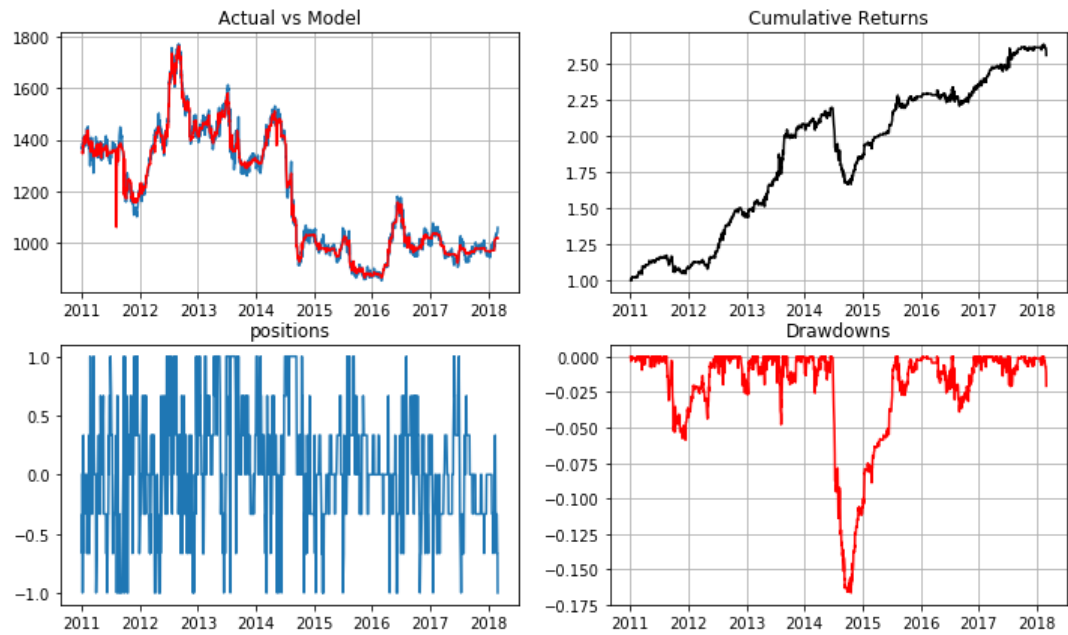


S Performance



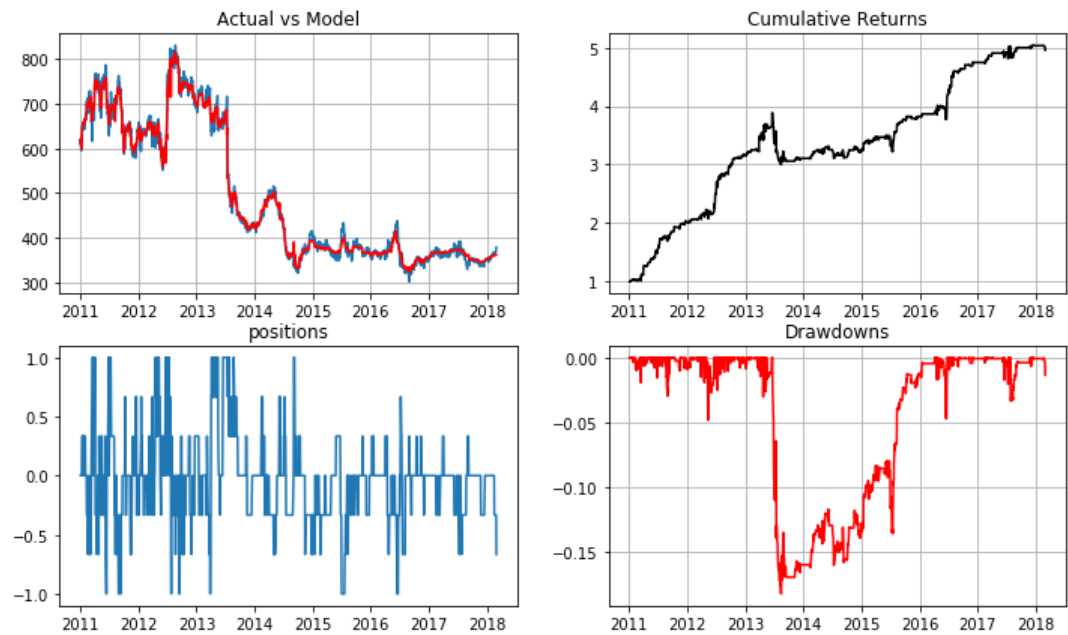
S backtest

month	1	2	3	4	5	6	7	8	9	10	11	12	Annual
year													
2011	2.0	3.7	2.4	4.6	-0.0	0.5	2.1	-5.3	-4.1	1.3	-0.9	2.1	8.2
2012	3.3	0.1	1.5	-5.9	7.3	3.2	9.6	4.9	2.9	4.2	0.1	-2.3	29.1
2013	2.9	2.7	-0.2	2.6	5.3	2.1	6.9	9.3	-0.1	0.3	3.0	0.6	35.5
2014	0.4	0.6	0.5	2.2	-0.2	-0.5	-12.8	-7.1	-4.7	2.8	6.4	1.5	-10.9
2015	4.4	-1.5	4.1	0.8	0.7	2.5	6.2	0.7	-0.3	2.6	-0.3	0.2	20.1
2016	0.8	0.1	-0.4	-0.8	1.3	-2.4	3.1	-4.6	1.3	0.9	3.3	1.1	3.6
2017	1.6	0.9	2.5	0.4	-1.1	2.9	0.5	1.5	1.2	-0.3	0.3	0.0	10.3
2018	-0.5	-0.3	-1.3	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	-2.1

S tearsheet

	cum_ret	Ann_ret	Ann_sd	sharpe	max_draw
