b>ADH13</b>	17.14%
<b>NQM15</b>	17.10%
<b>YMU16</b>	16.81%
<b>TYM18</b>	16.28%
<b>PLN17</b>	16.26%
<b>SIN17</b>	16.01%
<b>ESU16</b>	15.84%
<b>SMN17</b>	15.60%
<b>NGG16</b>	15.51%
<b>DAN16</b>	15.41%
<b>MPZ15</b>	15.34%
<b>RBG16</b>	15.31%

All positions ever held	max
sid	
<b>LNM17</b>	15.27%
<b>JYU16</b>	15.08%
<b>MDU16</b>	14.85%
<b>LNM15</b>	14.77%
<b>CLJ15</b>	14.45%
<b>YZM16</b>	14.43%
<b>PAM17</b>	14.23%
<b>RBH16</b>	14.13%
<b>RUZ15</b>	14.12%
<b>BZN17</b>	14.00%
<b>RUM17</b>	13.99%
<b>ESZ16</b>	13.90%
<b>LCQ15</b>	13.89%
<b>HGH13</b>	13.68%
<b>BZH16</b>	13.61%
<b>FVU16</b>	13.49%
<b>FVU17</b>	13.49%
<b>TYZ17</b>	13.46%
<b>HOG16</b>	13.46%
<b>HOM17</b>	13.40%
<b>YMH17</b>	13.39%
<b>DAM15</b>	13.31%
<b>NQU16</b>	13.27%
<b>SN16</b>	13.13%

All positions ever held	max
sid	
<b>TUZ14</b>	12.95%
<b>HOH16</b>	12.84%
<b>CLM17</b>	12.79%
<b>PAU18</b>	12.66%
<b>YMU17</b>	12.49%
<b>RBH13</b>	12.41%
<b>MDZ16</b>	12.41%
<b>ESH17</b>	12.30%
<b>MPM16</b>	12.20%
<b>TUH15</b>	12.13%
<b>ECU17</b>	12.02%
<b>MPU16</b>	11.89%
<b>NQZ16</b>	11.86%
<b>YMM16</b>	11.76%
<b>GCM16</b>	11.59%
<b>CLG16</b>	11.53%
<b>DAQ18</b>	11.47%
<b>DAU16</b>	11.43%
<b>ESU17</b>	11.32%
<b>RBJ16</b>	11.29%
<b>SMN16</b>	11.18%
<b>CLK15</b>	11.10%
<b>ESM16</b>	11.10%
<b>MDM16</b>	11.06%

All positions ever held	max
sid	
YZM17	11.06%
PLN15	10.95%
USU16	10.87%
NGH16	10.84%
CLH16	10.82%
ADU17	10.72%
JYM16	10.68%
NQH17	10.52%
MPZ16	10.33%
GCZ16	10.31%
LCV16	10.30%
RUZ16	10.25%
TYM13	10.22%
MDH17	10.20%
RBF16	10.07%
ESZ17	10.00%
ADH17	9.99%
JYU15	9.88%
NGJ16	9.81%
SN15	9.59%
PLJ13	9.45%
BZG16	9.43%
CDU17	9.43%
HOH13	9.39%

All positions ever held	max
sid	
<b>ULU16</b>	9.39%
<b>EHN16</b>	9.37%
<b>CDZ17</b>	9.36%
<b>FVZ15</b>	9.33%
<b>LCM17</b>	9.17%
<b>BPU17</b>	9.17%
<b>RUH17</b>	9.16%
<b>TUM17</b>	9.10%
<b>TYU13</b>	9.10%
<b>ECZ17</b>	8.93%
<b>EHQ18</b>	8.93%
<b>JYZ18</b>	8.91%
<b>TYU16</b>	8.77%
<b>ECU18</b>	8.75%
<b>NQU17</b>	8.71%
<b>HOF16</b>	8.65%
<b>CZ16</b>	8.58%
<b>USU15</b>	8.54%
<b>GCQ16</b>	8.52%
<b>GCJ16</b>	8.50%
<b>CN15</b>	8.39%
<b>USZ18</b>	8.36%
<b>LNQ17</b>	8.32%
<b>LNV16</b>	8.24%

All positions ever held	max
sid	
<b>TYU17</b>	8.19%
<b>BPZ17</b>	8.09%
<b>ADZ17</b>	8.04%
<b>SFZ18</b>	7.94%
<b>JYH18</b>	7.92%
<b>MDU15</b>	7.58%
<b>BZF16</b>	7.56%
<b>USZ17</b>	7.56%
<b>CLF16</b>	7.54%
<b>PAZ16</b>	7.50%
<b>NGF16</b>	7.40%
<b>BZG13</b>	7.38%
<b>ADZ18</b>	7.28%
<b>NQZ17</b>	7.24%
<b>FVH17</b>	7.17%
<b>ULZ18</b>	7.12%
<b>SMN15</b>	7.11%
<b>SIU16</b>	7.04%
<b>MPU17</b>	7.03%
<b>RUH18</b>	6.94%
<b>PLV16</b>	6.94%
<b>SH13</b>	6.89%
<b>HGN16</b>	6.87%
<b>WZ16</b>	6.85%

All positions ever held	max
sid	
<b>RUU16</b>	6.85%
<b>CLN17</b>	6.80%
<b>MPM13</b>	6.70%
<b>RBG13</b>	6.69%
<b>CK17</b>	6.63%
<b>ULU15</b>	6.63%
<b>TUH14</b>	6.58%
<b>FVZ16</b>	6.58%
<b>ULZ17</b>	6.55%
<b>FVH18</b>	6.55%
<b>SK17</b>	6.53%
<b>BZH13</b>	6.50%
<b>RUZ17</b>	6.49%
<b>BOK17</b>	6.49%
<b>CN16</b>	6.48%
<b>MDU17</b>	6.34%
<b>NKU17</b>	6.34%
<b>USU17</b>	6.30%
<b>NKH17</b>	6.28%
<b>DAN15</b>	6.09%
<b>EHH13</b>	6.07%
<b>BOZ16</b>	5.98%
<b>MPZ17</b>	5.92%
<b>HGU16</b>	5.89%

All positions ever held	max
sid	
<b>BPZ13</b>	5.88%
<b>GCQ15</b>	5.85%
<b>TYZ15</b>	5.80%
<b>LNV18</b>	5.78%
<b>LCQ16</b>	5.73%
<b>LNZ16</b>	5.67%
<b>NKZ17</b>	5.67%
<b>ESZ18</b>	5.66%
<b>WN17</b>	5.63%
<b>SMK17</b>	5.54%
<b>FVU15</b>	5.43%
<b>WK17</b>	5.39%
<b>MDZ18</b>	5.36%
<b>FVM15</b>	5.29%
<b>GCZ17</b>	5.26%
<b>RUZ18</b>	5.26%
<b>MPF15</b>	5.22%
<b>PAU16</b>	5.20%
<b>DAQ17</b>	5.13%
<b>YMZ18</b>	5.11%
<b>ADM13</b>	5.02%
<b>TYU15</b>	5.00%
<b>JYU17</b>	4.91%
<b>LNN16</b>	4.80%

All positions ever held	max
sid	
SFZ13	4.69%
SK18	4.66%
CDU13	4.63%
ECZ13	4.58%
WU16	4.58%
NKZ18	4.55%
RUU17	4.49%
HGN15	4.46%
HGU17	4.46%
TYH17	4.44%
CZ17	4.44%
NGV16	4.44%
MDM13	4.38%
TYH18	4.34%
PAU17	4.30%
DAX18	4.29%
NQZ18	4.24%
SMK18	4.14%
LCV18	4.10%
TYZ16	4.10%
BOK16	4.09%
ADU13	4.06%
DAV17	4.03%
USU13	4.01%

All positions ever held	max
sid	
<b>PAU15</b>	3.88%
<b>RUU13</b>	3.84%
<b>SFH17</b>	3.80%
<b>LCZ18</b>	3.75%
<b>LNV17</b>	3.73%
<b>HOX18</b>	3.67%
<b>FVH15</b>	3.51%
<b>BOK18</b>	3.49%
<b>LCZ13</b>	3.44%
<b>EHU18</b>	3.43%
<b>BZZ18</b>	3.42%
<b>TYM15</b>	3.41%
<b>BZX18</b>	3.32%
<b>FVM14</b>	3.32%
<b>MDZ13</b>	3.29%
<b>ECU13</b>	3.28%
<b>NGK17</b>	3.26%
<b>RBX18</b>	3.22%
<b>RBV18</b>	3.19%
<b>SMZ17</b>	3.18%
<b>WU18</b>	3.16%
<b>EHX18</b>	3.15%
<b>JYM13</b>	3.12%
<b>CLX18</b>	3.10%

All positions ever held	max
sid	
FVM17	3.09%
YMM13	3.05%
HOM18	3.05%
NQZ13	3.00%
FVU14	2.99%
CLM18	2.96%
CDU15	2.92%
CLU16	2.89%
HOX17	2.89%
MPU15	2.89%
LCQ13	2.86%
PLV17	2.85%
ESM13	2.77%
HGZ17	2.77%
DAU17	2.76%
BZU16	2.74%
LCM13	2.73%
EHF16	2.72%
LNZ13	2.69%
HOV17	2.69%
RBM18	2.67%
ECH17	2.65%
NGX18	2.65%
FVZ14	2.65%

All positions ever held	max
sid	
<b>RBU16</b>	2.64%
<b>CDM13</b>	2.63%
<b>PAZ17</b>	2.62%
<b>CLN18</b>	2.60%
<b>USH18</b>	2.57%
<b>SFH18</b>	2.52%
<b>WZ17</b>	2.47%
<b>BPH17</b>	2.45%
<b>SFU17</b>	2.41%
<b>CDM16</b>	2.38%
<b>CDH17</b>	2.37%
<b>ECZ16</b>	2.36%
<b>LNJ18</b>	2.36%
<b>RBQ16</b>	2.33%
<b>SFM17</b>	2.32%
<b>ECM17</b>	2.31%
<b>ADZ15</b>	2.29%
<b>SFZ16</b>	2.28%
<b>USM13</b>	2.27%
<b>ECU15</b>	2.26%
<b>RUM15</b>	2.26%
<b>ESU15</b>	2.24%
<b>TYH15</b>	2.21%
<b>ADU15</b>	2.20%

All positions ever held	max
sid	
<b>NQM13</b>	2.20%
<b>ECM16</b>	2.19%
<b>NKM13</b>	2.17%
<b>ECZ18</b>	2.17%
<b>EHV17</b>	2.16%
<b>ECZ15</b>	2.14%
<b>NGJ17</b>	2.10%
<b>LCV15</b>	2.09%
<b>SFU15</b>	2.08%
<b>TYM14</b>	2.05%
<b>SIK13</b>	2.03%
<b>SFM13</b>	2.02%
<b>CDZ16</b>	2.00%
<b>NQU15</b>	1.99%
<b>PAZ18</b>	1.99%
<b>ULH18</b>	1.98%
<b>LCZ15</b>	1.95%
<b>USH17</b>	1.93%
<b>NGV18</b>	1.92%
<b>MPH17</b>	1.92%
<b>BPZ18</b>	1.91%
<b>TYM17</b>	1.90%
<b>LNQ13</b>	1.90%
<b>EHJ13</b>	1.89%

All positions ever held	max
sid	
<b>BPZ14</b>	1.88%
<b>NGU17</b>	1.88%
<b>GCM13</b>	1.87%
<b>TYU14</b>	1.87%
<b>BOZ13</b>	1.86%
<b>GCJ18</b>	1.84%
<b>DAK16</b>	1.84%
<b>JYH17</b>	1.83%
<b>DAX15</b>	1.83%
<b>SFZ15</b>	1.80%
<b>DAN13</b>	1.79%
<b>USZ16</b>	1.78%
<b>ECZ14</b>	1.74%
<b>YMH18</b>	1.71%
<b>JYZ16</b>	1.68%
<b>ADM16</b>	1.67%
<b>HGH17</b>	1.67%
<b>LNJ13</b>	1.67%
<b>TYZ14</b>	1.66%
<b>SFZ14</b>	1.66%
<b>LCG17</b>	1.65%
<b>LCJ17</b>	1.65%
<b>BPZ16</b>	1.62%
<b>GCZ15</b>	1.61%

All positions ever held	max
sid	
<b>BOH17</b>	1.60%
<b>RBX13</b>	1.60%
<b>BPM14</b>	1.60%
<b>ECM14</b>	1.60%
<b>ESH18</b>	1.58%
<b>CDM14</b>	1.57%
<b>PLF14</b>	1.56%
<b>ULU17</b>	1.56%
<b>CDZ14</b>	1.55%
<b>ECU14</b>	1.54%
<b>DAF17</b>	1.52%
<b>SX15</b>	1.52%
<b>MPZ14</b>	1.50%
<b>NGV17</b>	1.50%
<b>ULH17</b>	1.48%
<b>DAZ16</b>	1.48%
<b>GCZ13</b>	1.47%
<b>SIN13</b>	1.45%
<b>GCQ13</b>	1.45%
<b>CDH18</b>	1.44%
<b>ECH18</b>	1.42%
<b>ULZ16</b>	1.42%
<b>BPU14</b>	1.41%
<b>WU13</b>	1.40%

All positions ever held	max
sid	
JYZ14	1.40%
LNM13	1.40%
LCM14	1.40%
SFM15	1.40%
HGK13	1.39%
USZ14	1.39%
CZ15	1.38%
SH18	1.37%
HGN13	1.37%
BON13	1.36%
WN13	1.36%
SF16	1.35%
HGZ15	1.34%
FVZ13	1.33%
SFM14	1.31%
SFU14	1.30%
ADH18	1.29%
BPH18	1.29%
CLQ13	1.29%
CZ13	1.29%
RUM14	1.29%
MDM14	1.28%
NKU15	1.27%
ADZ14	1.27%

All positions ever held	max
sid	
<b>RUX15</b>	1.26%
<b>EHF17</b>	1.25%
<b>JYU14</b>	1.24%
<b>SK13</b>	1.24%
<b>SFH15</b>	1.24%
<b>BOK13</b>	1.23%
<b>PLN13</b>	1.23%
<b>BOZ15</b>	1.22%
<b>PLV15</b>	1.22%
<b>GCG17</b>	1.21%
<b>EHM16</b>	1.21%
<b>LCM16</b>	1.21%
<b>SFZ17</b>	1.21%
<b>HOK13</b>	1.20%
<b>DAK15</b>	1.20%
<b>USM14</b>	1.20%
<b>LNJ17</b>	1.20%
<b>SMZ15</b>	1.19%
<b>HGZ16</b>	1.19%
<b>PAH17</b>	1.17%
<b>EHZ16</b>	1.17%
<b>FVH14</b>	1.17%
<b>USU14</b>	1.17%
<b>USH15</b>	1.15%

