

## 190Class9.2\_EventStudy

March 10, 2023

Issues in examining the results: -magnitude issue -selection bias issue -lucky event issue -possible model misspecification Portfolio sorting: -Sort stocks, funds, securities based on some attributes -Test of trading strategies -Test of the relation between two variables -Double sorts to do a horse race between two effects

```
[1]: #Import necessary packages for event study
import numpy as np
import pandas as pd
import datetime as dt
import matplotlib
import matplotlib.pyplot as plt
import scipy.stats as sst
from pandas_datareader import data as pdr
import yfinance as yf
yf.pdr_override()
```

```
[2]: tickers=['MSFT','^GSPC']

sec_data=pd.DataFrame()

for t in tickers:
    sec_data[t]=pdr.get_data_yahoo(t,start='1995-1-1')['Adj Close']
```

```
[*****100%*****] 1 of 1 completed
[*****100%*****] 1 of 1 completed
```

```
[3]: sec_returns=sec_data/sec_data.shift(1)-1
sec_returns=sec_returns.dropna()
sec_returns
```

```
[3]:
```

	MSFT	^GSPC
Date		
1995-01-04	0.007268	0.003485
1995-01-05	-0.016495	-0.000803
1995-01-06	0.016771	0.000739
1995-01-09	-0.006186	0.000326
1995-01-10	0.012448	0.001845
...	...	...

```

2023-03-03  0.016646  0.016148
2023-03-06  0.006189  0.000687
2023-03-07 -0.010589 -0.015327
2023-03-08 -0.001771  0.001415
2023-03-09 -0.005439 -0.018459

```

[7095 rows x 2 columns]

```

[4]: # 'exret' = excess return (msft-spy500), abnormal return
sec_returns['exret']=sec_returns['MSFT']-sec_returns['^GSPC']
sec_returns.head()

```

```

[4]:           MSFT      ^GSPC      exret
Date
1995-01-04  0.007268  0.003485  0.003783
1995-01-05 -0.016495 -0.000803 -0.015692
1995-01-06  0.016771  0.000739  0.016033
1995-01-09 -0.006186  0.000326 -0.006511
1995-01-10  0.012448  0.001845  0.010604

```

```

[5]: # Import excel file with MSFT returns
events=pd.read_excel('earningsdates-1-1.xlsx',index_col=0)
events

```

```

[5]:           Event
Date
2023-01-23         1
2022-10-25         1
2022-07-26         1
2022-04-26         1
2022-01-25         1
2021-10-26         1
2021-07-27         1
2021-04-27         1
2021-01-26         1
2020-10-27         1
2020-07-22         1
2020-04-29         1
2020-01-29         1
2019-10-23         1
2019-07-18         1
2019-04-24         1
2019-01-30         1
2018-10-24         1
2018-07-19         1
2018-04-26         1
2018-01-31         1

```

2017-10-26	1
2017-07-20	1
2017-04-27	1
2017-01-26	1
2016-10-26	1
2016-07-19	1
2016-04-21	1
2016-01-28	1
2015-10-22	1
2015-07-21	1
2015-04-23	1
2015-01-26	1
2014-10-23	1
2014-07-22	1
2014-04-24	1
2014-01-23	1
2013-10-24	1
2013-07-18	1
2013-04-18	1
2013-01-24	1
2012-10-18	1
2012-07-19	1
2012-04-19	1
2012-01-19	1
2011-10-20	1
2011-07-21	1
2011-04-28	1
2011-01-27	1

```
[6]: #Merge the two data frames to begin analysis
all=pd.merge(sec_returns,events,how='left',left_index=True,right_index=True)
#Days without an event return NaN
all
```

```
[6]:
```

	MSFT	^GSPC	exret	Event
Date				
1995-01-04	0.007268	0.003485	0.003783	NaN
1995-01-05	-0.016495	-0.000803	-0.015692	NaN
1995-01-06	0.016771	0.000739	0.016033	NaN
1995-01-09	-0.006186	0.000326	-0.006511	NaN
1995-01-10	0.012448	0.001845	0.010604	NaN
...	...	...	...	...
2023-03-03	0.016646	0.016148	0.000498	NaN
2023-03-06	0.006189	0.000687	0.005502	NaN
2023-03-07	-0.010589	-0.015327	0.004738	NaN
2023-03-08	-0.001771	0.001415	-0.003185	NaN
2023-03-09	-0.005439	-0.018459	0.013020	NaN

[7095 rows x 4 columns]

```
[7]: #Make a window of 5 days around each event (total 11 days around each
      ↪ announcement)
      window=5
```

```
[8]: events['edate']=events.index
```

```
[9]: events.head()
```

```
[9]:
```