date					
2018-03-01	2.557404	0.130085	0.072149	1.387192	-0.166344

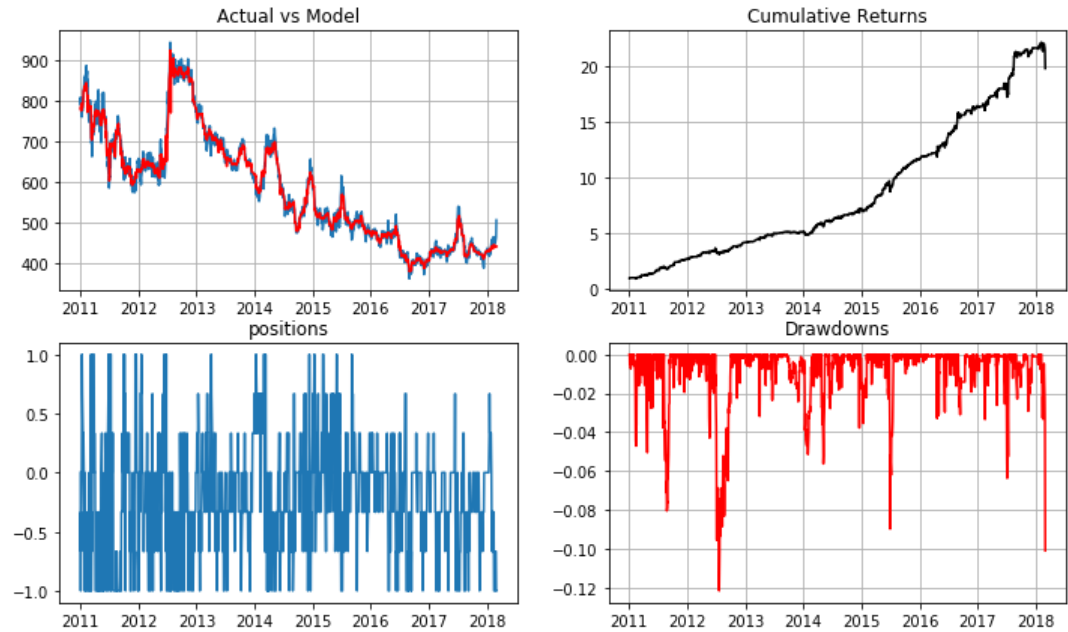
C Performance



C backtest													
month	1	2	3	4	5	6	7	8	9	10	11	12	Annual
year													
2011	3.4	-0.9	12.6	12.1	6.4	10.5	9.8	-0.2	8.0	3.9	3.4	1.2	70.3
2012	2.0	0.2	4.1	3.7	-3.8	15.0	12.5	1.2	4.9	3.4	0.3	1.6	45.2
2013	1.2	1.3	4.7	6.4	0.2	-4.2	-11.3	0.9	-2.6	0.0	1.7	-0.2	-2.0
2014	0.0	2.1	2.0	-1.4	3.3	-1.3	-2.3	0.2	-2.0	3.8	0.9	-0.5	4.8
2015	4.3	-0.7	3.0	-0.3	-0.4	-2.2	5.0	4.4	1.6	1.3	-0.8	0.7	15.9
2016	1.1	0.0	0.0	1.6	1.7	6.8	5.0	1.4	1.6	1.4	0.4	0.5	21.7
2017	0.0	1.1	2.0	0.2	0.0	0.2	-1.7	3.2	0.2	0.0	0.0	0.7	5.9
2018	0.0	-0.7	-0.8	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	-1.5