All positions ever held	max
sid	
<b>SX16</b>	1.15%
<b>MDH14</b>	1.13%
<b>JYM18</b>	1.10%
<b>HGU15</b>	1.09%
<b>PAZ15</b>	1.09%
<b>BOF17</b>	1.08%
<b>EHZ15</b>	1.08%
<b>WZ15</b>	1.07%
<b>NQH18</b>	1.07%
<b>PLN16</b>	1.07%
<b>MDH18</b>	1.06%
<b>SX17</b>	1.06%
<b>ESM14</b>	1.05%
<b>HOG17</b>	1.05%
<b>CK13</b>	1.05%
<b>DAN17</b>	1.05%
<b>YMZ14</b>	1.04%
<b>BZH17</b>	1.04%
<b>RUU14</b>	1.04%
<b>EHQ13</b>	1.04%
<b>CLK13</b>	1.03%
<b>SIN16</b>	1.03%
<b>EHM13</b>	1.03%
<b>LCQ14</b>	1.02%

All positions ever held	max
sid	
<b>YMM14</b>	1.02%
<b>RBG17</b>	1.01%
<b>DAK14</b>	1.01%
<b>MDZ17</b>	1.00%
<b>SIZ15</b>	1.00%
<b>ESZ14</b>	1.00%
<b>SX13</b>	0.99%
<b>MPM14</b>	0.98%
<b>ADU14</b>	0.97%
<b>NKH18</b>	0.96%
<b>ULM17</b>	0.96%
<b>JYZ17</b>	0.96%
<b>NKZ16</b>	0.95%
<b>LCV14</b>	0.95%
<b>MDZ14</b>	0.95%
<b>ADM14</b>	0.94%
<b>LCG15</b>	0.94%
<b>NQM14</b>	0.94%
<b>MPU14</b>	0.94%
<b>CLG17</b>	0.93%
<b>USM17</b>	0.91%
<b>WU17</b>	0.91%
<b>GCG18</b>	0.90%
<b>LNM14</b>	0.90%

All positions ever held	max
sid	
<b>ULM14</b>	0.88%
<b>RUZ14</b>	0.88%
<b>LCZ14</b>	0.88%
<b>ULH15</b>	0.87%
<b>SMK13</b>	0.87%
<b>ULU14</b>	0.86%
<b>SIK16</b>	0.86%
<b>YMU14</b>	0.86%
<b>PAM15</b>	0.85%
<b>SIH17</b>	0.85%
<b>MPH18</b>	0.85%
<b>RUU15</b>	0.85%
<b>ESU14</b>	0.84%
<b>MDU14</b>	0.83%
<b>EHZ18</b>	0.83%
<b>NQZ14</b>	0.83%
<b>ULU13</b>	0.81%
<b>SIU15</b>	0.81%
<b>ULZ14</b>	0.80%
<b>PLF17</b>	0.80%
<b>SIU13</b>	0.80%
<b>SMN13</b>	0.80%
<b>SMH17</b>	0.79%
<b>BPM18</b>	0.79%

All positions ever held	max
sid	
<b>EHJ14</b>	0.78%
<b>SMZ13</b>	0.77%
<b>NGK13</b>	0.76%
<b>PLJ17</b>	0.76%
<b>EHK14</b>	0.75%
<b>WH17</b>	0.75%
<b>HOU15</b>	0.73%
<b>NQU14</b>	0.72%
<b>NGZ18</b>	0.71%
<b>TYZ13</b>	0.71%
<b>DAJ17</b>	0.71%
<b>DAM14</b>	0.71%
<b>HOF17</b>	0.71%
<b>ADZ16</b>	0.71%
<b>RBU15</b>	0.71%
<b>GCZ14</b>	0.70%
<b>PLV13</b>	0.70%
<b>BZG17</b>	0.69%
<b>SIU17</b>	0.69%
<b>PLJ18</b>	0.69%
<b>DAQ14</b>	0.66%
<b>DAG18</b>	0.66%
<b>RBF17</b>	0.66%
<b>BNZ14</b>	0.66%

All positions ever held	max
sid	
<b>NGH17</b>	0.66%
<b>CLF17</b>	0.66%
<b>NGV15</b>	0.66%
<b>LNQ15</b>	0.65%
<b>TYH14</b>	0.64%
<b>DAK18</b>	0.64%
<b>HOQ17</b>	0.64%
<b>DAJ18</b>	0.63%
<b>BPU13</b>	0.63%
<b>HOF15</b>	0.63%
<b>HGZ14</b>	0.63%
<b>HOZ15</b>	0.62%
<b>HOZ14</b>	0.62%
<b>HOQ15</b>	0.62%
<b>NKZ14</b>	0.61%
<b>RUV15</b>	0.60%
<b>BOH18</b>	0.60%
<b>SIN15</b>	0.60%
<b>BZU14</b>	0.59%
<b>HGH18</b>	0.59%
<b>SN14</b>	0.58%
<b>WZ18</b>	0.58%
<b>BZU17</b>	0.58%
<b>BZF15</b>	0.58%

All positions ever held	max
sid	
<b>NKU16</b>	0.58%
<b>EHM15</b>	0.57%
<b>HGK14</b>	0.57%
<b>HON17</b>	0.57%
<b>HOH18</b>	0.57%
<b>PLF15</b>	0.57%
<b>SF18</b>	0.57%
<b>CLN14</b>	0.57%
<b>CLQ17</b>	0.57%
<b>RUM18</b>	0.57%
<b>NGG17</b>	0.56%
<b>SMF18</b>	0.56%
<b>LCJ18</b>	0.56%
<b>RBQ17</b>	0.56%
<b>WN15</b>	0.56%
<b>PLN14</b>	0.56%
<b>BZQ17</b>	0.55%
<b>PAU14</b>	0.55%
<b>HOM13</b>	0.55%
<b>CLH18</b>	0.55%
<b>DAZ15</b>	0.55%
<b>PLV14</b>	0.55%
<b>PAM14</b>	0.54%
<b>CLQ14</b>	0.52%

All positions ever held	max
sid	
<b>CLZ14</b>	0.52%
<b>HON14</b>	0.52%
<b>BZU15</b>	0.52%
<b>RBF15</b>	0.52%
<b>GCJ14</b>	0.52%
<b>CDH14</b>	0.52%
<b>PAH18</b>	0.52%
<b>GCQ14</b>	0.52%
<b>HOQ14</b>	0.51%
<b>RBZ14</b>	0.51%
<b>BZZ15</b>	0.51%
<b>RBH18</b>	0.51%
<b>RBG18</b>	0.50%
<b>RBV15</b>	0.50%
<b>BZZ14</b>	0.50%
<b>PLF18</b>	0.50%
<b>BZH18</b>	0.50%
<b>CLF15</b>	0.50%
<b>HGF15</b>	0.49%
<b>SMN14</b>	0.49%
<b>NGZ15</b>	0.49%
<b>HOG18</b>	0.49%
<b>SMK14</b>	0.49%
<b>ECH14</b>	0.49%

All positions ever held	max
sid	
RBN17	0.48%
BON14	0.48%
CDZ13	0.48%
CLZ15	0.48%
EHX16	0.48%
SMH18	0.48%
RBN14	0.47%
RBM14	0.47%
LCG18	0.47%
BZQ15	0.47%
CH18	0.47%
RUH14	0.46%
RBQ14	0.46%
CN14	0.46%
CLG18	0.46%
BPH14	0.46%
RUH15	0.45%
GCM14	0.45%
LCM18	0.44%
BZG18	0.44%
BZM18	0.44%
NKU14	0.44%
HOF18	0.44%
HOZ17	0.44%

All positions ever held	max
sid	
<b>SIK18</b>	0.44%
<b>SIH18</b>	0.44%
<b>HGG15</b>	0.44%
<b>SIZ17</b>	0.44%
<b>RUF15</b>	0.44%
<b>USZ15</b>	0.44%
<b>WN14</b>	0.44%
<b>LCG14</b>	0.43%
<b>BZF18</b>	0.43%
<b>CLU15</b>	0.43%
<b>BZJ18</b>	0.43%
<b>LCJ14</b>	0.43%
<b>BZK18</b>	0.42%
<b>EHG18</b>	0.42%
<b>EHZ14</b>	0.42%
<b>BZQ16</b>	0.42%
<b>EHZ17</b>	0.42%
<b>BOZ14</b>	0.42%
<b>NKM14</b>	0.42%
<b>LCZ16</b>	0.41%
<b>CLQ15</b>	0.41%
<b>CLK18</b>	0.41%
<b>EHF18</b>	0.41%
<b>BZZ17</b>	0.40%

All positions ever held	max
sid	
RBM17	0.40%
RBZ17	0.40%
LNZ17	0.40%
CLZ17	0.40%
CLM13	0.39%
EHX17	0.39%
CLF18	0.39%
SIN14	0.39%
CN13	0.38%
ECM13	0.38%
CLV15	0.38%
NGQ17	0.38%
SFH14	0.37%
SIK14	0.37%
CZ14	0.37%
BOH15	0.37%
YMU15	0.36%
RUM16	0.36%
SMN18	0.36%
USH14	0.36%
NGN17	0.36%
USZ13	0.36%
YMH14	0.35%
MDU13	0.35%

All positions ever held	max
sid	
<b>NGK14</b>	0.35%
<b>NGM15</b>	0.34%
<b>NGK15</b>	0.34%
<b>NGJ14</b>	0.34%
<b>BOF15</b>	0.34%
<b>WH18</b>	0.33%
<b>HOG15</b>	0.33%
<b>ESH14</b>	0.33%
<b>YMZ13</b>	0.33%
<b>HOH15</b>	0.33%
<b>MPU13</b>	0.32%
<b>LNG15</b>	0.32%
<b>WU14</b>	0.32%
<b>SMZ16</b>	0.32%
<b>SIH15</b>	0.31%
<b>NQH14</b>	0.31%
<b>DAG14</b>	0.31%
<b>LNM18</b>	0.31%
<b>HOK18</b>	0.31%
<b>BZG15</b>	0.31%
<b>YMU13</b>	0.30%
<b>BON16</b>	0.30%
<b>SIZ14</b>	0.29%
<b>ESZ13</b>	0.29%

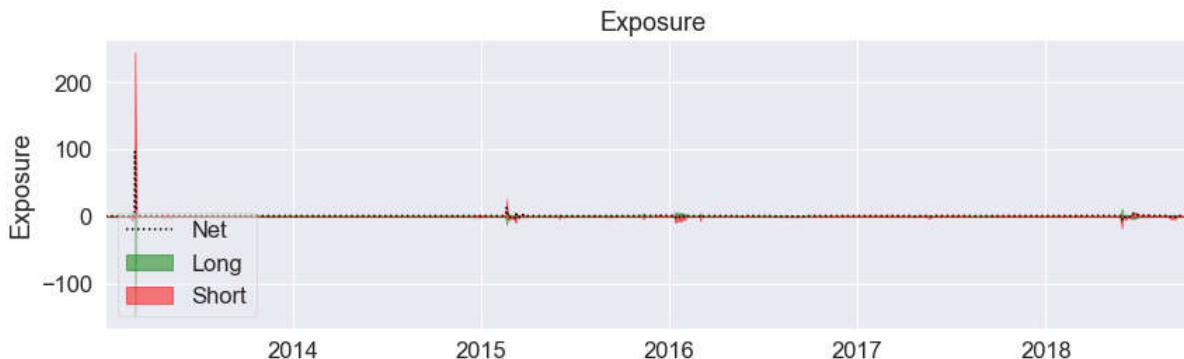
All positions ever held	max
sid	
<b>MPH14</b>	0.29%
<b>ADH14</b>	0.29%
<b>ADZ13</b>	0.28%
<b>NGZ14</b>	0.28%
<b>DAF14</b>	0.27%
<b>NKZ15</b>	0.27%
<b>JYH14</b>	0.27%
<b>NGF18</b>	0.27%
<b>ESU13</b>	0.26%
<b>RBK18</b>	0.26%
<b>LNJ14</b>	0.26%
<b>HOX16</b>	0.26%
<b>DAH14</b>	0.26%
<b>NGX17</b>	0.26%
<b>RBH15</b>	0.25%
<b>ULH14</b>	0.25%
<b>NGX16</b>	0.25%
<b>NGZ17</b>	0.25%
<b>BZH15</b>	0.25%
<b>HOZ16</b>	0.25%
<b>JYZ13</b>	0.25%
<b>BZZ16</b>	0.24%
<b>NGG18</b>	0.24%
<b>RBG15</b>	0.24%

All positions ever held	max
sid	
<b>NQU13</b>	0.24%
<b>EHX15</b>	0.24%
<b>BZN16</b>	0.23%
<b>CLX16</b>	0.23%
<b>LNV13</b>	0.23%
<b>RBZ16</b>	0.23%
<b>CLG15</b>	0.23%
<b>DAV14</b>	0.23%
<b>NGM13</b>	0.22%
<b>CLH15</b>	0.22%
<b>NGF15</b>	0.21%
<b>CLZ16</b>	0.21%
<b>HOG14</b>	0.21%
<b>BZZ13</b>	0.20%
<b>LNZ15</b>	0.20%
<b>BZG14</b>	0.20%
<b>DAQ13</b>	0.20%
<b>EHF14</b>	0.20%
<b>NGX14</b>	0.19%
<b>HOF14</b>	0.19%
<b>EHG14</b>	0.19%
<b>SF14</b>	0.19%
<b>EHU13</b>	0.19%
<b>EHV13</b>	0.19%

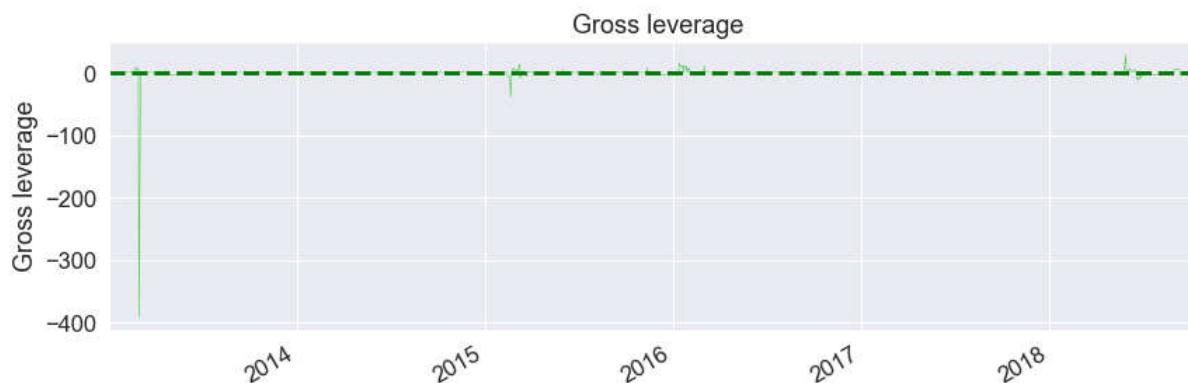
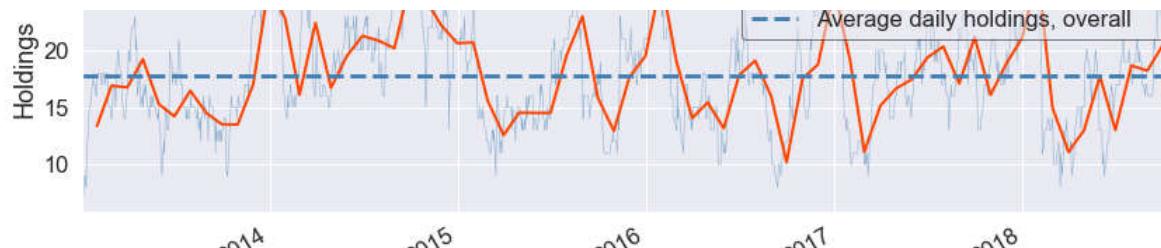
All positions ever held	max
sid	
<b>SK14</b>	0.19%
<b>HOV14</b>	0.19%
<b>HOJ14</b>	0.19%
<b>EHZ13</b>	0.19%
<b>SN13</b>	0.19%
<b>PAZ14</b>	0.19%
<b>BZV13</b>	0.18%
<b>HOH14</b>	0.18%
<b>DAU13</b>	0.18%
<b>BOH14</b>	0.18%
<b>HGH14</b>	0.18%
<b>HOV13</b>	0.18%
<b>NGG15</b>	0.18%
<b>SH14</b>	0.18%
<b>EHH14</b>	0.17%
<b>HOX14</b>	0.17%
<b>CLG14</b>	0.17%
<b>CLV13</b>	0.17%
<b>SIZ13</b>	0.17%
<b>SIH14</b>	0.17%
<b>HOU14</b>	0.17%
<b>HOZ13</b>	0.17%
<b>CLX14</b>	0.16%
<b>SMH14</b>	0.16%