	Event	edate
Date		
2023-01-23	1	2023-01-23
2022-10-25	1	2022-10-25
2022-07-26	1	2022-07-26
2022-04-26	1	2022-04-26
2022-01-25	1	2022-01-25

```
[10]: #Make an empty data frame, placeholder for event day returns
      port=pd.DataFrame()
```

```
[11]: #For each of the 48 event dates, get a window array of 11 values of exret
      #Event date 0 would be the average of day 0 for the 48 events
      for event in events['edate']:
          print(event)
          #identify date of event
          date_loc=all.index.get_loc(event)
          #get window around event
          date_loc1=date_loc-window
          date_loc2=date_loc+window+1
          #get exret window values from all dataframe
          temp=all['exret'][date_loc1:date_loc2]
          temp=temp.reset_index(drop=True)
          port=port.reset_index(drop=True)
          #concat adds the right data frame onto the left data frame
          port=pd.concat([port,temp], axis=1, ignore_index=True)
          print(date_loc)
          print(date_loc1)
          print(date_loc2)
          print(temp)
          print(port)
```

```
2023-01-23 00:00:00
7062
7057
7068
```

```

0    -0.000978
1     0.006712
2    -0.003327
3    -0.008816
4     0.016825
5    -0.002057
6    -0.001515
7    -0.005726
8     0.019706
9    -0.001850
10   -0.008993

```

Name: exret, dtype: float64

```

0
0    -0.000978
1     0.006712
2    -0.003327
3    -0.008816
4     0.016825
5    -0.002057
6    -0.001515
7    -0.005726
8     0.019706
9    -0.001850
10   -0.008993

```

2022-10-25 00:00:00

7002

6997

7008

```

0    -0.007344
1    -0.001798
2     0.006555
3     0.001556
4     0.009306
5    -0.002475
6    -0.069769
7    -0.013674
8     0.015594
9    -0.008402
10   -0.012958

```

Name: exret, dtype: float64

```

0      0      1
0  -0.000978 -0.007344
1   0.006712 -0.001798
2  -0.003327  0.006555
3  -0.008816  0.001556
4   0.016825  0.009306
5  -0.002057 -0.002475
6  -0.001515 -0.069769

```

```
7 -0.005726 -0.013674
8  0.019706  0.015594
9 -0.001850 -0.008402
10 -0.008993 -0.012958
```

2022-07-26 00:00:00

6938

6933

6944

```
0 -0.006861
1  0.004662
2 -0.000062
3 -0.007584
4 -0.007191
5 -0.015231
6  0.040696
7  0.016407
8  0.001457
9 -0.006901
10 -0.004812
```

Name: exret, dtype: float64

```
      0      1      2
0 -0.000978 -0.007344 -0.006861
1  0.006712 -0.001798  0.004662
2 -0.003327  0.006555 -0.000062
3 -0.008816  0.001556 -0.007584
4  0.016825  0.009306 -0.007191
5 -0.002057 -0.002475 -0.015231
6 -0.001515 -0.069769  0.040696
7 -0.005726 -0.013674  0.016407
8  0.019706  0.015594  0.001457
9 -0.001850 -0.008402 -0.006901
10 -0.008993 -0.012958 -0.004812
```

2022-04-26 00:00:00

6876

6871

6882

```
0  0.000982
1  0.004334
2 -0.004628
3  0.003596
4  0.018715
5 -0.009257
6  0.046011
7 -0.002114
8 -0.005528
9  0.019368
10 -0.014293
```

Name: exret, dtype: float64

	0	1	2	3
0	-0.000978	-0.007344	-0.006861	0.000982
1	0.006712	-0.001798	0.004662	0.004334
2	-0.003327	0.006555	-0.000062	-0.004628
3	-0.008816	0.001556	-0.007584	0.003596
4	0.016825	0.009306	-0.007191	0.018715
5	-0.002057	-0.002475	-0.015231	-0.009257
6	-0.001515	-0.069769	0.040696	0.046011
7	-0.005726	-0.013674	0.016407	-0.002114
8	0.019706	0.015594	0.001457	-0.005528
9	-0.001850	-0.008402	-0.006901	0.019368
10	-0.008993	-0.012958	-0.004812	-0.014293

2022-01-25 00:00:00

6813

6808

6819

0	-0.005951
1	0.011936
2	0.005334
3	0.000447
4	-0.001623
5	-0.014416
6	0.029990
7	0.015933
8	0.003734
9	-0.010062
10	-0.014002

Name: exret, dtype: float64

	0	1	2	3	4
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951
1	0.006712	-0.001798	0.004662	0.004334	0.011936
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334
3	-0.008816	0.001556	-0.007584	0.003596	0.000447
4	0.016825	0.009306	-0.007191	0.018715	-0.001623
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416
6	-0.001515	-0.069769	0.040696	0.046011	0.029990
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933
8	0.019706	0.015594	0.001457	-0.005528	0.003734
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002