C tearsheet					
	cum_ret	Ann_ret	Ann_sd	sharpe	max_draw
date					
2018-03-01	4.955486	0.187617	0.069932	2.25386	-0.181838

W Performance

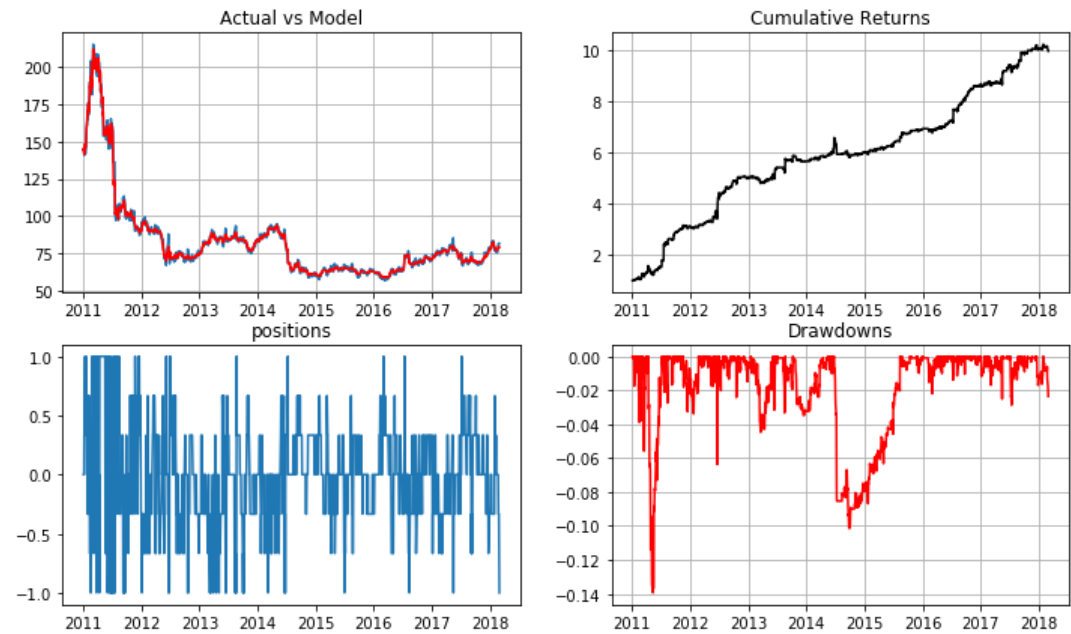


W backtest													
month	1	2	3	4	5	6	7	8	9	10	11	12	\
year													
2011	4.6	2.9	16.2	5.6	7.1	19.8	13.4	-9.1	16.0	13.4	5.9	3.2	
2012	7.4	1.1	9.1	1.6	4.0	5.0	-6.3	2.7	5.0	6.6	2.5	5.9	
2013	1.2	2.2	5.2	1.2	4.4	3.6	0.1	1.8	0.8	-0.8	-1.9	2.3	
2014	-5.3	6.1	10.6	-0.1	7.0	0.1	4.2	0.2	3.2	1.6	2.0	4.0	
2015	-0.8	5.7	9.1	2.7	6.0	-3.0	13.2	4.3	4.4	2.8	3.1	1.0	
2016	2.0	1.5	0.9	1.4	5.7	5.6	2.6	10.8	-1.5	2.6	1.5	0.9	
2017	0.2	2.1	3.0	1.0	2.9	2.2	4.2	9.8	-0.2	1.7	-1.0	1.7	
2018	1.5	-6.3	-4.1	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	

month	Annual
year	
2011	99.2
2012	44.6
2013	20.0
2014	33.4
2015	48.6
2016	34.1
2017	27.5
2018	-8.8

W tearsheet					
	cum_ret	Ann_ret	Ann_sd	sharpe	max_draw
date					
2018-03-01	19.783773	0.339631	0.15003	2.063793	-0.121719