All positions ever held	max
sid	
<b>CLU13</b>	0.16%
<b>CLK14</b>	0.16%
<b>BOF14</b>	0.16%
<b>RBK14</b>	0.15%
<b>CK14</b>	0.15%
<b>RBJ14</b>	0.15%
<b>HON16</b>	0.15%
<b>SMF14</b>	0.15%
<b>CLF14</b>	0.15%
<b>RBV14</b>	0.14%
<b>WH14</b>	0.14%
<b>NGG14</b>	0.14%
<b>RBH14</b>	0.14%
<b>WZ13</b>	0.14%
<b>NKH14</b>	0.14%
<b>RBX14</b>	0.14%
<b>HGZ13</b>	0.14%
<b>CLN13</b>	0.14%
<b>NGH14</b>	0.14%
<b>PAH14</b>	0.13%
<b>EHU15</b>	0.13%
<b>GCG14</b>	0.13%
<b>SX14</b>	0.13%
<b>WU15</b>	0.13%

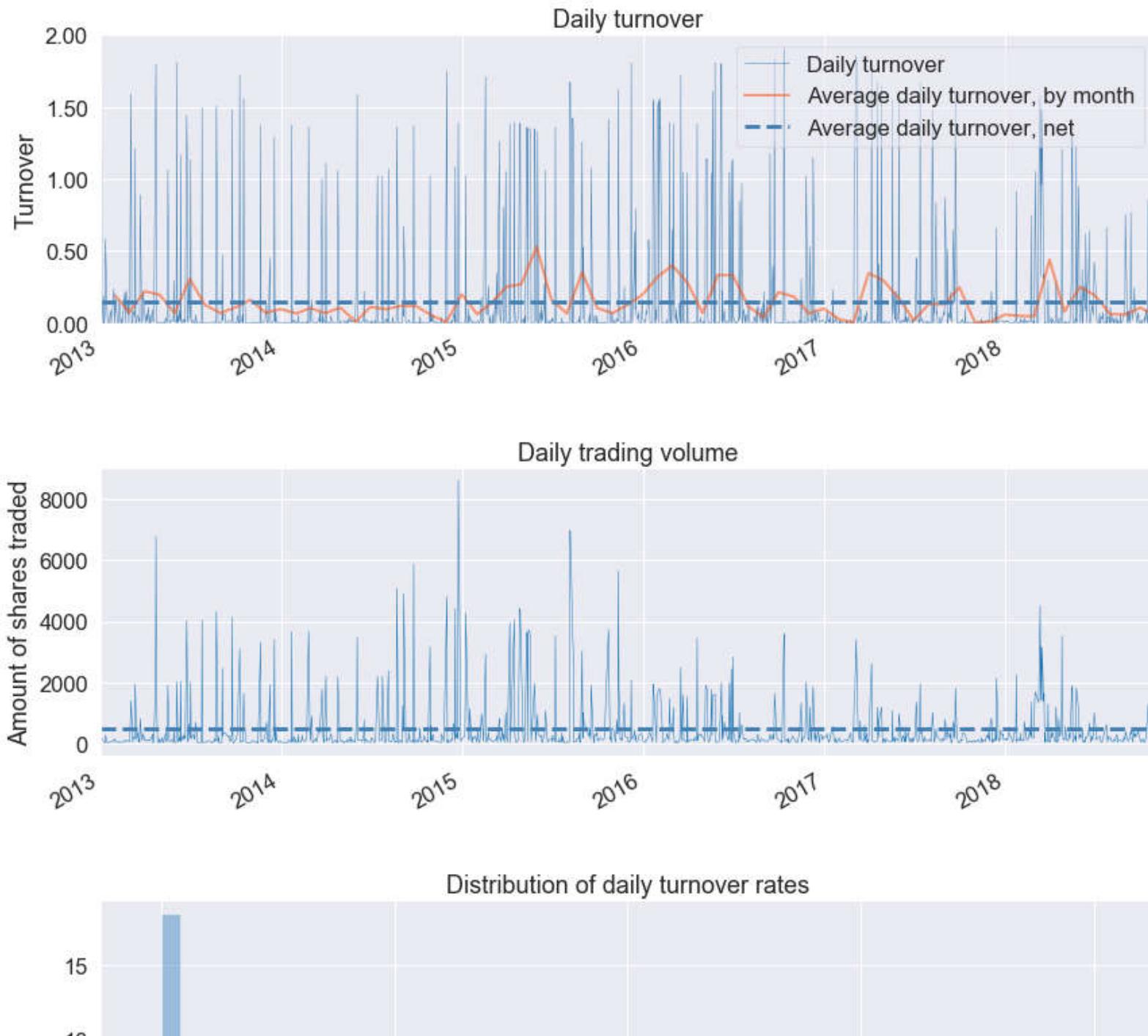
All positions ever held	max
sid	
<b>RBZ13</b>	0.13%
<b>NKZ13</b>	0.13%
<b>CH14</b>	0.12%
<b>RBZ15</b>	0.12%
<b>PAZ13</b>	0.12%
<b>NGX15</b>	0.12%
<b>SMZ14</b>	0.12%
<b>NGF14</b>	0.12%
<b>HOV15</b>	0.12%
<b>LNV14</b>	0.11%
<b>EHV14</b>	0.11%
<b>WZ14</b>	0.10%
<b>EHU14</b>	0.10%
<b>SIU14</b>	0.09%
<b>NGZ13</b>	0.09%
<b>RBQ15</b>	0.09%
<b>NGU15</b>	0.08%
<b>BZV15</b>	0.08%
<b>NGU13</b>	0.08%
<b>EHX14</b>	0.07%
<b>NGV14</b>	0.06%



## analytics

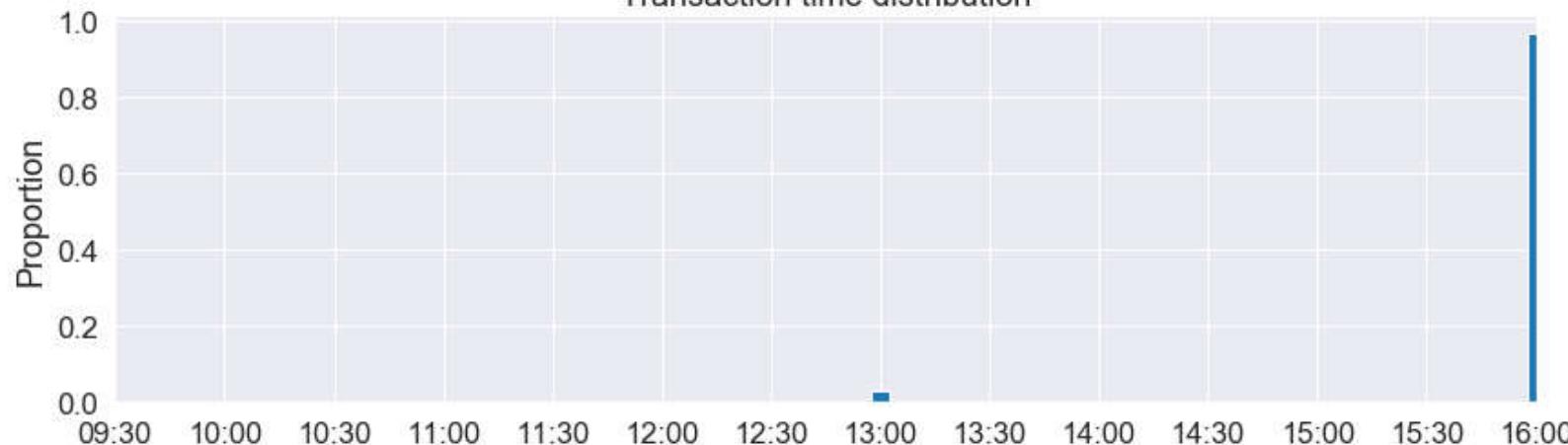








Transaction time distribution



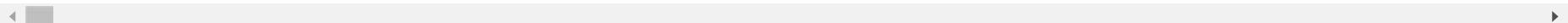
Summary stats	All trades	Short trades	Long trades
Total number of round_trips	1292.00	645.00	647.00
Percent profitable	0.47	0.48	0.46
Winning round_trips	606.00	308.00	298.00
Losing round_trips	666.00	330.00	336.00
Even round_trips	20.00	7.00	13.00

PnL stats	All trades	Short trades	Long trades
<b>Total profit</b>	\$11502335.70	\$8586035.64	\$2916300.06
<b>Gross profit</b>	\$79673852.42	\$43789279.61	\$35884572.82
<b>Gross loss</b>	\$-68171516.72	\$-35203243.97	\$-32968272.76
<b>Profit factor</b>	\$1.17	\$1.24	\$1.09
<b>Avg. trade net profit</b>	\$8902.74	\$13311.68	\$4507.42
<b>Avg. winning trade</b>	\$131475.00	\$142172.99	\$120418.03
<b>Avg. losing trade</b>	\$-102359.63	\$-106676.50	\$-98119.86
<b>Ratio Avg. Win:Avg. Loss</b>	\$1.28	\$1.33	\$1.23
<b>Largest winning trade</b>	\$1341250.00	\$1341250.00	\$934050.00
<b>Largest losing trade</b>	\$-1278750.00	\$-1278750.00	\$-454512.50

Duration stats	All trades	Short trades	Long trades
<b>Avg duration</b>	29 days 08:39:11.712074	28 days 17:40:00.017054	29 days 23:35:36.632148
<b>Median duration</b>	24 days 00:00:00	24 days 01:00:00	23 days 00:00:00
<b>Longest duration</b>	159 days 01:00:00	123 days 01:00:00	159 days 01:00:00
<b>Shortest duration</b>	0 days 00:00:00	0 days 00:00:00	0 days 00:00:00

Return stats	All trades	Short trades	Long trades
<b>Avg returns all round_trips</b>	0.11%	0.06%	0.16%
<b>Avg returns winning</b>	0.36%	0.28%	0.43%
<b>Avg returns losing</b>	-0.14%	-0.14%	-0.13%
<b>Median returns all round_trips</b>	0.00%	-0.00%	0.00%
<b>Median returns winning</b>	0.02%	0.02%	0.02%
<b>Median returns losing</b>	-0.02%	-0.02%	-0.02%
<b>Largest winning trade</b>	98.74%	15.64%	98.74%
<b>Largest losing trade</b>	-8.49%	-5.35%	-8.49%

Symbol stats	BZG13	RBG13	BZH13	RBH13	HOH13	EHH13	NKH13	WH13	SH13	YMH13	MDH13	RUH13	NQH13	ESH13	BZJ13	ECH13	EDH13
<b>Avg returns all round_trips</b>	-0.03%	0.04%	0.19%	1.99%	0.36%	-0.32%	0.09%	1.36%	-0.29%	0.07%	4.06%	-0.01%	0.02%	0.05%	-1.01%	-0.21%	0.00%
<b>Avg returns winning</b>	nan%	0.04%	0.19%	1.99%	0.36%	nan%	0.09%	1.36%	nan%	0.07%	4.06%	nan%	0.02%	0.05%	nan%	nan%	0.00%
<b>Avg returns losing</b>	-0.03%	nan%	nan%	nan%	nan%	-0.32%	nan%	nan%	-0.29%	nan%	nan%	-0.01%	nan%	nan%	-1.01%	-0.21%	nan%
<b>Median returns all round_trips</b>	-0.03%	0.04%	0.19%	1.99%	0.36%	-0.32%	0.09%	1.36%	-0.29%	0.07%	4.06%	-0.01%	0.02%	0.05%	-1.01%	-0.21%	0.00%
<b>Median returns winning</b>	nan%	0.04%	0.19%	1.99%	0.36%	nan%	0.09%	1.36%	nan%	0.07%	4.06%	nan%	0.02%	0.05%	nan%	nan%	0.00%
<b>Median returns losing</b>	-0.03%	nan%	nan%	nan%	nan%	-0.32%	nan%	nan%	-0.29%	nan%	nan%	-0.01%	nan%	nan%	-1.01%	-0.21%	nan%
<b>Largest winning trade</b>	-0.03%	0.04%	0.19%	1.99%	0.36%	-0.32%	0.09%	1.36%	-0.29%	0.07%	4.06%	-0.01%	0.02%	0.05%	-1.01%	-0.21%	0.00%
<b>Largest losing trade</b>	-0.03%	0.04%	0.19%	1.99%	0.36%	-0.32%	0.09%	1.36%	-0.29%	0.07%	4.06%	-0.01%	0.02%	0.05%	-1.01%	-0.21%	0.00%



Profitability (PnL / PnL total) per name	
symbol	
<b>ECH15</b>	11.66%
<b>RUZ14</b>	9.14%
<b>EDH18</b>	8.63%
<b>YZM17</b>	8.12%
<b>LNJ14</b>	5.87%
<b>EHJ14</b>	5.73%
<b>YMH18</b>	5.72%
<b>BZG15</b>	5.41%
<b>BZZ14</b>	5.40%
<b>ESH18</b>	4.85%
<b>ESZ17</b>	4.83%
<b>MPZ14</b>	4.70%
<b>CLF15</b>	4.49%
<b>CDH15</b>	4.47%
<b>RBF15</b>	4.40%
<b>PAU15</b>	4.27%
<b>NQH17</b>	4.21%
<b>TUH18</b>	4.16%
<b>NKM13</b>	3.93%
<b>FVH18</b>	3.83%
<b>HOF15</b>	3.78%
<b>HGZ16</b>	3.67%
<b>NKZ17</b>	3.67%
<b>SN16</b>	3.62%