2021-10-26 00:00:00

6751

6746

6757

0	-0.004334
1	-0.006324
2	0.007902
3	-0.004076

```

4    -0.008080
5     0.004606
6     0.047166
7    -0.006178
8     0.020465
9    -0.008585
10    0.007735

```

Name: exret, dtype: float64

	0	1	2	3	4	5
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735

2021-07-27 00:00:00

6687

6682

6693

```

0    -0.006824
1    -0.000795
2     0.014828
3     0.002191
4    -0.004523
5    -0.003971
6    -0.000931
7    -0.003228
8    -0.000144
9     0.001527
10   -0.000128

```

Name: exret, dtype: float64

	0	1	2	3	4	5	6
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128



2021-04-27 00:00:00

6624

6619

6630

0 0.004948  
1 -0.000323  
2 -0.003875  
3 0.004547  
4 -0.000251  
5 0.001821  
6 -0.027440  
7 -0.014816  
8 0.005888  
9 -0.004017  
10 -0.009481

Name: exret, dtype: float64

	0	1	2	3	4	5	6 \
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128

7

0 0.004948  
1 -0.000323  
2 -0.003875  
3 0.004547  
4 -0.000251  
5 0.001821  
6 -0.027440  
7 -0.014816  
8 0.005888  
9 -0.004017  
10 -0.009481

2021-01-26 00:00:00

6561

6556

6567

0 0.009686  
1 0.022564  
2 0.002492

```

3      0.007367
4      0.012228
5      0.013688
6      0.028131
7      0.016130
8     -0.009860
9      0.017101
10     -0.014482

```

Name: exret, dtype: float64

	0	1	2	3	4	5	6 \
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128

	7	8
0	0.004948	0.009686
1	-0.000323	0.022564
2	-0.003875	0.002492
3	0.004547	0.007367
4	-0.000251	0.012228
5	0.001821	0.013688
6	-0.027440	0.028131
7	-0.014816	0.016130
8	0.005888	-0.009860
9	-0.004017	0.017101
10	-0.009481	-0.014482

2020-10-27 00:00:00

6500

6495

6506

```

0      -0.002720
1       0.002894
2     -0.004800
3       0.002790
4     -0.009852
5       0.018115
6     -0.014278
7     -0.001882
8       0.001139
9     -0.013010

```

```

10      0.002465
Name: exret, dtype: float64
      0      1      2      3      4      5      6  \
0 -0.000978 -0.007344 -0.006861  0.000982 -0.005951 -0.004334 -0.006824
1  0.006712 -0.001798  0.004662  0.004334  0.011936 -0.006324 -0.000795
2 -0.003327  0.006555 -0.000062 -0.004628  0.005334  0.007902  0.014828
3 -0.008816  0.001556 -0.007584  0.003596  0.000447 -0.004076  0.002191
4  0.016825  0.009306 -0.007191  0.018715 -0.001623 -0.008080 -0.004523
5 -0.002057 -0.002475 -0.015231 -0.009257 -0.014416  0.004606 -0.003971
6 -0.001515 -0.069769  0.040696  0.046011  0.029990  0.047166 -0.000931
7 -0.005726 -0.013674  0.016407 -0.002114  0.015933 -0.006178 -0.003228
8  0.019706  0.015594  0.001457 -0.005528  0.003734  0.020465 -0.000144
9 -0.001850 -0.008402 -0.006901  0.019368 -0.010062 -0.008585  0.001527
10 -0.008993 -0.012958 -0.004812 -0.014293 -0.014002  0.007735 -0.000128

      7      8      9
0  0.004948  0.009686 -0.002720
1 -0.000323  0.022564  0.002894
2 -0.003875  0.002492 -0.004800
3  0.004547  0.007367  0.002790
4 -0.000251  0.012228 -0.009852
5  0.001821  0.013688  0.018115
6 -0.027440  0.028131 -0.014278
7 -0.014816  0.016130 -0.001882
8  0.005888 -0.009860  0.001139
9 -0.004017  0.017101 -0.013010
10 -0.009481 -0.014482  0.002465
2020-07-22 00:00:00
6432
6427
6438
0  -0.010570
1  -0.016398
2  -0.007949
3   0.034574
4  -0.015148
5   0.008624
6  -0.031175
7   0.000068
8   0.005273
9  -0.002504
10 -0.002330
Name: exret, dtype: float64
      0      1      2      3      4      5      6  \
0 -0.000978 -0.007344 -0.006861  0.000982 -0.005951 -0.004334 -0.006824
1  0.006712 -0.001798  0.004662  0.004334  0.011936 -0.006324 -0.000795
2 -0.003327  0.006555 -0.000062 -0.004628  0.005334  0.007902  0.014828
3 -0.008816  0.001556 -0.007584  0.003596  0.000447 -0.004076  0.002191