CT Performance



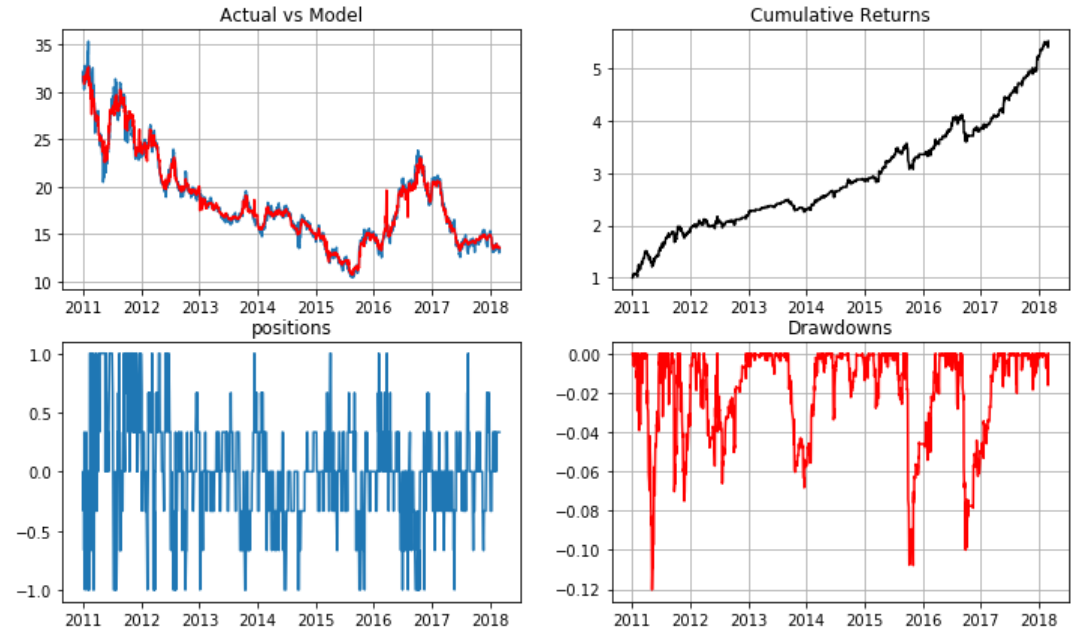
CT backtest

month	1	2	3	4	5	6	7	8	9	10	11	12	Annual
year													
2011	6.1	6.3	16.0	0.7	6.1	7.9	47.4	6.5	9.3	3.9	4.1	-0.3	114.0
2012	-0.9	2.7	1.3	3.6	4.7	23.4	0.5	2.9	6.3	2.9	0.5	-0.3	47.7
2013	-0.0	-0.9	-3.1	1.6	0.7	8.4	0.6	5.1	-0.8	1.4	-1.1	-0.1	11.7
2014	1.6	0.9	0.5	0.1	2.0	8.5	-8.8	0.9	-3.0	1.8	0.5	1.0	6.0
2015	0.4	0.7	1.3	-0.9	2.5	-0.4	3.5	4.4	-0.1	1.6	0.8	0.1	14.1
2016	0.2	-1.6	1.6	0.8	2.0	2.2	5.4	2.4	3.9	3.8	1.2	0.5	22.3
2017	0.4	0.8	-0.4	0.3	5.0	2.3	-0.9	3.0	2.7	1.2	0.7	-0.3	14.8
2018	1.3	-1.8	-0.1	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	-0.6

CT tearsheet

	cum_ret	Ann_ret	Ann_sd	sharpe	max_draw
date					
2018-03-01	9.963381	0.259553	0.084366	2.720913	-0.13943

