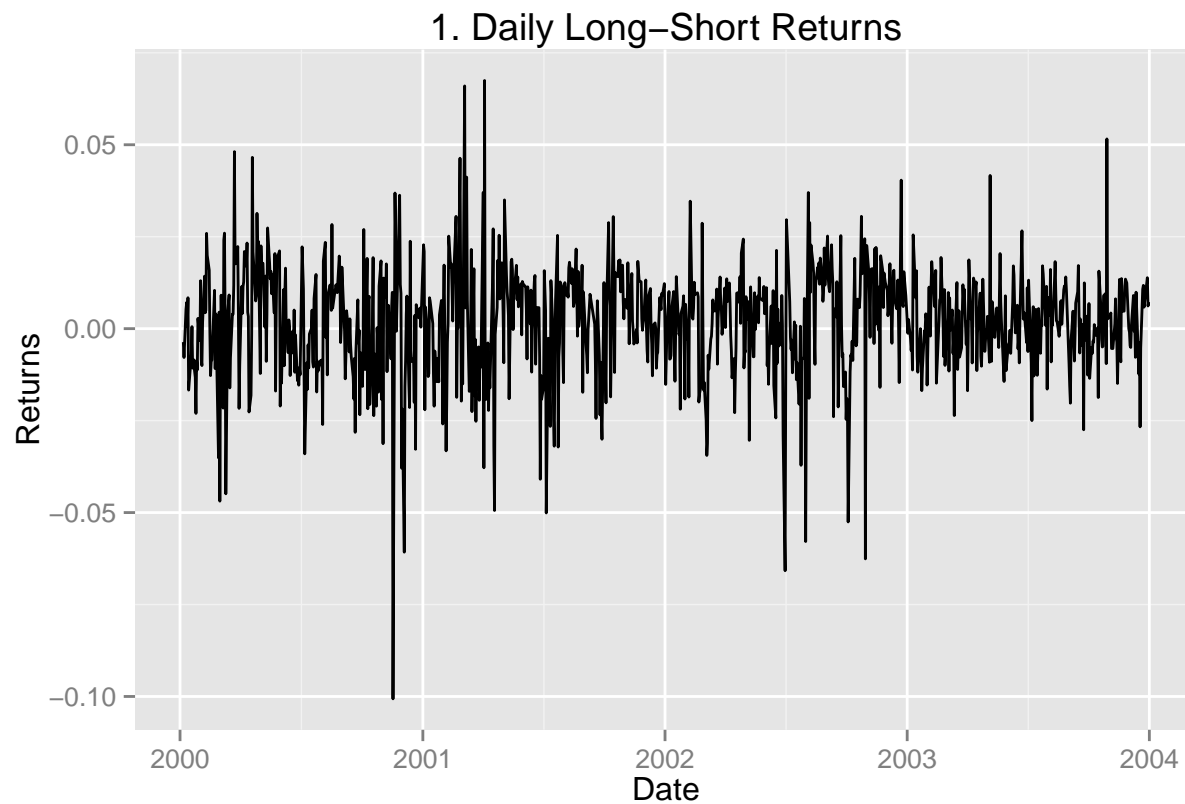# Solution Description - Part (3)
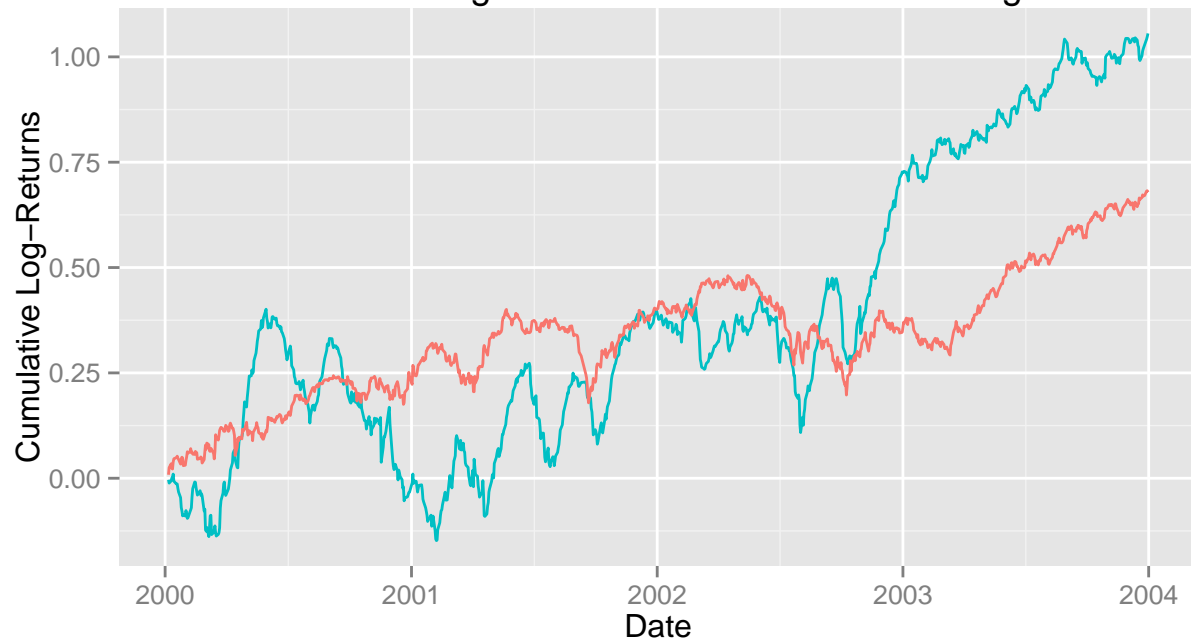
Team A - Mufan Li, Mengye Ren, Tian Xia