Profitability (PnL / PnL total) per name	
symbol	
<b>SIU18</b>	3.56%
<b>HGU18</b>	3.52%
<b>LNJ15</b>	3.49%
<b>LNG15</b>	3.47%
<b>YMH17</b>	3.46%
<b>NQZ17</b>	3.46%
<b>ECZ16</b>	3.41%
<b>YZM16</b>	3.34%
<b>HOG15</b>	3.32%
<b>DAX18</b>	3.31%
<b>SMN16</b>	3.31%
<b>ADH15</b>	3.24%
<b>BZF15</b>	3.22%
<b>DAV14</b>	3.16%
<b>HGF15</b>	3.14%
<b>ECU17</b>	3.09%
<b>NQH18</b>	3.08%
<b>CLG15</b>	3.06%
<b>ESH17</b>	3.01%
<b>HGU17</b>	2.97%
<b>RUH17</b>	2.92%
<b>TYH18</b>	2.90%
<b>SIZ14</b>	2.86%
<b>RBG15</b>	2.83%

Profitability (PnL / PnL total) per name	
symbol	
FFF18	2.74%
ULH15	2.73%
LCM17	2.70%
YMU17	2.66%
EHX16	2.66%
MPU15	2.65%
FFJ17	2.63%
DAG14	2.63%
JYH13	2.62%
SIK16	2.62%
LCQ14	2.61%
ULZ18	2.61%
PLN15	2.60%
BON18	2.59%
NQM17	2.58%
ADU17	2.57%
HGU15	2.53%
CLG18	2.51%
CDZ14	2.48%
HOF16	2.44%
MPH15	2.44%
BPH15	2.42%
NGX15	2.40%
MDZ17	2.40%

Profitability (PnL / PnL total) per name	
symbol	
<b>PLN18</b>	2.39%
<b>RUH14</b>	2.39%
<b>EDZ17</b>	2.36%
<b>HGZ15</b>	2.36%
<b>ADZ14</b>	2.34%
<b>CDU15</b>	2.31%
<b>JYZ14</b>	2.30%
<b>CZ14</b>	2.30%
<b>SIN13</b>	2.29%
<b>HOM18</b>	2.29%
<b>USU13</b>	2.29%
<b>RBM18</b>	2.23%
<b>PAU17</b>	2.22%
<b>DAH14</b>	2.22%
<b>SFZ16</b>	2.22%
<b>NKH13</b>	2.20%
<b>EDH17</b>	2.18%
<b>GCQ18</b>	2.18%
<b>HOG16</b>	2.16%
<b>NKM15</b>	2.15%
<b>EHV14</b>	2.14%
<b>ECU14</b>	2.13%
<b>SN18</b>	2.12%
<b>MPH16</b>	2.11%

Profitability (PnL / PnL total) per name	
symbol	
<b>BOZ15</b>	2.10%
<b>EDZ15</b>	2.05%
<b>TYH16</b>	2.03%
<b>BPH13</b>	2.01%
<b>NGF15</b>	2.00%
<b>ADU18</b>	2.00%
<b>USH15</b>	1.98%
<b>CLX14</b>	1.93%
<b>PLF15</b>	1.92%
<b>SMZ13</b>	1.92%
<b>CLZ14</b>	1.92%
<b>GCQ15</b>	1.90%
<b>HOX14</b>	1.89%
<b>RBX14</b>	1.89%
<b>EHH14</b>	1.89%
<b>NKZ16</b>	1.88%
<b>DAF14</b>	1.87%
<b>DAK18</b>	1.87%
<b>BZG16</b>	1.85%
<b>CLU15</b>	1.85%
<b>CLM18</b>	1.84%
<b>ULU16</b>	1.84%
<b>NGH16</b>	1.83%
<b>SMH18</b>	1.82%

Profitability (PnL / PnL total) per name	
symbol	
HOU15	1.81%
USH16	1.80%
RUU18	1.80%
YMH13	1.78%
JYH18	1.78%
MDH13	1.76%
JYU14	1.76%
ESU18	1.76%
MPM17	1.75%
DAU16	1.71%
NKH15	1.71%
CLG16	1.71%
NGF18	1.69%
TYU13	1.69%
NQU14	1.69%
ADU15	1.67%
WU16	1.67%
RBU15	1.67%
YMU15	1.65%
DAK16	1.64%
LCG14	1.63%
LCV15	1.62%
ULH16	1.62%
PAH16	1.61%

Profitability (PnL / PnL total) per name	
symbol	
<b>MDH16</b>	1.61%
<b>BZU15</b>	1.60%
<b>RBG16</b>	1.60%
<b>USU16</b>	1.59%
<b>CLF16</b>	1.59%
<b>FFZ14</b>	1.57%
<b>SFZ18</b>	1.56%
<b>BOH17</b>	1.54%
<b>ESU17</b>	1.50%
<b>PAM14</b>	1.50%
<b>BOZ14</b>	1.49%
<b>BPZ14</b>	1.49%
<b>SFU14</b>	1.49%
<b>CDU17</b>	1.47%
<b>BZF16</b>	1.46%
<b>HOQ15</b>	1.45%
<b>GCG18</b>	1.44%
<b>ESM17</b>	1.44%
<b>BZM18</b>	1.43%
<b>USZ16</b>	1.43%
<b>SFM18</b>	1.41%
<b>ESH13</b>	1.40%
<b>EHF14</b>	1.40%
<b>CDH16</b>	1.39%

Profitability (PnL / PnL total) per name	
symbol	
<b>NQU16</b>	1.39%
<b>ECZ14</b>	1.35%
<b>RUF15</b>	1.35%
<b>USZ18</b>	1.34%
<b>MDZ16</b>	1.33%
<b>BPH18</b>	1.33%
<b>CLQ13</b>	1.32%
<b>SMK14</b>	1.32%
<b>DAU17</b>	1.32%
<b>RUU17</b>	1.31%
<b>EDZ18</b>	1.31%
<b>CDH14</b>	1.31%
<b>TYZ16</b>	1.31%
<b>TUZ18</b>	1.30%
<b>FFU13</b>	1.28%
<b>ECH18</b>	1.28%
<b>SMH16</b>	1.27%
<b>WZ16</b>	1.27%
<b>LNZ16</b>	1.27%
<b>SK14</b>	1.26%
<b>LNJ18</b>	1.26%
<b>BZG18</b>	1.26%
<b>NQZ13</b>	1.25%
<b>LCZ14</b>	1.24%

Profitability (PnL / PnL total) per name	
symbol	
FFJ18	1.24%
NGF14	1.23%
FVZ16	1.23%
BOK16	1.23%
HOG18	1.22%
RUZ15	1.22%
LCJ14	1.21%
MDM17	1.20%
HOV14	1.20%
HGG15	1.20%
MPM16	1.19%
ESH16	1.19%
BPU18	1.18%
GCM13	1.18%
SK17	1.17%
NGH17	1.16%
RUM17	1.14%
ULU14	1.14%
YMM13	1.14%
CLQ15	1.13%
RUX15	1.12%
EHZ13	1.12%
PAH18	1.12%
ULZ16	1.12%

Profitability (PnL / PnL total) per name	
symbol	
JYM15	1.11%
FFQ13	1.09%
RBZ14	1.08%
RUH16	1.07%
PLV18	1.06%
TUM18	1.05%
DAN13	1.04%
EHM13	1.04%
BPM14	1.04%
MDM18	1.03%
LNM13	1.03%
ULM14	1.02%
NGX18	1.02%
FVZ14	1.02%
EHU18	1.00%
BZH18	1.00%
TUZ14	1.00%
ADZ18	0.99%
ESM18	0.99%
USU14	0.99%
RBH16	0.98%
BZF18	0.98%
FFG14	0.98%
WH16	0.97%

Profitability (PnL / PnL total) per name	
symbol	
<b>HGK13</b>	0.97%
<b>WH14</b>	0.97%
<b>BOZ18</b>	0.96%
<b>HGZ14</b>	0.95%
<b>USM14</b>	0.95%
<b>SIU15</b>	0.95%
<b>TYM18</b>	0.95%
<b>DAF16</b>	0.94%
<b>EHF18</b>	0.94%
<b>FFX15</b>	0.93%
<b>TUZ17</b>	0.93%
<b>HOZ14</b>	0.92%
<b>JYZ16</b>	0.90%
<b>MDH17</b>	0.90%
<b>MPU17</b>	0.89%
<b>EDU13</b>	0.87%
<b>NKM18</b>	0.87%
<b>BOH18</b>	0.87%
<b>BPH14</b>	0.87%
<b>WU13</b>	0.86%
<b>RBH13</b>	0.86%
<b>TYH15</b>	0.86%
<b>DAK15</b>	0.85%
<b>NGF16</b>	0.85%

Profitability (PnL / PnL total) per name	
symbol	
BOK17	0.84%
BZQ15	0.84%
BZZ17	0.81%
TYZ14	0.80%
NGH14	0.79%
TUZ16	0.77%
SX14	0.77%
LCZ15	0.75%
EHV18	0.73%
CLZ17	0.73%
HOZ17	0.72%
HOH14	0.72%
HON17	0.71%
FFX13	0.71%
TUM15	0.71%
BZN18	0.70%
HGN18	0.70%
EDZ14	0.70%
LCJ13	0.70%
GCQ16	0.69%
BZH13	0.68%
SMF16	0.67%
SMZ14	0.66%
BPZ16	0.65%

Profitability (PnL / PnL total) per name	
symbol	
<b>NGZ15</b>	0.65%
<b>CLK18</b>	0.64%
<b>EHF17</b>	0.63%
<b>BZX18</b>	0.62%
<b>SMK17</b>	0.61%
<b>NGV18</b>	0.61%
<b>EHN16</b>	0.61%
<b>NGJ14</b>	0.60%
<b>FFF14</b>	0.59%
<b>EDU16</b>	0.58%
<b>MDH18</b>	0.58%
<b>HOZ15</b>	0.58%
<b>MDM15</b>	0.57%
<b>WH13</b>	0.57%
<b>SIU16</b>	0.57%
<b>LCQ16</b>	0.57%
<b>PAZ17</b>	0.56%
<b>ECZ18</b>	0.56%
<b>PAH13</b>	0.55%
<b>SIZ13</b>	0.55%
<b>ECH14</b>	0.54%
<b>ADZ13</b>	0.54%
<b>RBF17</b>	0.53%
<b>CLZ15</b>	0.52%

Profitability (PnL / PnL total) per name	
symbol	
<b>EHZ16</b>	0.52%
<b>RBQ16</b>	0.52%
<b>ADM14</b>	0.51%
<b>USH18</b>	0.51%
<b>PLF17</b>	0.50%
<b>MDU18</b>	0.50%
<b>SFZ15</b>	0.49%
<b>HOK13</b>	0.48%
<b>CK15</b>	0.48%
<b>CLN14</b>	0.48%
<b>LNZ13</b>	0.48%
<b>SMN13</b>	0.48%
<b>EHU13</b>	0.48%
<b>EHX15</b>	0.47%
<b>BON13</b>	0.47%
<b>RUZ16</b>	0.46%
<b>TYU14</b>	0.46%
<b>ESZ16</b>	0.46%
<b>NGX14</b>	0.45%
<b>ADH18</b>	0.45%
<b>LCM18</b>	0.44%
<b>MPM13</b>	0.44%
<b>CLX16</b>	0.44%
<b>EDM14</b>	0.44%

Profitability (PnL / PnL total) per name	
symbol	
<b>NKU14</b>	0.43%
<b>WU14</b>	0.43%
<b>NQH13</b>	0.42%
<b>LNQ17</b>	0.42%
<b>SMF14</b>	0.42%
<b>NGK15</b>	0.41%
<b>CZ17</b>	0.41%
<b>NGN17</b>	0.41%
<b>NGV16</b>	0.40%
<b>NGG16</b>	0.40%
<b>HOH13</b>	0.39%
<b>NGX17</b>	0.39%
<b>JYZ13</b>	0.39%
<b>DAK14</b>	0.38%
<b>BZZ15</b>	0.38%
<b>PLV16</b>	0.38%
<b>BOK18</b>	0.38%
<b>RBK14</b>	0.37%
<b>NQM13</b>	0.37%
<b>WK17</b>	0.37%
<b>EHZ18</b>	0.36%
<b>FFN13</b>	0.36%
<b>DAM15</b>	0.35%
<b>NGK13</b>	0.35%

Profitability (PnL / PnL total) per name	
symbol	
<b>NGQ17</b>	0.35%
<b>EDH14</b>	0.34%
<b>FVH15</b>	0.33%
<b>FFV15</b>	0.33%
<b>MDZ13</b>	0.32%
<b>WH15</b>	0.32%
<b>EDZ16</b>	0.32%
<b>DAQ17</b>	0.31%
<b>CDZ13</b>	0.31%
<b>HGN15</b>	0.30%
<b>LNM17</b>	0.30%
<b>YMM18</b>	0.30%
<b>ESM14</b>	0.30%
<b>CLX18</b>	0.30%
<b>NQH14</b>	0.28%
<b>LCG17</b>	0.28%
<b>TYU16</b>	0.27%
<b>RBX13</b>	0.27%
<b>HOF14</b>	0.27%
<b>HON14</b>	0.27%
<b>RBN14</b>	0.27%
<b>ESH14</b>	0.26%
<b>WZ17</b>	0.26%
<b>HOV17</b>	0.26%

Profitability (PnL / PnL total) per name	
symbol	
<b>FFQ14</b>	0.26%
<b>PAU14</b>	0.25%
<b>SIK13</b>	0.25%
<b>HOK18</b>	0.25%
<b>LNQ13</b>	0.25%
<b>NKH17</b>	0.24%
<b>NGZ18</b>	0.24%
<b>RBG18</b>	0.24%
<b>FVH16</b>	0.24%
<b>FFV16</b>	0.24%
<b>CZ16</b>	0.24%
<b>BPU17</b>	0.24%
<b>LCG18</b>	0.23%
<b>PLV15</b>	0.23%
<b>TUU16</b>	0.23%
<b>FVU17</b>	0.23%
<b>BZQ17</b>	0.23%
<b>PAU16</b>	0.23%
<b>BOF14</b>	0.22%
<b>WZ14</b>	0.22%
<b>YMM16</b>	0.21%
<b>GCZ13</b>	0.21%
<b>SFM13</b>	0.21%
<b>EHX18</b>	0.20%

Profitability (PnL / PnL total) per name	
symbol	
CLJ15	0.20%
JYH15	0.20%
SH14	0.20%
FFU14	0.19%
GCZ18	0.19%
DAN17	0.19%
GCM14	0.18%
BZG17	0.18%
LCG16	0.18%
CLF18	0.18%
BZV13	0.17%
SIK14	0.16%
RBG13	0.16%
BPH16	0.16%
EHN18	0.16%
SN17	0.15%
LNN16	0.15%
NKZ13	0.15%
JYH16	0.15%
MDM16	0.15%
SK16	0.15%
SIZ17	0.14%
EHU14	0.13%
EDH13	0.13%