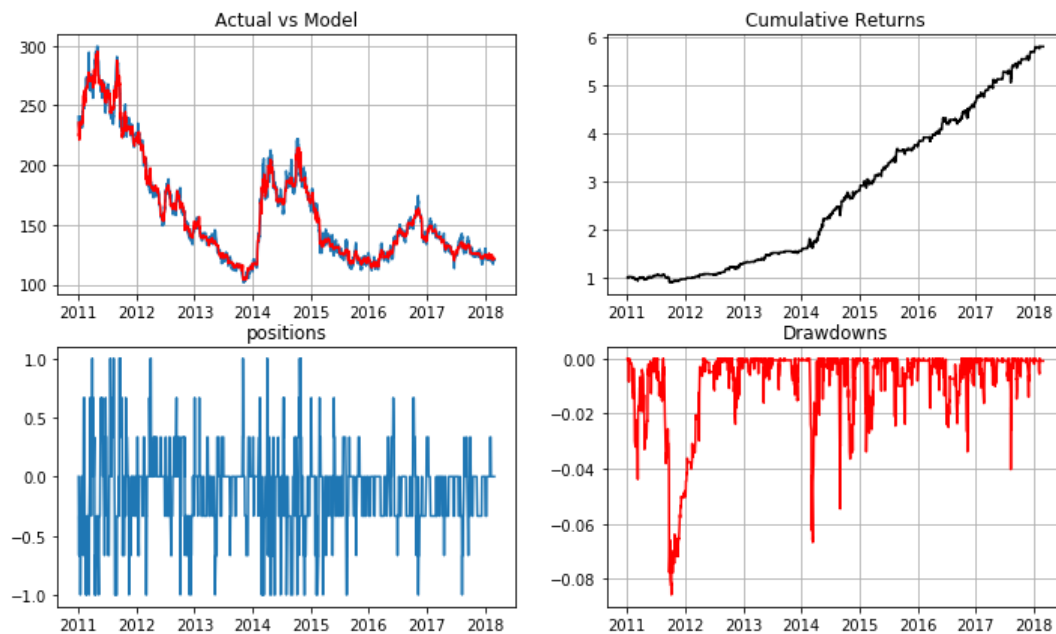
SB Performance



SB backtest													
month	1	2	3	4	5	6	7	8	9	10	11	12	Annual
year													
2011	6.0	17.8	17.3	-13.8	5.8	10.1	10.9	5.9	-2.7	8.3	-5.9	3.0	62.6
2012	7.6	2.7	1.8	-6.1	-0.0	5.0	-3.6	3.3	0.1	1.5	1.6	2.0	15.8
2013	4.1	0.8	1.7	0.7	0.3	1.8	1.6	1.1	-2.6	-4.7	1.8	-1.8	4.8
2014	3.6	4.3	1.0	1.8	2.9	-0.2	2.4	1.5	3.4	0.5	1.3	-0.5	21.8
2015	1.6	0.6	-2.6	8.4	3.4	3.3	3.9	-0.4	-1.1	-7.7	5.1	1.5	16.0
2016	-0.2	3.4	3.0	2.1	2.6	5.5	3.1	0.0	-9.2	-0.2	3.6	0.1	13.8
2017	1.9	1.1	2.5	2.8	4.9	1.8	2.4	2.8	2.2	2.5	-0.1	5.8	30.6
2018	3.6	0.9	0.8	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	5.3

SB tearsheet					
	cum_ret	Ann_ret	Ann_sd	sharpe	max_draw
date					
2018-03-01	5.509075	0.197834	0.094384	1.778209	-0.12031