March 19, 2016

We first display the four time series plots.
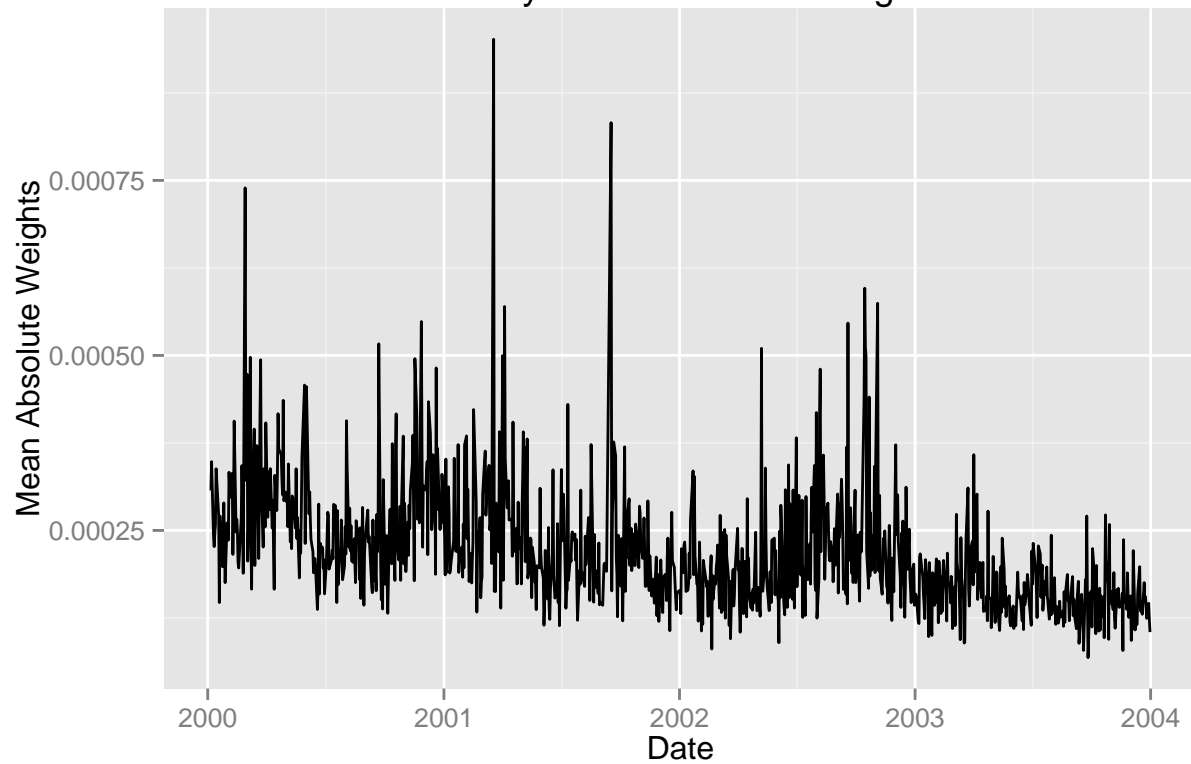