Profitability (PnL / PnL total) per name	
symbol	
<b>TYU15</b>	0.12%
<b>FFZ13</b>	0.12%
<b>FVZ15</b>	0.12%
<b>NGQ13</b>	0.12%
<b>HOX16</b>	0.12%
<b>MDH14</b>	0.12%
<b>NGV17</b>	0.11%
<b>NGV15</b>	0.11%
<b>FFG16</b>	0.11%
<b>FFQ17</b>	0.11%
<b>HOU14</b>	0.11%
<b>DAX15</b>	0.11%
<b>LNJ16</b>	0.10%
<b>BOZ13</b>	0.10%
<b>PAZ16</b>	0.09%
<b>PLV14</b>	0.09%
<b>RBN17</b>	0.09%
<b>ESM13</b>	0.09%
<b>SIN15</b>	0.09%
<b>ECM13</b>	0.08%
<b>FVU15</b>	0.07%
<b>BPZ13</b>	0.07%
<b>NQU13</b>	0.07%
<b>GCG14</b>	0.07%

Profitability (PnL / PnL total) per name	
symbol	
<b>ECM18</b>	0.07%
<b>WN13</b>	0.06%
<b>CK17</b>	0.06%
<b>RBV18</b>	0.05%
<b>CLK13</b>	0.05%
<b>BOH14</b>	0.04%
<b>TYZ15</b>	0.04%
<b>DAZ16</b>	0.04%
<b>EDM16</b>	0.04%
<b>RBK18</b>	0.04%
<b>BPU16</b>	0.04%
<b>RUU15</b>	0.03%
<b>LNV18</b>	0.03%
<b>HOX18</b>	0.03%
<b>FVU16</b>	0.02%
<b>BZN16</b>	0.02%
<b>CLN13</b>	0.02%
<b>MPM14</b>	0.02%
<b>NGU17</b>	0.02%
<b>MDM13</b>	0.02%
<b>FVZ18</b>	0.02%
<b>ESZ13</b>	0.02%
<b>ESM16</b>	0.01%
<b>SIU14</b>	0.01%

Profitability (PnL / PnL total) per name	
symbol	
<b>MPH13</b>	0.00%
<b>FFN14</b>	0.00%
<b>FFK16</b>	0.00%
<b>ADM18</b>	0.00%
<b>EHM16</b>	0.00%
<b>FFJ16</b>	0.00%
<b>FFH18</b>	0.00%
<b>FFJ15</b>	0.00%
<b>PLN16</b>	-0.00%
<b>SMN14</b>	-0.01%
<b>CK13</b>	-0.01%
<b>LNV17</b>	-0.01%
<b>HOF18</b>	-0.01%
<b>SMN17</b>	-0.01%
<b>SFZ13</b>	-0.01%
<b>ESU14</b>	-0.01%
<b>FVU14</b>	-0.01%
<b>EHZ17</b>	-0.02%
<b>NKH18</b>	-0.02%
<b>YMH14</b>	-0.03%
<b>SFZ14</b>	-0.03%
<b>EDU14</b>	-0.03%
<b>TUU17</b>	-0.04%
<b>MPZ15</b>	-0.04%

Profitability (PnL / PnL total) per name	
symbol	
<b>HOV18</b>	-0.04%
<b>HOF17</b>	-0.04%
<b>EHJ13</b>	-0.04%
<b>SF14</b>	-0.04%
<b>CDU13</b>	-0.05%
<b>DAU13</b>	-0.05%
<b>ECZ13</b>	-0.05%
<b>RUM16</b>	-0.05%
<b>BZG13</b>	-0.06%
<b>CH16</b>	-0.06%
<b>CLH16</b>	-0.07%
<b>BON14</b>	-0.07%
<b>DAZ15</b>	-0.07%
<b>RBZ15</b>	-0.08%
<b>GCZ17</b>	-0.08%
<b>LCV18</b>	-0.09%
<b>LNV13</b>	-0.09%
<b>LNJ13</b>	-0.09%
<b>PLJ13</b>	-0.09%
<b>PLN14</b>	-0.10%
<b>FFG18</b>	-0.10%
<b>NKH16</b>	-0.10%
<b>BZQ16</b>	-0.11%
<b>CLF17</b>	-0.12%

Profitability (PnL / PnL total) per name	
symbol	
DAQ14	-0.12%
CDZ15	-0.13%
FFK18	-0.13%
FVM16	-0.13%
PLF18	-0.13%
GCZ16	-0.13%
DAQ13	-0.14%
NGU13	-0.15%
NGJ16	-0.15%
NGU15	-0.15%
GCQ13	-0.15%
BZZ13	-0.16%
CLU13	-0.16%
EHU15	-0.16%
SF18	-0.16%
SIU13	-0.16%
FVH14	-0.16%
CH15	-0.16%
SMK13	-0.17%
BZN14	-0.17%
MPU16	-0.19%
FFH14	-0.19%
WU15	-0.20%
BOK13	-0.20%

Profitability (PnL / PnL total) per name	
symbol	
<b>DAJ17</b>	-0.21%
<b>TUZ13</b>	-0.21%
<b>TUU18</b>	-0.21%
<b>NQM14</b>	-0.21%
<b>SH15</b>	-0.22%
<b>PLN13</b>	-0.22%
<b>GCJ13</b>	-0.22%
<b>ECH13</b>	-0.22%
<b>SX15</b>	-0.23%
<b>MDU14</b>	-0.23%
<b>USM16</b>	-0.23%
<b>RBF16</b>	-0.24%
<b>HGZ13</b>	-0.24%
<b>CK14</b>	-0.24%
<b>EDZ13</b>	-0.24%
<b>NQZ14</b>	-0.24%
<b>HOX17</b>	-0.24%
<b>BPU14</b>	-0.24%
<b>WH17</b>	-0.25%
<b>ECU18</b>	-0.25%
<b>TYM16</b>	-0.25%
<b>BZV15</b>	-0.25%
<b>BZZ18</b>	-0.26%
<b>FFK15</b>	-0.26%

<b>Profitability (PnL / PnL total) per name</b>	
<b>symbol</b>	
<b>ADU16</b>	-0.27%
<b>PAZ18</b>	-0.28%
<b>DAJ18</b>	-0.28%
<b>MPM18</b>	-0.28%
<b>SX18</b>	-0.28%
<b>FFH16</b>	-0.29%
<b>NGX16</b>	-0.29%
<b>SIH14</b>	-0.29%
<b>RUH13</b>	-0.29%
<b>JYU18</b>	-0.29%
<b>BPZ18</b>	-0.30%
<b>NQH15</b>	-0.31%
<b>MPH14</b>	-0.31%
<b>SMZ18</b>	-0.31%
<b>JYM13</b>	-0.31%
<b>ULM16</b>	-0.32%
<b>SN13</b>	-0.32%
<b>MDU13</b>	-0.32%
<b>LCZ13</b>	-0.32%
<b>NQH16</b>	-0.32%
<b>HGH16</b>	-0.33%
<b>NGG14</b>	-0.34%
<b>ADH14</b>	-0.34%
<b>FFV14</b>	-0.34%

<b>Profitability (PnL / PnL total) per name</b>	
<b>symbol</b>	
<b>PLJ15</b>	-0.35%
<b>RBM17</b>	-0.36%
<b>CLG14</b>	-0.36%
<b>EHX17</b>	-0.36%
<b>FFM13</b>	-0.36%
<b>EHG16</b>	-0.36%
<b>ESU13</b>	-0.37%
<b>PAM13</b>	-0.37%
<b>BZK18</b>	-0.37%
<b>HOM13</b>	-0.37%
<b>SK13</b>	-0.37%
<b>RBZ17</b>	-0.37%
<b>MDH15</b>	-0.37%
<b>CH14</b>	-0.38%
<b>NGV14</b>	-0.38%
<b>FFQ15</b>	-0.38%
<b>BOF15</b>	-0.38%
<b>JYZ18</b>	-0.38%
<b>TYZ18</b>	-0.38%
<b>SIU17</b>	-0.39%
<b>CLV13</b>	-0.40%
<b>CLK14</b>	-0.40%
<b>TYH14</b>	-0.40%
<b>EHX14</b>	-0.40%

Profitability (PnL / PnL total) per name	
symbol	
GCG17	-0.40%
EDM17	-0.41%
FVZ17	-0.41%
NGZ13	-0.41%
DAG16	-0.41%
BZU14	-0.41%
RBV14	-0.41%
YMH16	-0.42%
NKH14	-0.42%
CN15	-0.42%
JYH14	-0.43%
DAF17	-0.43%
SIH18	-0.43%
HGN13	-0.45%
CZ13	-0.45%
BZH17	-0.45%
PLN17	-0.46%
SIV18	-0.46%
NKZ18	-0.47%
SK18	-0.47%
SFU17	-0.48%
FFK13	-0.48%
RBQ15	-0.49%
WZ18	-0.50%

Profitability (PnL / PnL total) per name	
symbol	
<b>CDH18</b>	-0.50%
<b>YMU14</b>	-0.50%
<b>SK15</b>	-0.50%
<b>YMZ13</b>	-0.51%
<b>EHZ14</b>	-0.51%
<b>SMH14</b>	-0.51%
<b>ADU14</b>	-0.51%
<b>RBV15</b>	-0.52%
<b>YMM14</b>	-0.52%
<b>ESM15</b>	-0.52%
<b>NGK17</b>	-0.52%
<b>NKZ14</b>	-0.52%
<b>LCZ18</b>	-0.53%
<b>TUH17</b>	-0.53%
<b>HOZ13</b>	-0.53%
<b>WZ13</b>	-0.53%
<b>MDU17</b>	-0.53%
<b>TUM14</b>	-0.53%
<b>BZJ13</b>	-0.54%
<b>SIN17</b>	-0.54%
<b>CN16</b>	-0.54%
<b>EHF16</b>	-0.54%
<b>LNM18</b>	-0.55%
<b>LCQ15</b>	-0.55%

Profitability (PnL / PnL total) per name	
symbol	
<b>MPU14</b>	-0.56%
<b>EHG18</b>	-0.56%
<b>BOH15</b>	-0.56%
<b>FFJ13</b>	-0.56%
<b>MPH17</b>	-0.56%
<b>BZG14</b>	-0.56%
<b>WH18</b>	-0.56%
<b>NQM15</b>	-0.56%
<b>TYZ13</b>	-0.56%
<b>NGH15</b>	-0.56%
<b>PLF14</b>	-0.57%
<b>NKM17</b>	-0.57%
<b>NQZ16</b>	-0.57%
<b>WZ15</b>	-0.58%
<b>BZZ16</b>	-0.58%
<b>TUM13</b>	-0.59%
<b>SFH14</b>	-0.59%
<b>YMU13</b>	-0.59%
<b>RBZ13</b>	-0.59%
<b>RUU13</b>	-0.59%
<b>GCZ14</b>	-0.60%
<b>RUU16</b>	-0.60%
<b>NGZ17</b>	-0.60%
<b>TYM14</b>	-0.61%

Profitability (PnL / PnL total) per name	
symbol	
NGM13	-0.61%
PAZ13	-0.61%
SFM17	-0.62%
ECM17	-0.62%
HOM17	-0.62%
TUH15	-0.63%
ULU13	-0.63%
LCJ17	-0.64%
CDZ16	-0.64%
DAJ13	-0.65%
NQU17	-0.67%
PAH14	-0.67%
CLG17	-0.67%
ADM13	-0.67%
HON16	-0.68%
USH14	-0.68%
CN13	-0.68%
HOG14	-0.68%
LCM13	-0.69%
USH13	-0.69%
USZ14	-0.70%
JYZ17	-0.70%
SIN16	-0.70%
TUH14	-0.70%

Profitability (PnL / PnL total) per name	
symbol	
FVZ13	-0.70%
USZ13	-0.71%
FVM14	-0.71%
NGN18	-0.72%
WK16	-0.72%
YMM17	-0.73%
CLM17	-0.74%
CDM17	-0.74%
BON17	-0.74%
CDM16	-0.75%
FVH17	-0.75%
RBH14	-0.75%
NGG15	-0.76%
SMK18	-0.76%
FFJ14	-0.76%
HGH13	-0.76%
EHQ13	-0.76%
TUU15	-0.77%
ADH13	-0.77%
RBJ13	-0.77%
JYM16	-0.77%
NQM18	-0.77%
BPZ15	-0.77%
NQU18	-0.77%

Profitability (PnL / PnL total) per name	
symbol	
FFX16	-0.77%
SFH13	-0.78%
TYZ17	-0.78%
PAZ14	-0.79%
EDM13	-0.79%
WN14	-0.79%
RBH18	-0.79%
CLQ14	-0.79%
EHV13	-0.79%
ECM14	-0.80%
RBJ14	-0.80%
EHH13	-0.80%
SIZ15	-0.80%
SH13	-0.81%
DAG18	-0.81%
YMU18	-0.82%
JYU16	-0.82%
YMU16	-0.82%
CLF14	-0.82%
HGH14	-0.83%
MPH18	-0.83%
NGK14	-0.83%
YZM14	-0.83%
MDU15	-0.83%

Profitability (PnL / PnL total) per name	
symbol	
ADM16	-0.85%
ESU16	-0.85%
CLQ17	-0.85%
ULH14	-0.85%
GCZ15	-0.86%
SMZ15	-0.86%
CLH18	-0.86%
LNV14	-0.86%
CLM13	-0.87%
RBG17	-0.87%
RBU16	-0.87%
SFM14	-0.87%
TYH17	-0.87%
JYU17	-0.87%
CDM13	-0.87%
HGU16	-0.88%
CDM14	-0.89%
PLF16	-0.89%
PLJ16	-0.89%
HOG17	-0.89%
ULZ14	-0.89%
ESZ14	-0.89%
ECZ15	-0.90%
RBM14	-0.90%

Profitability (PnL / PnL total) per name	
symbol	
<b>ADH16</b>	-0.90%
<b>HOJ14</b>	-0.91%
<b>TUU13</b>	-0.91%
<b>ECM16</b>	-0.91%
<b>LNJ17</b>	-0.91%
<b>CH18</b>	-0.92%
<b>LNQ15</b>	-0.92%
<b>TYM13</b>	-0.92%
<b>WK15</b>	-0.92%
<b>MDZ14</b>	-0.93%
<b>HOJ13</b>	-0.93%
<b>PAZ15</b>	-0.93%
<b>CN14</b>	-0.93%
<b>EHG14</b>	-0.93%
<b>EHV17</b>	-0.93%
<b>SFU18</b>	-0.93%
<b>HGK14</b>	-0.93%
<b>NKU18</b>	-0.93%
<b>RBQ14</b>	-0.94%
<b>LCQ13</b>	-0.94%
<b>HOQ14</b>	-0.95%
<b>EHQ18</b>	-0.96%
<b>SMH15</b>	-0.97%
<b>PAM17</b>	-0.97%