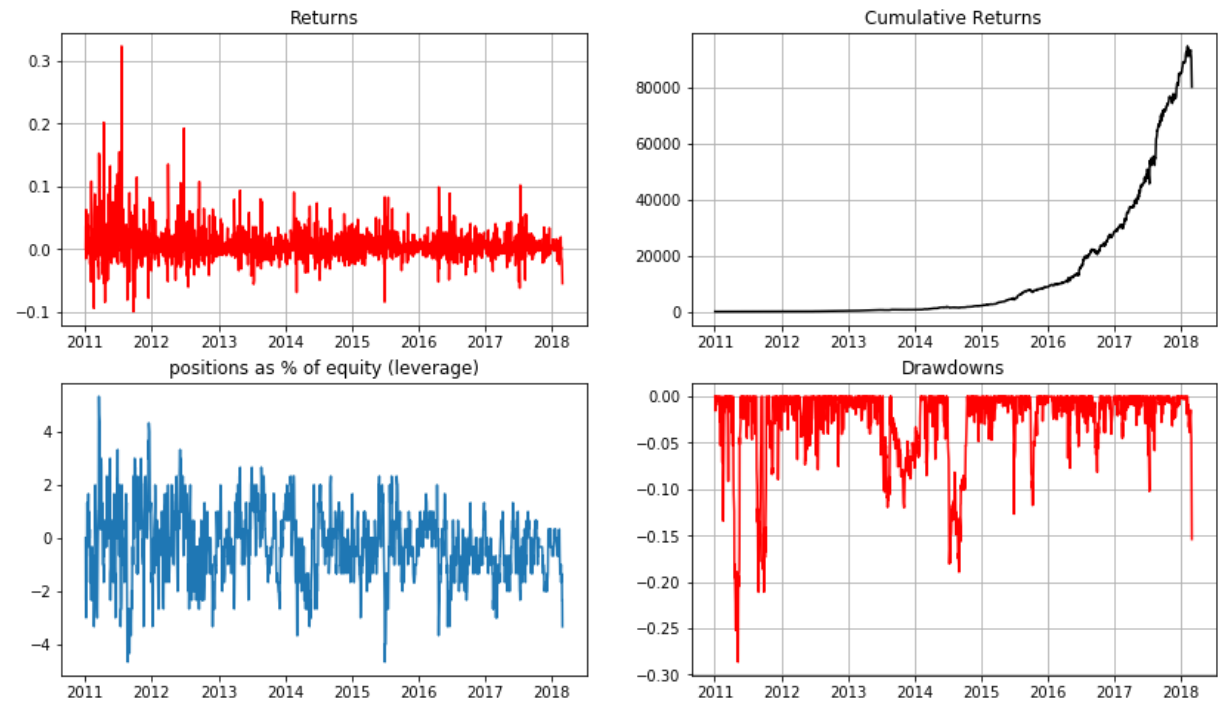
KC Performance



KC backtest													
month	1	2	3	4	5	6	7	8	9	10	11	12	Annual
year													
2011	1.1	-4.9	3.7	-4.2	5.6	2.6	0.0	-4.5	-9.9	2.5	2.6	1.7	-3.7
2012	2.6	1.1	3.9	3.5	-0.3	-1.8	3.3	2.4	5.6	2.5	2.3	3.2	28.3
2013	3.0	0.6	2.8	2.4	4.2	2.8	1.0	0.7	1.4	-0.8	-1.1	2.2	19.2
2014	3.4	8.1	1.2	13.2	10.3	2.7	5.0	-0.6	10.9	-0.5	4.0	1.9	59.4
2015	6.5	-1.3	2.6	3.8	2.9	2.6	4.0	5.9	-0.9	1.1	0.4	0.6	28.2
2016	3.3	1.9	-0.2	2.7	1.5	3.2	1.8	-0.3	0.6	3.4	2.2	2.6	22.7
2017	3.1	1.2	2.3	2.6	0.3	2.9	0.1	2.6	0.9	1.3	0.5	2.2	20.0
2018	1.7	0.2	0.0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1.9

KC tearsheet					
	cum_ret	Ann_ret	Ann_sd	sharpe	max_draw
date					
2018-03-01	5.814998	0.203147	0.0763	2.269292	-0.085857

Portfolio Performance



Portfolio backtest												
month	1	2	3	4	5	6	7	8	9	10	11	12 \
year												
2011	23.2	24.9	68.2	5.0	31.0	51.4	83.5	-6.7	16.6	33.4	9.2	10.9
2012	22.0	8.0	21.7	0.4	12.0	49.9	15.9	17.4	24.8	21.1	7.3	10.2
2013	12.3	6.6	11.0	14.9	15.2	14.6	-1.2	18.9	-3.9	-4.6	2.4	2.9
2014	3.6	22.0	15.7	15.8	25.3	9.2	-12.3	-4.9	7.9	9.9	15.1	7.3
2015	16.3	3.6	17.4	14.6	15.1	2.9	35.8	19.3	3.6	1.8	8.3	4.2
2016	7.2	5.1	5.0	7.7	14.8	20.9	21.0	9.9	-3.2	12.0	12.2	5.6
2017	7.1	7.0	12.1	7.3	11.8	12.3	4.7	22.9	7.0	6.4	0.4	10.0
2018	7.8	-8.1	-5.5	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

month	Annual
year	
2011	350.5
2012	210.7
2013	89.1
2014	114.5
2015	142.8
2016	118.1
2017	109.0
2018	-5.8

PORTFOLIO TEARSHEET: 2011-Present BACKTEST					
	Ann_ret	Ann_sd	cum_ret	max_draw	sharpe
s	0.130085	0.072149	2.557404	-0.166344	1.387192
c	0.187617	0.069932	4.955486	-0.181838	2.253860
w	0.339631	0.150030	19.783773	-0.121719	2.063793
ct	0.259553	0.084366	9.963381	-0.139430	2.720913
sb	0.197834	0.094384	5.509075	-0.120310	1.778209
kc	0.203147	0.076300	5.814998	-0.085857	2.269292
Portfolio	1.968316	0.271103	80024.728262	-0.286411	7.149749

<matplotlib.figure.Figure at 0x256d9616668>

message sent
message sent

[NbConvertApp] Converting notebook Backtest_Report.ipynb to html
[NbConvertApp] Writing 506085 bytes to Backtest_Report.html

```
In [ ]: !jupyter nbconvert Backtest_Report.ipynb --to html
```