```

4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128

	7	8	9	10
0	0.004948	0.009686	-0.002720	-0.010570
1	-0.000323	0.022564	0.002894	-0.016398
2	-0.003875	0.002492	-0.004800	-0.007949
3	0.004547	0.007367	0.002790	0.034574
4	-0.000251	0.012228	-0.009852	-0.015148
5	0.001821	0.013688	0.018115	0.008624
6	-0.027440	0.028131	-0.014278	-0.031175
7	-0.014816	0.016130	-0.001882	0.000068
8	0.005888	-0.009860	0.001139	0.005273
9	-0.004017	0.017101	-0.013010	-0.002504
10	-0.009481	-0.014482	0.002465	-0.002330

2020-04-29 00:00:00

6374

6369

6380

0	0.011035
1	-0.011563
2	0.004341
3	-0.017579
4	-0.019118
5	0.018290
6	0.019245
7	0.002168
8	0.020210
9	0.001695
10	0.016827

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	10	11
0	0.004948	0.009686	-0.002720	-0.010570	0.011035
1	-0.000323	0.022564	0.002894	-0.016398	-0.011563
2	-0.003875	0.002492	-0.004800	-0.007949	0.004341
3	0.004547	0.007367	0.002790	0.034574	-0.017579
4	-0.000251	0.012228	-0.009852	-0.015148	-0.019118
5	0.001821	0.013688	0.018115	0.008624	0.018290
6	-0.027440	0.028131	-0.014278	-0.031175	0.019245
7	-0.014816	0.016130	-0.001882	0.000068	0.002168
8	0.005888	-0.009860	0.001139	0.005273	0.020210
9	-0.004017	0.017101	-0.013010	-0.002504	0.001695
10	-0.009481	-0.014482	0.002465	-0.002330	0.016827

2020-01-29 00:00:00

6311

6306

6317

0	-0.005094
1	0.005015
2	-0.001034
3	-0.000993
4	0.009543
5	0.016459
6	0.025073
7	0.002947
8	0.017124
9	0.017936
10	-0.012472

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	10	11	12
0	0.004948	0.009686	-0.002720	-0.010570	0.011035	-0.005094
1	-0.000323	0.022564	0.002894	-0.016398	-0.011563	0.005015
2	-0.003875	0.002492	-0.004800	-0.007949	0.004341	-0.001034
3	0.004547	0.007367	0.002790	0.034574	-0.017579	-0.000993
4	-0.000251	0.012228	-0.009852	-0.015148	-0.019118	0.009543

5	0.001821	0.013688	0.018115	0.008624	0.018290	0.016459
6	-0.027440	0.028131	-0.014278	-0.031175	0.019245	0.025073
7	-0.014816	0.016130	-0.001882	0.000068	0.002168	0.002947
8	0.005888	-0.009860	0.001139	0.005273	0.020210	0.017124
9	-0.004017	0.017101	-0.013010	-0.002504	0.001695	0.017936
10	-0.009481	-0.014482	0.002465	-0.002330	0.016827	-0.012472

2019-10-23 00:00:00

6245

6240

6251

0	-0.006194
1	-0.007890
2	-0.012402
3	0.000551
4	-0.011312
5	0.003533
6	0.017753
7	0.001572
8	0.019005
9	-0.008600
10	0.009209

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	10	11	12	13
0	0.004948	0.009686	-0.002720	-0.010570	0.011035	-0.005094	-0.006194
1	-0.000323	0.022564	0.002894	-0.016398	-0.011563	0.005015	-0.007890
2	-0.003875	0.002492	-0.004800	-0.007949	0.004341	-0.001034	-0.012402
3	0.004547	0.007367	0.002790	0.034574	-0.017579	-0.000993	0.000551
4	-0.000251	0.012228	-0.009852	-0.015148	-0.019118	0.009543	-0.011312
5	0.001821	0.013688	0.018115	0.008624	0.018290	0.016459	0.003533
6	-0.027440	0.028131	-0.014278	-0.031175	0.019245	0.025073	0.017753
7	-0.014816	0.016130	-0.001882	0.000068	0.002168	0.002947	0.001572
8	0.005888	-0.009860	0.001139	0.005273	0.020210	0.017124	0.019005
9	-0.004017	0.017101	-0.013010	-0.002504	0.001695	0.017936	-0.008600
10	-0.009481	-0.014482	0.002465	-0.002330	0.016827	-0.012472	0.009209

2019-07-18 00:00:00

6177

6172

6183

```
0    0.001704
1    -0.001007
2    -0.000176
3    -0.009699
4     0.000622
5    -0.002481
6     0.007643
7     0.010420
8    -0.000635
9     0.005578
10    0.001496
```