Profitability (PnL / PnL total) per name	
symbol	
YMM15	-0.98%
GCJ15	-0.98%
ADU13	-0.98%
RUM14	-0.99%
ADZ15	-0.99%
CDU18	-0.99%
NKM14	-1.00%
SIH16	-1.00%
DAM14	-1.01%
WN17	-1.01%
HOV15	-1.02%
SIN14	-1.03%
CLN17	-1.03%
ULH17	-1.05%
NGJ17	-1.05%
CZ18	-1.05%
HGN16	-1.05%
WU18	-1.05%
RBX18	-1.07%
HOV13	-1.07%
HOH18	-1.07%
FFF15	-1.08%
USH17	-1.09%
NKU17	-1.09%

Profitability (PnL / PnL total) per name	
symbol	
<b>PLV13</b>	-1.09%
<b>SN15</b>	-1.09%
<b>MPU13</b>	-1.10%
<b>WU17</b>	-1.10%
<b>BPZ17</b>	-1.10%
<b>LCM16</b>	-1.10%
<b>SH18</b>	-1.11%
<b>ADZ16</b>	-1.11%
<b>BPU13</b>	-1.11%
<b>YMZ18</b>	-1.12%
<b>LCM14</b>	-1.13%
<b>HGH19</b>	-1.14%
<b>JYM18</b>	-1.15%
<b>ULU15</b>	-1.15%
<b>EHK14</b>	-1.16%
<b>BZH16</b>	-1.16%
<b>ECZ17</b>	-1.17%
<b>CDH13</b>	-1.18%
<b>EHM15</b>	-1.18%
<b>FFN17</b>	-1.18%
<b>SMN15</b>	-1.18%
<b>USU15</b>	-1.19%
<b>BPM15</b>	-1.20%
<b>SIH15</b>	-1.20%

Profitability (PnL / PnL total) per name	
symbol	
<b>LCV14</b>	-1.20%
<b>CK16</b>	-1.21%
<b>WK13</b>	-1.21%
<b>BZJ18</b>	-1.22%
<b>JYZ15</b>	-1.22%
<b>SFU15</b>	-1.22%
<b>GCJ16</b>	-1.22%
<b>USZ17</b>	-1.23%
<b>SX13</b>	-1.23%
<b>BZU17</b>	-1.23%
<b>NKZ15</b>	-1.23%
<b>MDU16</b>	-1.23%
<b>DAV17</b>	-1.24%
<b>FFV13</b>	-1.28%
<b>FVM18</b>	-1.29%
<b>SX16</b>	-1.29%
<b>PAM15</b>	-1.30%
<b>RUH18</b>	-1.31%
<b>GCG16</b>	-1.31%
<b>HGH17</b>	-1.31%
<b>ULU17</b>	-1.31%
<b>USZ15</b>	-1.31%
<b>SIK15</b>	-1.33%
<b>LCZ16</b>	-1.34%

Profitability (PnL / PnL total) per name	
symbol	
GCJ18	-1.34%
CDZ17	-1.34%
TYM15	-1.35%
DAN15	-1.35%
PLJ18	-1.35%
SFZ17	-1.36%
ULH18	-1.37%
WN15	-1.37%
TYU17	-1.38%
CLU16	-1.39%
TUZ15	-1.39%
USU17	-1.40%
RBQ17	-1.41%
SF16	-1.41%
RUZ17	-1.41%
RBZ16	-1.41%
USM17	-1.42%
TUM17	-1.42%
CLV15	-1.42%
CLH15	-1.43%
LCJ15	-1.43%
PAU18	-1.43%
FVM17	-1.44%
CDM18	-1.44%

Profitability (PnL / PnL total) per name	
symbol	
FVU13	-1.45%
SIH17	-1.46%
RUM15	-1.46%
TYM17	-1.46%
SMK16	-1.46%
LNZ15	-1.46%
RUU14	-1.47%
SMZ17	-1.47%
BPH17	-1.48%
FVM13	-1.49%
BOF17	-1.49%
GCQ14	-1.51%
JYH17	-1.51%
HOZ16	-1.53%
TUH16	-1.53%
LNV16	-1.54%
CLZ16	-1.54%
PLJ17	-1.55%
NKU16	-1.55%
LNM15	-1.56%
FVM15	-1.57%
MPZ17	-1.58%
TUU14	-1.58%
DAM18	-1.59%

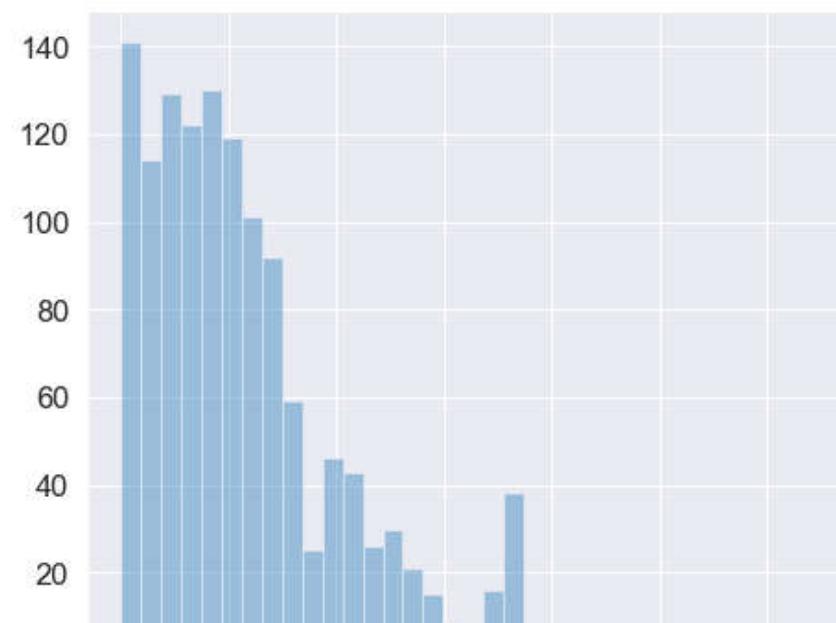
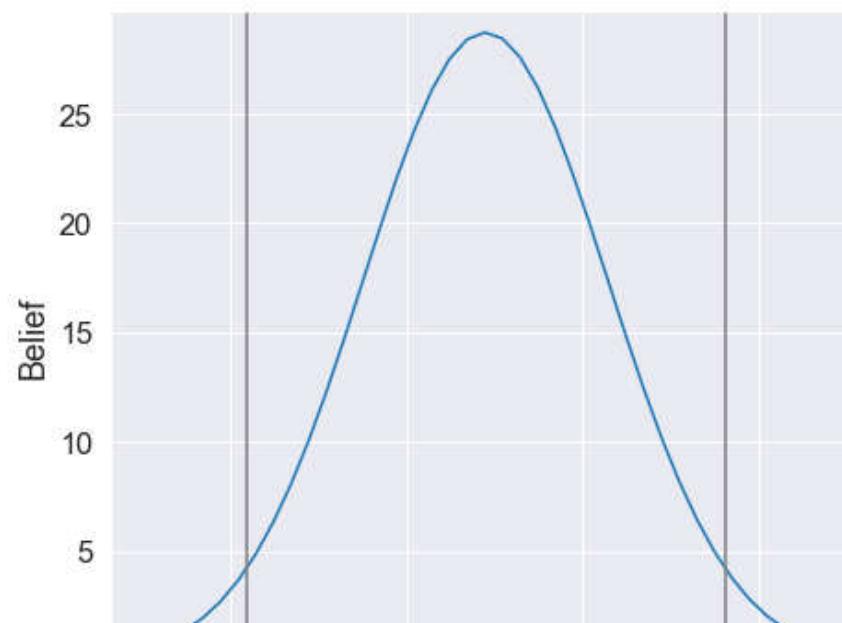
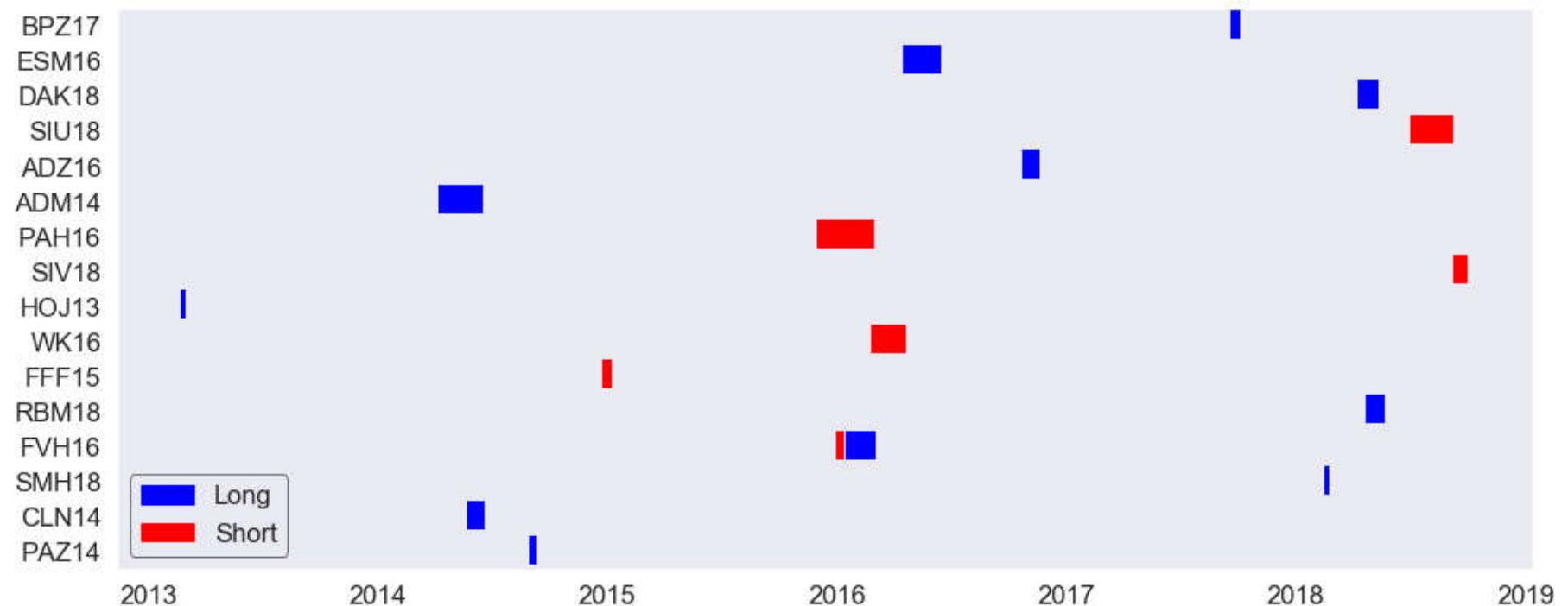
Profitability (PnL / PnL total) per name	
symbol	
<b>HOQ17</b>	-1.59%
<b>BZU16</b>	-1.59%
<b>HGH18</b>	-1.60%
<b>SMF18</b>	-1.61%
<b>CZ15</b>	-1.62%
<b>CLQ18</b>	-1.62%
<b>DAQ18</b>	-1.63%
<b>FFN16</b>	-1.63%
<b>BON16</b>	-1.65%
<b>NGZ14</b>	-1.66%
<b>ADM15</b>	-1.67%
<b>MPZ16</b>	-1.68%
<b>LCG15</b>	-1.68%
<b>LNZ17</b>	-1.68%
<b>ULM17</b>	-1.69%
<b>ECU13</b>	-1.69%
<b>SN14</b>	-1.70%
<b>CLK15</b>	-1.70%
<b>ECH17</b>	-1.70%
<b>GCJ14</b>	-1.71%
<b>RBN18</b>	-1.71%
<b>LNM14</b>	-1.71%
<b>EDM18</b>	-1.72%
<b>SFM15</b>	-1.73%

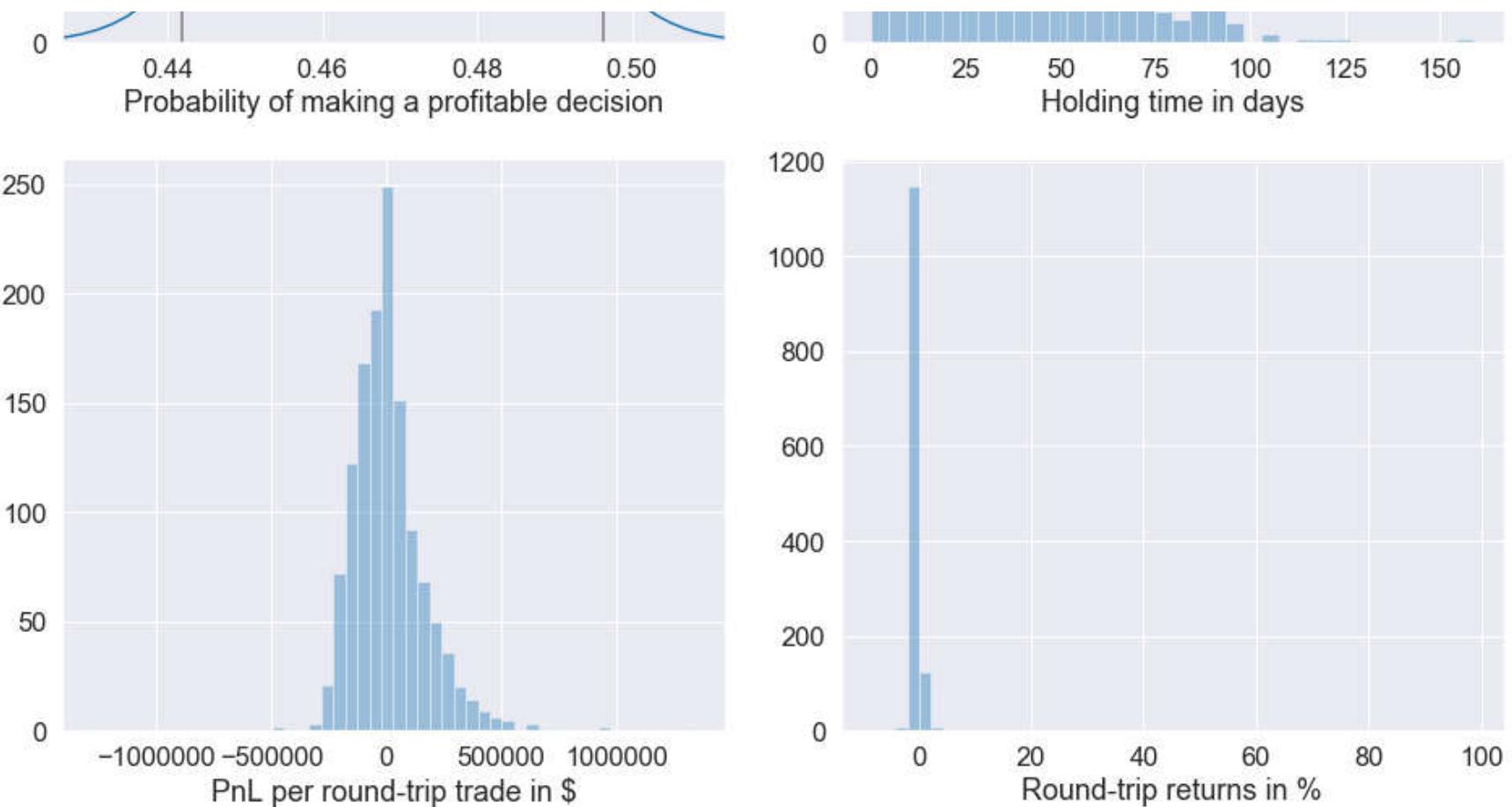
Profitability (PnL / PnL total) per name	
symbol	
<b>CDH17</b>	-1.74%
<b>EHZ15</b>	-1.76%
<b>LCV16</b>	-1.76%
<b>BZN17</b>	-1.76%
<b>LCJ18</b>	-1.78%
<b>MDZ18</b>	-1.78%
<b>NGM15</b>	-1.79%
<b>SMZ16</b>	-1.79%
<b>HON18</b>	-1.79%
<b>SFH17</b>	-1.80%
<b>FFF16</b>	-1.81%
<b>MDM14</b>	-1.82%
<b>CN18</b>	-1.82%
<b>RUM18</b>	-1.82%
<b>HGH15</b>	-1.82%
<b>GCM16</b>	-1.83%
<b>ESU15</b>	-1.86%
<b>TUM16</b>	-1.86%
<b>USM13</b>	-1.87%
<b>SMN18</b>	-1.89%
<b>RB16</b>	-1.90%
<b>SIK18</b>	-1.92%
<b>NGG18</b>	-1.94%
<b>SFH18</b>	-1.95%