1. Daily Long–Short Returns

2. Cumulative Long−Short Returns − In Natural Logarithms

3. Daily Mean Absolute Weights

4. Daily Portfolio Direction
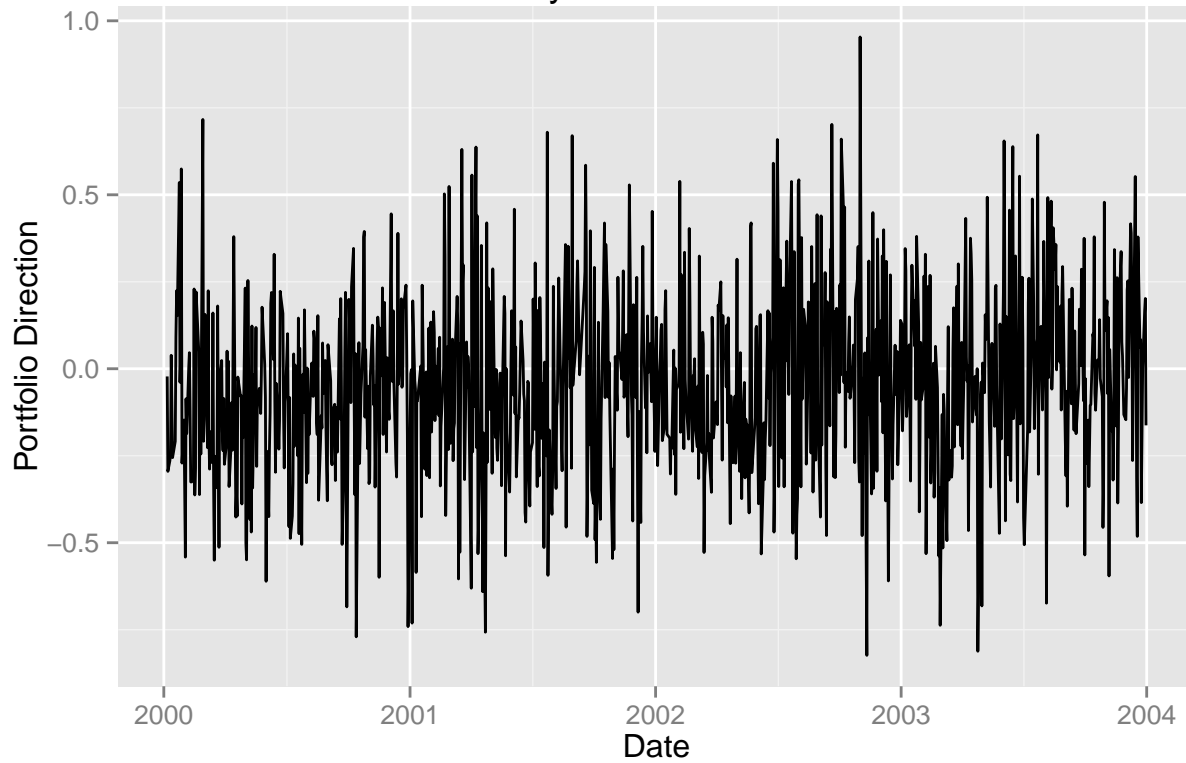
We can also look at the relevant statistics below.

	Names	Values
1	Average Daily Log Returns	0.0011
2	Standard Deviation of Daily Log Returns	0.0151
3	Annualized Sharpe Ratio	1.1099
4	Skewness	-0.7087
5	Kurtosis	4.3537
6	Maximum Drawdown - Number of Days	175.0000
7	Maximum Drawdown - Return	-0.4226
8	Correlation with Equal Weighted Returns	-0.0291

Table 1: Summary Statistics - Using In-Sample Data

This problem is clearly much more difficult as we can observe

We also observe the new weights in Table 4, when trained only with in-sample data.

	Parameter	Value
1	a1	-0.108091
2	a2	-1.925672
3	a3	3.148877
4	a4	-5.449307
5	a5	0.161162
6	a6	0.614187
7	a7	-0.911996
8	a8	0.219643
9	a9	-0.438990
10	a10	0.602813
11	a11	-0.490796
12	a12	0.137901

Table 2: Parameter Values - Using All In-Sample Data

	Names	Values
1	Average Daily Log Returns	-0.0008
2	Standard Deviation of Daily Log Returns	0.0178
3	Annualized Sharpe Ratio	-0.7375
4	Skewness	-1.3770
5	Kurtosis	7.6703
6	Maximum Drawdown - Number of Days	100.0000
7	Maximum Drawdown - Return	-0.2786
8	Correlation with Equal Weighted Returns	-0.1837

Table 3: Summary Statistics - Using Out-of-Sample Data

	Parameter	Value
1	a1	0.324638
2	a2	-2.017207
3	a3	1.842193
4	a4	-4.011164
5	a5	0.055814
6	a6	0.577678
7	a7	-0.594537
8	a8	0.680073
9	a9	-0.419413
10	a10	-0.112618
11	a11	0.442463
12	a12	-1.564723

Table 4: Parameter Values - Using 80% of In-Sample Data