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	10	11	12	13	\
0	0.004948	0.009686	-0.002720	-0.010570	0.011035	-0.005094	-0.006194	
1	-0.000323	0.022564	0.002894	-0.016398	-0.011563	0.005015	-0.007890	
2	-0.003875	0.002492	-0.004800	-0.007949	0.004341	-0.001034	-0.012402	
3	0.004547	0.007367	0.002790	0.034574	-0.017579	-0.000993	0.000551	
4	-0.000251	0.012228	-0.009852	-0.015148	-0.019118	0.009543	-0.011312	
5	0.001821	0.013688	0.018115	0.008624	0.018290	0.016459	0.003533	
6	-0.027440	0.028131	-0.014278	-0.031175	0.019245	0.025073	0.017753	
7	-0.014816	0.016130	-0.001882	0.000068	0.002168	0.002947	0.001572	
8	0.005888	-0.009860	0.001139	0.005273	0.020210	0.017124	0.019005	
9	-0.004017	0.017101	-0.013010	-0.002504	0.001695	0.017936	-0.008600	
10	-0.009481	-0.014482	0.002465	-0.002330	0.016827	-0.012472	0.009209	

14

```
0    0.001704
1    -0.001007
2    -0.000176
3    -0.009699
4     0.000622
5    -0.002481
```

6 0.007643  
7 0.010420  
8 -0.000635  
9 0.005578  
10 0.001496

2019-04-24 00:00:00

6118

6113

6124

0 -0.002822  
1 0.010554  
2 0.011560  
3 0.002149  
4 0.004734  
5 -0.001236  
6 0.033486  
7 0.001044  
8 -0.001995  
9 0.005444  
10 -0.013325

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	10	11	12	13	\
0	0.004948	0.009686	-0.002720	-0.010570	0.011035	-0.005094	-0.006194	
1	-0.000323	0.022564	0.002894	-0.016398	-0.011563	0.005015	-0.007890	
2	-0.003875	0.002492	-0.004800	-0.007949	0.004341	-0.001034	-0.012402	
3	0.004547	0.007367	0.002790	0.034574	-0.017579	-0.000993	0.000551	
4	-0.000251	0.012228	-0.009852	-0.015148	-0.019118	0.009543	-0.011312	
5	0.001821	0.013688	0.018115	0.008624	0.018290	0.016459	0.003533	
6	-0.027440	0.028131	-0.014278	-0.031175	0.019245	0.025073	0.017753	
7	-0.014816	0.016130	-0.001882	0.000068	0.002168	0.002947	0.001572	
8	0.005888	-0.009860	0.001139	0.005273	0.020210	0.017124	0.019005	
9	-0.004017	0.017101	-0.013010	-0.002504	0.001695	0.017936	-0.008600	
10	-0.009481	-0.014482	0.002465	-0.002330	0.016827	-0.012472	0.009209	



```

0  0.001704 -0.002822
1 -0.001007  0.010554
2 -0.000176  0.011560
3 -0.009699  0.002149
4  0.000622  0.004734
5 -0.002481 -0.001236
6  0.007643  0.033486
7  0.010420  0.001044
8 -0.000635 -0.001995
9  0.005578  0.005444
10 0.001496 -0.013325

```

2019-01-30 00:00:00

6060

6055

6066

```

0    0.007543
1   -0.006155
2    0.000645
3   -0.011655
4   -0.018909
5    0.017868
6   -0.026928
7   -0.016699
8    0.022023
9    0.009288
10  -0.008874

```

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	10	11	12	13	\
0	0.004948	0.009686	-0.002720	-0.010570	0.011035	-0.005094	-0.006194	
1	-0.000323	0.022564	0.002894	-0.016398	-0.011563	0.005015	-0.007890	
2	-0.003875	0.002492	-0.004800	-0.007949	0.004341	-0.001034	-0.012402	
3	0.004547	0.007367	0.002790	0.034574	-0.017579	-0.000993	0.000551	
4	-0.000251	0.012228	-0.009852	-0.015148	-0.019118	0.009543	-0.011312	
5	0.001821	0.013688	0.018115	0.008624	0.018290	0.016459	0.003533	
6	-0.027440	0.028131	-0.014278	-0.031175	0.019245	0.025073	0.017753	

7	-0.014816	0.016130	-0.001882	0.000068	0.002168	0.002947	0.001572
8	0.005888	-0.009860	0.001139	0.005273	0.020210	0.017124	0.019005
9	-0.004017	0.017101	-0.013010	-0.002504	0.001695	0.017936	-0.008600
10	-0.009481	-0.014482	0.002465	-0.002330	0.016827	-0.012472	0.009209

	14	15	16
0	0.001704	-0.002822	0.007543
1	-0.001007	0.010554	-0.006155
2	-0.000176	0.011560	0.000645
3	-0.009699	0.002149	-0.011655
4	0.000622	0.004734	-0.018909
5	-0.002481	-0.001236	0.017868
6	0.007643	0.033486	-0.026928
7	0.010420	0.001044	-0.016699
8	-0.000635	-0.001995	0.022023
9	0.005578	0.005444	0.009288
10	0.001496	-0.013325	-0.008874