Profitability (PnL / PnL total) per name	
symbol	
FFN18	-1.98%
RUZ18	-1.98%
ULZ17	-1.99%
ECU15	-2.00%
JYU15	-2.03%
HOH15	-2.03%
SMH17	-2.03%
SIN18	-2.04%
ESZ18	-2.07%
ADH17	-2.09%
HOH16	-2.11%
BPM18	-2.12%
ECM15	-2.13%
SX17	-2.16%
HGZ17	-2.16%
PAM16	-2.17%
BZH15	-2.21%
RBH15	-2.21%
CLN18	-2.25%
PLV17	-2.25%
NGG17	-2.27%
NQZ15	-2.28%
NQZ18	-2.29%
NKU15	-2.36%

Profitability (PnL / PnL total) per name	
symbol	
<b>ADZ17</b>	-2.45%
<b>ESH15</b>	-2.46%
<b>ULM18</b>	-2.51%
<b>DAN16</b>	-2.51%
<b>YMH15</b>	-2.59%
<b>CDM15</b>	-2.61%
<b>FFM16</b>	-2.62%
<b>BPM17</b>	-2.65%
<b>RUH15</b>	-2.77%
<b>BOZ16</b>	-2.80%
<b>MPM15</b>	-2.82%
<b>CN17</b>	-2.98%
<b>ADM17</b>	-3.02%
<b>PAH17</b>	-3.04%
<b>MPU18</b>	-3.08%
<b>EDM15</b>	-3.26%
<b>RUV15</b>	-3.42%
<b>NQU15</b>	-3.54%
<b>USM18</b>	-3.76%
<b>MPF15</b>	-4.04%
<b>WN18</b>	-4.09%
<b>SFH15</b>	-11.12%

Profitability (PnL / PnL total) per name	
symbol	
<b>Equities/US Index</b>	41.71%
<b>Energy/Crude Oil</b>	22.59%
<b>Interest Rate/Stir</b>	12.79%
<b>Agriculture/Dairy</b>	11.45%
<b>Energy/Ethanol</b>	9.97%
<b>Energy/Refined Products</b>	8.92%
<b>Metals/Base</b>	8.82%
<b>Equities/International Index</b>	6.98%
<b>Agriculture/Livestock</b>	5.71%
<b>FX/Emerging Markets</b>	4.95%
<b>Energy/Natural Gas</b>	3.31%
<b>No Sector Mapping</b>	0.12%
<b>Metals/Precious</b>	-4.90%
<b>FX/Majors</b>	-5.60%
<b>Interest Rate/US Treasury</b>	-8.36%
<b>Agriculture/Grain And Oilseed</b>	-18.44%





## PnL by root symbol in dollars and % of total PnL

```
In [8]: from pyfolio.round_trips import extract_round_trips, add_closing_transactions, apply_sector_mappings_to_round_trips
trips = add_closing_transactions(positions, transactions_mod)
trips['value'] = -trips.amount * trips.price
trips['root_symbol'] = trips['symbol'].apply(lambda x: x.root_symbol)
trips = trips.groupby(by='root_symbol').sum().sort_values(by='value', ascending=False)
trips['percent'] = round(trips.value.divide(abs(trips.value.sum())) * 100, 1)
del trips['amount']
del trips['price']
trips
```

Out[8]:

	value	percent
<b>root_symbol</b>		
<b>YM</b>	2061330.00	17.9
<b>BZ</b>	1743110.00	15.2
<b>ED</b>	1554232.50	13.5
<b>ES</b>	1504012.50	13.1
<b>EC</b>	1347875.00	11.7
<b>DA</b>	1316540.00	11.4
<b>EH</b>	1146892.00	10.0
<b>HG</b>	1014450.00	8.8
<b>HO</b>	952896.00	8.3
<b>CL</b>	855130.00	7.4
<b>NK</b>	803246.15	7.0
<b>LN</b>	772917.20	6.7
<b>NQ</b>	721315.00	6.3
<b>RU</b>	666312.50	5.8
<b>BO</b>	567396.00	4.9
<b>MD</b>	510456.00	4.4
<b>NG</b>	394210.00	3.4
<b>TY</b>	285888.00	2.5
<b>JY</b>	83618.75	0.7
<b>RB</b>	72576.00	0.6
<b>BP</b>	60187.50	0.5
<b>SI</b>	33925.00	0.3
<b>PA</b>	-15170.00	-0.1
<b>CD</b>	-16000.00	-0.1

	value	percent
<b>root_symbol</b>		
<b>FF</b>	-83340.00	-0.7
<b>PL</b>	-86685.00	-0.8
<b>MP</b>	-97330.00	-0.8
<b>LC</b>	-116692.40	-1.0
<b>UL</b>	-194857.00	-1.7
<b>AD</b>	-266300.00	-2.3
<b>SM</b>	-295140.00	-2.6
<b>TU</b>	-316024.00	-2.7
<b>FV</b>	-345563.00	-3.0
<b>US</b>	-391149.00	-3.4
<b>_S</b>	-452650.00	-3.9
<b>GC</b>	-495880.00	-4.3
<b>_W</b>	-792337.50	-6.9
<b>_C</b>	-1148062.50	-10.0
<b>SF</b>	-1853000.00	-16.1

## Visualization of trades for given root symbol

In [9]: `root = 'ES'`

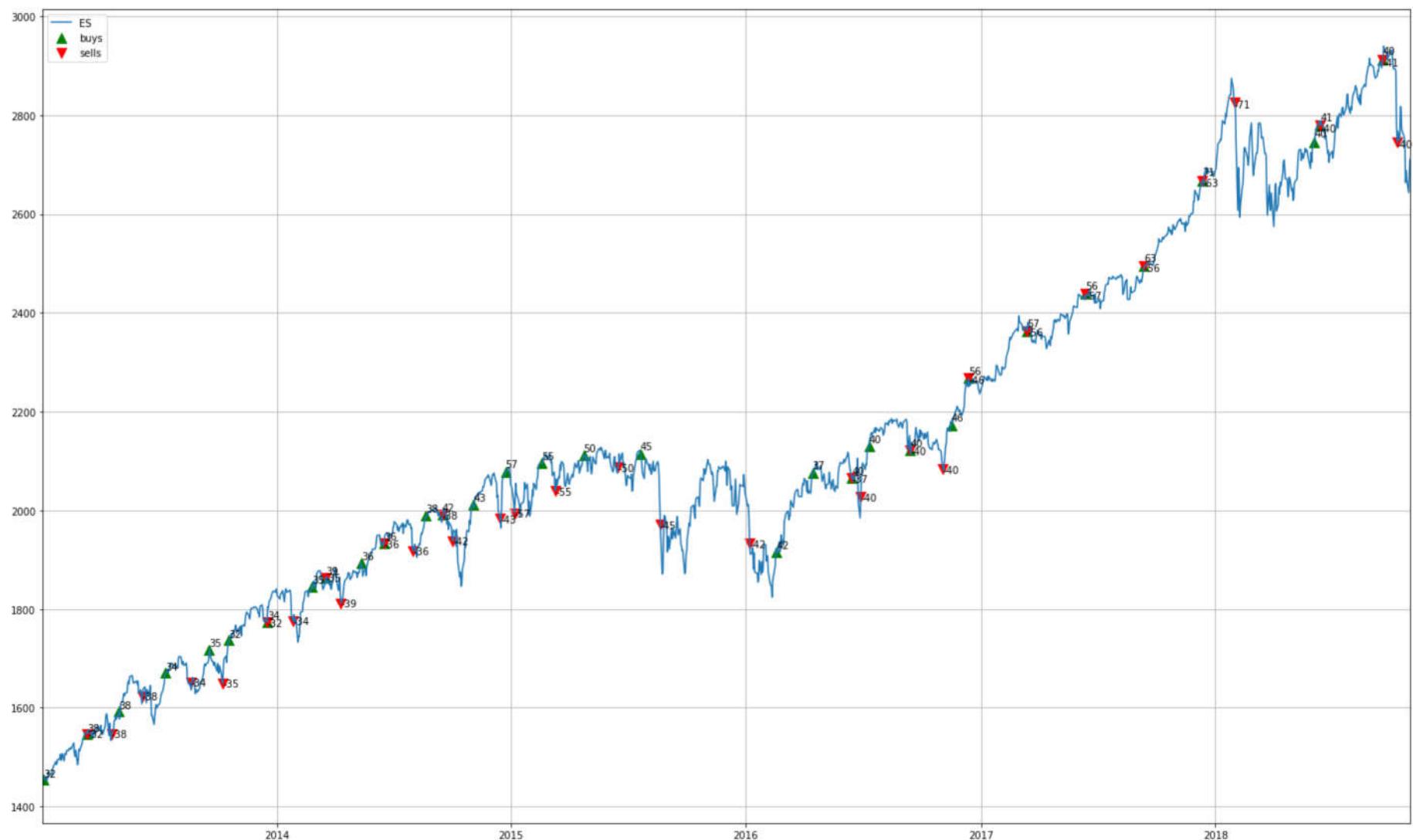
```
In [10]: from utils import future, continuous_future, history
import matplotlib.pyplot as plt
%matplotlib inline

def his(root, field='price'):
    return history(
        assets=[continuous_future(root,
                                  offset=0,
                                  adjustment=None,
                                  roll_style='volume')],
        end_dt=results.index[-1],
        bar_count=len(results),
        frequency='1d',
        field=field,
        data_frequency='daily'
    )
```

```
In [11]: h = his(root)
h.columns=[root]

transactions['root_symbol'] = transactions['symbol'].apply(lambda x: x.root_symbol)
selected = transactions[transactions['root_symbol'] == root]
selected.index = selected.index.normalize()
buys = selected[selected['amount'] > 0]
sells = selected[selected['amount'] < 0]

plt.figure(figsize=(20,12))
plt.plot(h, label=root)
plt.scatter(buys.index, h.loc[buys.index], label='buys', color='green', s=100, marker="^")
plt.scatter(sells.index, h.loc[sells.index], label='sells', color='red', s=100, marker="v")
for i, txt in enumerate(buys['amount'].values):
    plt.annotate(txt, (buys.index[i], h.loc[buys.index[i]][root]*1.004))
for i, txt in enumerate(sells['amount'].values):
    plt.annotate(txt, (sells.index[i], h.loc[sells.index[i]][root]*.996))
plt.xlim(h.index.min(), h.index.max())
plt.legend(loc='best')
plt.grid()
#plt.rcParams['font.size'] = 15
plt.tight_layout()
plt.show();
```



```
In [12]: chart = h.copy()
chart = chart.join(selected.amount)
chart.amount = chart.amount.fillna(0)
chart.ix[0, 'amount']=0
chart['cumulative'] = chart['amount'].cumsum(skipna=False)

chart['long'] = chart['cumulative'] > 0
chart['short'] = chart['cumulative'] < 0
chart['flat'] = chart['cumulative'] == 0
chart['long'] = chart['long'] * chart[root]
chart['short'] = chart['short'] * chart[root]
chart['flat'] = chart['flat'] * chart[root]
chart['slow_ma'] = chart[root].rolling(100).mean()
chart['fast_ma'] = chart[root].rolling(50).mean()
chart = chart[['long', 'short', 'flat', 'slow_ma', 'fast_ma']].applymap(lambda x: x if x != 0 else np.nan)

chart['long'].plot(figsize=(20,12), legend=True, color='green')
chart['short'].plot(legend=True, color='red')
chart['flat'].plot(legend=True, color='black')
chart['slow_ma'].plot(legend=True, color='75', alpha=0.5)
chart['fast_ma'].plot(legend=True, color='85', alpha=0.5)
plt.grid();
```



```
In [13]: import plotly
import plotly.offline as py
import plotly.graph_objs as go

plotly.offline.init_notebook_mode(connected=True)

full_h = his(root)
full_h.columns = ['close']
for field in ['open', 'high', 'low',]:
    full_h[field] = his(root, field)
```

```
In [14]: exclude_rolls = False
if exclude_rolls:
    intersection = buys.index.intersection(sells.index)
    buys = buys.drop(intersection)
    sells = sells.drop(intersection)
```

```
In [15]: trace1 = go.Candlestick(x=full_h.index,
                               open=full_h.open,
                               high=full_h.high,
                               low=full_h.low,
                               close=full_h.close,
                               name=root,
                               hoverinfo='none',
                               )

params = {
    'mode': 'markers',
    'hoverinfo': 'text',
}
trace2 = go.Scatter(
    x=buys.index,
    y=buys['price'],
    name='Buys',
    text=list(buys['amount']),
    textposition='middle left',
    marker=dict(size=8,
                color='rgba(0, 0, 128, .9)'),
    **params,
)
trace3 = go.Scatter(
    x=sells.index,
    y=sells['price'],
    name='Sells',
    text=list(sells['amount']),
    textposition='middle right',
    marker=dict(size=8,
                color='rgba(255, 255, 0, .9)'),
    **params
)

layout = go.Layout(
    xaxis = dict(
        rangeslider = dict(
            visible = False
        )
    )
)
data = [trace1, trace2, trace3]
fig = go.Figure(data=data, layout=layout)
```

```
py.iplot(fig, filename='candlestick_chart')
```



[Export to plot.ly »](#)

```
In [16]: transactions[transactions['root_symbol']==root]
```