2018-10-24 00:00:00

5995

5990

6001

0	-0.002360
1	-0.005570
2	0.001836
3	0.013226
4	-0.008444
5	-0.022605
6	0.039819
7	0.004954
8	-0.022517
9	-0.016822
10	0.018841

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	10	11	12	13	\
0	0.004948	0.009686	-0.002720	-0.010570	0.011035	-0.005094	-0.006194	

1	-0.000323	0.022564	0.002894	-0.016398	-0.011563	0.005015	-0.007890
2	-0.003875	0.002492	-0.004800	-0.007949	0.004341	-0.001034	-0.012402
3	0.004547	0.007367	0.002790	0.034574	-0.017579	-0.000993	0.000551
4	-0.000251	0.012228	-0.009852	-0.015148	-0.019118	0.009543	-0.011312
5	0.001821	0.013688	0.018115	0.008624	0.018290	0.016459	0.003533
6	-0.027440	0.028131	-0.014278	-0.031175	0.019245	0.025073	0.017753
7	-0.014816	0.016130	-0.001882	0.000068	0.002168	0.002947	0.001572
8	0.005888	-0.009860	0.001139	0.005273	0.020210	0.017124	0.019005
9	-0.004017	0.017101	-0.013010	-0.002504	0.001695	0.017936	-0.008600
10	-0.009481	-0.014482	0.002465	-0.002330	0.016827	-0.012472	0.009209

	14	15	16	17
0	0.001704	-0.002822	0.007543	-0.002360
1	-0.001007	0.010554	-0.006155	-0.005570
2	-0.000176	0.011560	0.000645	0.001836
3	-0.009699	0.002149	-0.011655	0.013226
4	0.000622	0.004734	-0.018909	-0.008444
5	-0.002481	-0.001236	0.017868	-0.022605
6	0.007643	0.033486	-0.026928	0.039819
7	0.010420	0.001044	-0.016699	0.004954
8	-0.000635	-0.001995	0.022023	-0.022517
9	0.005578	0.005444	0.009288	-0.016822
10	0.001496	-0.013325	-0.008874	0.018841

2018-07-19 00:00:00

5927

5922

5933

0	0.012922
1	0.010822
2	-0.003904
3	0.005939
4	-0.009994
5	-0.002896
6	0.018860
7	0.014159
8	-0.007652
9	0.020343
10	-0.007885

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	

8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128

	7	8	9	10	11	12	13 \
0	0.004948	0.009686	-0.002720	-0.010570	0.011035	-0.005094	-0.006194
1	-0.000323	0.022564	0.002894	-0.016398	-0.011563	0.005015	-0.007890
2	-0.003875	0.002492	-0.004800	-0.007949	0.004341	-0.001034	-0.012402
3	0.004547	0.007367	0.002790	0.034574	-0.017579	-0.000993	0.000551
4	-0.000251	0.012228	-0.009852	-0.015148	-0.019118	0.009543	-0.011312
5	0.001821	0.013688	0.018115	0.008624	0.018290	0.016459	0.003533
6	-0.027440	0.028131	-0.014278	-0.031175	0.019245	0.025073	0.017753
7	-0.014816	0.016130	-0.001882	0.000068	0.002168	0.002947	0.001572
8	0.005888	-0.009860	0.001139	0.005273	0.020210	0.017124	0.019005
9	-0.004017	0.017101	-0.013010	-0.002504	0.001695	0.017936	-0.008600
10	-0.009481	-0.014482	0.002465	-0.002330	0.016827	-0.012472	0.009209

	14	15	16	17	18
0	0.001704	-0.002822	0.007543	-0.002360	0.012922
1	-0.001007	0.010554	-0.006155	-0.005570	0.010822
2	-0.000176	0.011560	0.000645	0.001836	-0.003904
3	-0.009699	0.002149	-0.011655	0.013226	0.005939
4	0.000622	0.004734	-0.018909	-0.008444	-0.009994
5	-0.002481	-0.001236	0.017868	-0.022605	-0.002896
6	0.007643	0.033486	-0.026928	0.039819	0.018860
7	0.010420	0.001044	-0.016699	0.004954	0.014159
8	-0.000635	-0.001995	0.022023	-0.022517	-0.007652
9	0.005578	0.005444	0.009288	-0.016822	0.020343
10	0.001496	-0.013325	-0.008874	0.018841	-0.007885

2018-04-26 00:00:00

5869

5864

5875

0	0.002304
1	-0.003013
2	0.003628
3	-0.010007
4	-0.010536
5	0.010690
6	0.015436
7	-0.015816
8	0.013276
9	-0.008478
10	0.008242

Name: exret, dtype: float64

	0	1	2	3	4	5	6 \
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795

2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128

	7	8	9	10	11	12	13 \
0	0.004948	0.009686	-0.002720	-0.010570	0.011035	-0.005094	-0.006194
1	-0.000323	0.022564	0.002894	-0.016398	-0.011563	0.005015	-0.007890
2	-0.003875	0.002492	-0.004800	-0.007949	0.004341	-0.001034	-0.012402
3	0.004547	0.007367	0.002790	0.034574	-0.017579	-0.000993	0.000551
4	-0.000251	0.012228	-0.009852	-0.015148	-0.019118	0.009543	-0.011312
5	0.001821	0.013688	0.018115	0.008624	0.018290	0.016459	0.003533
6	-0.027440	0.028131	-0.014278	-0.031175	0.019245	0.025073	0.017753
7	-0.014816	0.016130	-0.001882	0.000068	0.002168	0.002947	0.001572
8	0.005888	-0.009860	0.001139	0.005273	0.020210	0.017124	0.019005
9	-0.004017	0.017101	-0.013010	-0.002504	0.001695	0.017936	-0.008600
10	-0.009481	-0.014482	0.002465	-0.002330	0.016827	-0.012472	0.009209

	14	15	16	17	18	19
0	0.001704	-0.002822	0.007543	-0.002360	0.012922	0.002304
1	-0.001007	0.010554	-0.006155	-0.005570	0.010822	-0.003013
2	-0.000176	0.011560	0.000645	0.001836	-0.003904	0.003628
3	-0.009699	0.002149	-0.011655	0.013226	0.005939	-0.010007
4	0.000622	0.004734	-0.018909	-0.008444	-0.009994	-0.010536
5	-0.002481	-0.001236	0.017868	-0.022605	-0.002896	0.010690
6	0.007643	0.033486	-0.026928	0.039819	0.018860	0.015436
7	0.010420	0.001044	-0.016699	0.004954	0.014159	-0.015816
8	-0.000635	-0.001995	0.022023	-0.022517	-0.007652	0.013276
9	0.005578	0.005444	0.009288	-0.016822	0.020343	-0.008478
10	0.001496	-0.013325	-0.008874	0.018841	-0.007885	0.008242

2018-01-31 00:00:00

5810

5805

5816

0	-0.000310
1	0.004952
2	0.006896
3	0.005244
4	-0.001665
5	0.023988
6	-0.007246
7	-0.005102
8	-0.000206

9 0.020400

10 -0.013831

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	11	12	13	14	\
0	0.004948	0.009686	-0.002720	...	0.011035	-0.005094	-0.006194	0.001704	
1	-0.000323	0.022564	0.002894	...	-0.011563	0.005015	-0.007890	-0.001007	
2	-0.003875	0.002492	-0.004800	...	0.004341	-0.001034	-0.012402	-0.000176	
3	0.004547	0.007367	0.002790	...	-0.017579	-0.000993	0.000551	-0.009699	
4	-0.000251	0.012228	-0.009852	...	-0.019118	0.009543	-0.011312	0.000622	
5	0.001821	0.013688	0.018115	...	0.018290	0.016459	0.003533	-0.002481	
6	-0.027440	0.028131	-0.014278	...	0.019245	0.025073	0.017753	0.007643	
7	-0.014816	0.016130	-0.001882	...	0.002168	0.002947	0.001572	0.010420	
8	0.005888	-0.009860	0.001139	...	0.020210	0.017124	0.019005	-0.000635	
9	-0.004017	0.017101	-0.013010	...	0.001695	0.017936	-0.008600	0.005578	
10	-0.009481	-0.014482	0.002465	...	0.016827	-0.012472	0.009209	0.001496	

	15	16	17	18	19	20
0	-0.002822	0.007543	-0.002360	0.012922	0.002304	-0.000310
1	0.010554	-0.006155	-0.005570	0.010822	-0.003013	0.004952
2	0.011560	0.000645	0.001836	-0.003904	0.003628	0.006896
3	0.002149	-0.011655	0.013226	0.005939	-0.010007	0.005244
4	0.004734	-0.018909	-0.008444	-0.009994	-0.010536	-0.001665
5	-0.001236	0.017868	-0.022605	-0.002896	0.010690	0.023988
6	0.033486	-0.026928	0.039819	0.018860	0.015436	-0.007246
7	0.001044	-0.016699	0.004954	0.014159	-0.015816	-0.005102
8	-0.001995	0.022023	-0.022517	-0.007652	0.013276	-0.000206
9	0.005444	0.009288	-0.016822	0.020343	-0.008478	0.020400
10	-0.013325	-0.008874	0.018841	-0.007885	0.008242	-0.013831

[11 rows x 21 columns]

2017-10-26 00:00:00

5745

5740

5751

0 0.003538

```

1    0.006435
2    0.004226
3   -0.001238
4    0.001746
5    0.000383
6    0.056046
7    0.004147
8   -0.009408
9   -0.001592
10   0.010269