Out[16]:

	amount	commission	dt	order_id	price	sid	symbol	txn_dollars	root_symbol
2013-01-03 21:00:00+00:00	32	None	2013-01-03 21:00:00+00:00	3c53de8401a3422b9db20c34f3f6a121	1456.00	Future(9476 [ESH13])	Future(9476 [ESH13])	-2329600.0	ES
2013-03-12 20:00:00+00:00	-32	None	2013-03-12 20:00:00+00:00	71194e8377054e8d871cf847764494fb	1556.75	Future(9476 [ESH13])	Future(9476 [ESH13])	2490800.0	ES
2013-03-12 20:00:00+00:00	38	None	2013-03-12 20:00:00+00:00	7808d1a2f3814631a07890d9d96fa4ce	1551.50	Future(9597 [ESM13])	Future(9597 [ESM13])	-2947850.0	ES
2013-04-19 20:00:00+00:00	-38	None	2013-04-19 20:00:00+00:00	6f37145da82e47ceb191bcfa57e389e2	1537.00	Future(9597 [ESM13])	Future(9597 [ESM13])	2920300.0	ES
2013-04-30 20:00:00+00:00	38	None	2013-04-30 20:00:00+00:00	2ba63f8eea6e4e0f8e9adbcc7b746aa	1588.50	Future(9597 [ESM13])	Future(9597 [ESM13])	-3018150.0	ES
2013-06-06 20:00:00+00:00	-38	None	2013-06-06 20:00:00+00:00	5d743ef31a0b4e10b09a83f9c51404e7	1608.50	Future(9597 [ESM13])	Future(9597 [ESM13])	3056150.0	ES
2013-07-12 20:00:00+00:00	34	None	2013-07-12 20:00:00+00:00	9ee8f68ffe014392856ae964fbfdca70	1669.00	Future(9706 [ESU13])	Future(9706 [ESU13])	-2837300.0	ES
2013-08-20 20:00:00+00:00	-34	None	2013-08-20 20:00:00+00:00	d684ecc11ec24046ba1d037dbad2b6db	1644.25	Future(9706 [ESU13])	Future(9706 [ESU13])	2795225.0	ES
2013-09-18 20:00:00+00:00	35	None	2013-09-18 20:00:00+00:00	dd46f501c5e04da19f0560a56c4d5a24	1699.25	Future(9809 [ESZ13])	Future(9809 [ESZ13])	-2973687.5	ES
2013-10-09 20:00:00+00:00	-35	None	2013-10-09 20:00:00+00:00	e79ea4e3d12e4ef1a283794b86f913a0	1648.00	Future(9809 [ESZ13])	Future(9809 [ESZ13])	2884000.0	ES
2013-10-18 20:00:00+00:00	32	None	2013-10-18 20:00:00+00:00	550c9d7799a34ac1a922381963264797	1727.50	Future(9809 [ESZ13])	Future(9809 [ESZ13])	-2764000.0	ES
2013-12-17 21:00:00+00:00	34	None	2013-12-17 21:00:00+00:00	ef4bc6e546a5445591888fec74bfc80c	1778.25	Future(10191 [ESH14])	Future(10191 [ESH14])	-3023025.0	ES
2013-12-17 21:00:00+00:00	-32	None	2013-12-17 21:00:00+00:00	58c2b41535f34ebbe0c03454571269f	1784.75	Future(9809 [ESZ13])	Future(9809 [ESZ13])	2855600.0	ES
2014-01-27 21:00:00+00:00	-34	None	2014-01-27 21:00:00+00:00	64dbf206043e4ccf9a5ff47cacdb0369	1781.75	Future(10191 [ESH14])	Future(10191 [ESH14])	3028975.0	ES

	amount	commission	dt	order_id	price	sid	symbol	txn_dollars	root_
2014-02-25 21:00:00+00:00	35	None	2014-02-25 21:00:00+00:00	8c54b3d7e5d4411cae825d7f7622737b	1844.75	Future(10191 [ESH14])	Future(10191 [ESH14])	-3228312.5	ES
2014-03-18 20:00:00+00:00	39	None	2014-03-18 20:00:00+00:00	923630c8f6114b558089cb17aca0977f	1851.75	Future(10989 [ESM14])	Future(10989 [ESM14])	-3610912.5	ES
2014-03-18 20:00:00+00:00	-35	None	2014-03-18 20:00:00+00:00	4ca259ceee4343f79d11c833b687494a	1858.75	Future(10191 [ESH14])	Future(10191 [ESH14])	3252812.5	ES
2014-04-11 20:00:00+00:00	-39	None	2014-04-11 20:00:00+00:00	746b65aebd1149e39115013127308c81	1829.50	Future(10989 [ESM14])	Future(10989 [ESM14])	3567525.0	ES
2014-05-13 20:00:00+00:00	36	None	2014-05-13 20:00:00+00:00	93b73e5b762341e5b8ed5dd665b34456	1893.50	Future(10989 [ESM14])	Future(10989 [ESM14])	-3408300.0	ES
2014-06-17 20:00:00+00:00	36	None	2014-06-17 20:00:00+00:00	d45a2d1471714e6c94fc232bf14d3dc1	1929.00	Future(11783 [ESU14])	Future(11783 [ESU14])	-3472200.0	ES
2014-06-17 20:00:00+00:00	-36	None	2014-06-17 20:00:00+00:00	4420adab1be949f9a169abb534c81987	1936.50	Future(10989 [ESM14])	Future(10989 [ESM14])	3485700.0	ES
2014-08-01 20:00:00+00:00	-36	None	2014-08-01 20:00:00+00:00	2ae89b5a52204ec2b4ea4d8c98f14c03	1926.00	Future(11783 [ESU14])	Future(11783 [ESU14])	3466800.0	ES
2014-08-21 20:00:00+00:00	38	None	2014-08-21 20:00:00+00:00	819d4b4ab314426a9cb2419e730e6824	1982.75	Future(11783 [ESU14])	Future(11783 [ESU14])	-3767225.0	ES
2014-09-16 20:00:00+00:00	-38	None	2014-09-16 20:00:00+00:00	af9f7113d95b4ec49489a0e3719dc524	1984.75	Future(11783 [ESU14])	Future(11783 [ESU14])	3771025.0	ES
2014-09-16 20:00:00+00:00	42	None	2014-09-16 20:00:00+00:00	14d7c017f9d34c2fb5023480be62e0fb	1976.75	Future(12649 [ESZ14])	Future(12649 [ESZ14])	-4151175.0	ES
2014-10-02 20:00:00+00:00	-42	None	2014-10-02 20:00:00+00:00	c65bad79bd0841bc49cc4bbba0958c	1940.75	Future(12649 [ESZ14])	Future(12649 [ESZ14])	4075575.0	ES
2014-11-03 21:00:00+00:00	43	None	2014-11-03 21:00:00+00:00	e87b36a26c39494795d8d0b0e0f3c070	2011.25	Future(12649 [ESZ14])	Future(12649 [ESZ14])	-4324187.5	ES
2014-12-15 21:00:00+00:00	-43	None	2014-12-15 21:00:00+00:00	cd27370535e8464a8e47a23d194d96a6	1998.75	Future(12649 [ESZ14])	Future(12649 [ESZ14])	4297312.5	ES
2014-12-23 21:00:00+00:00	57	None	2014-12-23 21:00:00+00:00	f7fc602c66244f72b8fe747cbfb99c6f	2073.00	Future(13471 [ESH15])	Future(13471 [ESH15])	-5908050.0	ES

	amount	commission	dt	order_id	price	sid	symbol	txn_dollars	root_
2015-01-06 21:00:00+00:00	-57	None	2015-01-06 21:00:00+00:00	3d0b2af21a974ceba30496a7ce049710	2019.00	Future(13471 [ESH15])	Future(13471 [ESH15])	5754150.0	ES
...	...	...	...	...	...	...	...	...	...
2015-07-21 20:00:00+00:00	45	None	2015-07-21 20:00:00+00:00	917c746ec7d64315b83cd5d9bc00b63e	2121.25	Future(15086 [ESU15])	Future(15086 [ESU15])	-4772812.5	ES
2015-08-21 20:00:00+00:00	-45	None	2015-08-21 20:00:00+00:00	6f5e0c7fe2854897beb91903f0eba394	2026.25	Future(15086 [ESU15])	Future(15086 [ESU15])	4559062.5	ES
2016-01-07 21:00:00+00:00	-42	None	2016-01-07 21:00:00+00:00	4dbad8c50211491395e13e2f602d677a	1987.75	Future(16721 [ESH16])	Future(16721 [ESH16])	4174275.0	ES
2016-02-18 21:00:00+00:00	42	None	2016-02-18 21:00:00+00:00	085e646cee9b49d4b7f478fc3e24fe4e	1922.75	Future(16721 [ESH16])	Future(16721 [ESH16])	-4037775.0	ES
2016-04-14 20:00:00+00:00	37	None	2016-04-14 20:00:00+00:00	f427793ebcc3428285125abab7e88263	2076.25	Future(17483 [ESM16])	Future(17483 [ESM16])	-3841062.5	ES
2016-06-14 20:00:00+00:00	40	None	2016-06-14 20:00:00+00:00	56ca9b4016b740ca84dc6f23b4cbea0b	2067.25	Future(18242 [ESU16])	Future(18242 [ESU16])	-4134500.0	ES
2016-06-14 20:00:00+00:00	-37	None	2016-06-14 20:00:00+00:00	6f993c3ef5d042abb8bebc9500bb9c91	2077.00	Future(17483 [ESM16])	Future(17483 [ESM16])	3842450.0	ES
2016-06-28 20:00:00+00:00	-40	None	2016-06-28 20:00:00+00:00	ab184bd0b6ce4e0987130f010f72c23b	1982.50	Future(18242 [ESU16])	Future(18242 [ESU16])	3965000.0	ES
2016-07-11 20:00:00+00:00	40	None	2016-07-11 20:00:00+00:00	f295e265a0954aa182c183c443ee0e02	2120.25	Future(18242 [ESU16])	Future(18242 [ESU16])	-4240500.0	ES
2016-09-13 20:00:00+00:00	-40	None	2016-09-13 20:00:00+00:00	d207ff2119ce46b2bb5f2cbd21eb734d	2156.25	Future(18242 [ESU16])	Future(18242 [ESU16])	4312500.0	ES
2016-09-13 20:00:00+00:00	40	None	2016-09-13 20:00:00+00:00	017189c7210d42f9a18438a659deae85	2150.50	Future(19020 [ESZ16])	Future(19020 [ESZ16])	-4301000.0	ES
2016-11-03 20:00:00+00:00	-40	None	2016-11-03 20:00:00+00:00	538768518a7a4d4c968f2364b45b7fd	2088.25	Future(19020 [ESZ16])	Future(19020 [ESZ16])	4176500.0	ES
2016-11-16 21:00:00+00:00	46	None	2016-11-16 21:00:00+00:00	cbe9b565e5714581997c1c4535cc149c	2179.00	Future(19020 [ESZ16])	Future(19020 [ESZ16])	-5011700.0	ES

	amount	commission	dt	order_id	price	sid	symbol	txn_dollars	root_
2016-12-13 21:00:00+00:00	-46	None	2016-12-13 21:00:00+00:00	c882760fe20549b8b25c402e5fafdc49	2256.00	Future(19020 [ESZ16])	Future(19020 [ESZ16])	5188800.0	ES
2016-12-13 21:00:00+00:00	56	None	2016-12-13 21:00:00+00:00	a669f3c0a4024e0d97f038bf1d4fc81f	2250.25	Future(19763 [ESH17])	Future(19763 [ESH17])	-6300700.0	ES
2017-03-14 20:00:00+00:00	57	None	2017-03-14 20:00:00+00:00	77784014534c4bfc8a7787e58bd45d87	2370.75	Future(20450 [ESM17])	Future(20450 [ESM17])	-6756637.5	ES
2017-03-14 20:00:00+00:00	-56	None	2017-03-14 20:00:00+00:00	626ad62f146d48e986aa45fb72d24376	2374.00	Future(19763 [ESH17])	Future(19763 [ESH17])	6647200.0	ES
2017-06-13 20:00:00+00:00	-57	None	2017-06-13 20:00:00+00:00	8055499c949446ec9e565d047c4f5181	2428.75	Future(20450 [ESM17])	Future(20450 [ESM17])	6921937.5	ES
2017-06-13 20:00:00+00:00	56	None	2017-06-13 20:00:00+00:00	f3126102b2a74f6a9a4e020830884bc1	2426.50	Future(21170 [ESU17])	Future(21170 [ESU17])	-6794200.0	ES
2017-09-12 20:00:00+00:00	63	None	2017-09-12 20:00:00+00:00	03f5d188abd2469392f20cec5ec4447e	2486.50	Future(25043 [ESZ17])	Future(25043 [ESZ17])	-7832475.0	ES
2017-09-12 20:00:00+00:00	-56	None	2017-09-12 20:00:00+00:00	7e3517f4c72f4db19079156e9bbb4204	2488.25	Future(21170 [ESU17])	Future(21170 [ESU17])	6967100.0	ES
2017-12-12 21:00:00+00:00	-63	None	2017-12-12 21:00:00+00:00	01d179ee211344ffa8639f5dc8b10167	2662.75	Future(25043 [ESZ17])	Future(25043 [ESZ17])	8387662.5	ES
2017-12-12 21:00:00+00:00	71	None	2017-12-12 21:00:00+00:00	05827ff3225c47cf9ef855710c9faac4	2666.00	Future(25711 [ESH18])	Future(25711 [ESH18])	-9464300.0	ES
2018-01-31 21:00:00+00:00	-71	None	2018-01-31 21:00:00+00:00	7acf1f1d357947cbb1ba801fdf9f55a5	2823.25	Future(25711 [ESH18])	Future(25711 [ESH18])	10022537.5	ES
2018-06-04 20:00:00+00:00	40	None	2018-06-04 20:00:00+00:00	44c3d3dfb85746129b5c48af9093d4e9	2731.00	Future(26353 [ESM18])	Future(26353 [ESM18])	-5462000.0	ES
2018-06-13 20:00:00+00:00	-40	None	2018-06-13 20:00:00+00:00	54dda966008949b492971f10bba72c0c	2788.00	Future(26353 [ESM18])	Future(26353 [ESM18])	5576000.0	ES
2018-06-13 20:00:00+00:00	41	None	2018-06-13 20:00:00+00:00	d6ba379dee7b4b92a27933f59d274671	2792.00	Future(27065 [ESU18])	Future(27065 [ESU18])	-5723600.0	ES
2018-09-18 20:00:00+00:00	40	None	2018-09-18 20:00:00+00:00	1285359ec85c49cb8d0018081413adf0	2895.50	Future(27806 [ESZ18])	Future(27806 [ESZ18])	-5791000.0	ES

	amount	commission	dt		order_id	price	sid	symbol	txn_dollars	root_
2018-09-18 20:00:00+00:00	-41	None	2018-09-18 20:00:00+00:00	7e335765c9e44be7a3de6fd8c387dc12	2890.50	Future(27065 [ESU18])	Future(27065 [ESU18])		5925525.0	ES
2018-10-11 20:00:00+00:00	-40	None	2018-10-11 20:00:00+00:00	7344da744ab24425ae5466bc0af5dfb4	2776.50	Future(27806 [ESZ18])	Future(27806 [ESZ18])		5553000.0	ES

64 rows × 9 columns