```

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	12	13	14	15	\
0	0.004948	0.009686	-0.002720	...	-0.005094	-0.006194	0.001704	-0.002822	
1	-0.000323	0.022564	0.002894	...	0.005015	-0.007890	-0.001007	0.010554	
2	-0.003875	0.002492	-0.004800	...	-0.001034	-0.012402	-0.000176	0.011560	
3	0.004547	0.007367	0.002790	...	-0.000993	0.000551	-0.009699	0.002149	
4	-0.000251	0.012228	-0.009852	...	0.009543	-0.011312	0.000622	0.004734	
5	0.001821	0.013688	0.018115	...	0.016459	0.003533	-0.002481	-0.001236	
6	-0.027440	0.028131	-0.014278	...	0.025073	0.017753	0.007643	0.033486	
7	-0.014816	0.016130	-0.001882	...	0.002947	0.001572	0.010420	0.001044	
8	0.005888	-0.009860	0.001139	...	0.017124	0.019005	-0.000635	-0.001995	
9	-0.004017	0.017101	-0.013010	...	0.017936	-0.008600	0.005578	0.005444	
10	-0.009481	-0.014482	0.002465	...	-0.012472	0.009209	0.001496	-0.013325	

	16	17	18	19	20	21
0	0.007543	-0.002360	0.012922	0.002304	-0.000310	0.003538
1	-0.006155	-0.005570	0.010822	-0.003013	0.004952	0.006435
2	0.000645	0.001836	-0.003904	0.003628	0.006896	0.004226
3	-0.011655	0.013226	0.005939	-0.010007	0.005244	-0.001238
4	-0.018909	-0.008444	-0.009994	-0.010536	-0.001665	0.001746
5	0.017868	-0.022605	-0.002896	0.010690	0.023988	0.000383
6	-0.026928	0.039819	0.018860	0.015436	-0.007246	0.056046
7	-0.016699	0.004954	0.014159	-0.015816	-0.005102	0.004147
8	0.022023	-0.022517	-0.007652	0.013276	-0.000206	-0.009408
9	0.009288	-0.016822	0.020343	-0.008478	0.020400	-0.001592

10 -0.008874 0.018841 -0.007885 0.008242 -0.013831 0.010269

[11 rows x 22 columns]

2017-07-20 00:00:00

5676

5671

5682

0 0.006839

1 0.009399

2 0.007885

3 -0.001279

4 0.002267

5 0.005028

6 -0.005425

7 -0.001511

8 0.005093

9 -0.002169

10 -0.011046

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	13	14	15	16	\
0	0.004948	0.009686	-0.002720	...	-0.006194	0.001704	-0.002822	0.007543	
1	-0.000323	0.022564	0.002894	...	-0.007890	-0.001007	0.010554	-0.006155	
2	-0.003875	0.002492	-0.004800	...	-0.012402	-0.000176	0.011560	0.000645	
3	0.004547	0.007367	0.002790	...	0.000551	-0.009699	0.002149	-0.011655	
4	-0.000251	0.012228	-0.009852	...	-0.011312	0.000622	0.004734	-0.018909	
5	0.001821	0.013688	0.018115	...	0.003533	-0.002481	-0.001236	0.017868	
6	-0.027440	0.028131	-0.014278	...	0.017753	0.007643	0.033486	-0.026928	
7	-0.014816	0.016130	-0.001882	...	0.001572	0.010420	0.001044	-0.016699	
8	0.005888	-0.009860	0.001139	...	0.019005	-0.000635	-0.001995	0.022023	
9	-0.004017	0.017101	-0.013010	...	-0.008600	0.005578	0.005444	0.009288	
10	-0.009481	-0.014482	0.002465	...	0.009209	0.001496	-0.013325	-0.008874	

	17	18	19	20	21	22
0	-0.002360	0.012922	0.002304	-0.000310	0.003538	0.006839
1	-0.005570	0.010822	-0.003013	0.004952	0.006435	0.009399



2	0.001836	-0.003904	0.003628	0.006896	0.004226	0.007885
3	0.013226	0.005939	-0.010007	0.005244	-0.001238	-0.001279
4	-0.008444	-0.009994	-0.010536	-0.001665	0.001746	0.002267
5	-0.022605	-0.002896	0.010690	0.023988	0.000383	0.005028
6	0.039819	0.018860	0.015436	-0.007246	0.056046	-0.005425
7	0.004954	0.014159	-0.015816	-0.005102	0.004147	-0.001511
8	-0.022517	-0.007652	0.013276	-0.000206	-0.009408	0.005093
9	-0.016822	0.020343	-0.008478	0.020400	-0.001592	-0.002169
10	0.018841	-0.007885	0.008242	-0.013831	0.010269	-0.011046

[11 rows x 23 columns]

2017-04-27 00:00:00

5618

5613

5624

0	-0.000485
1	0.016775
2	0.006178
3	-0.000316
4	-0.000839
5	0.005934
6	0.004697
7	0.012144
8	-0.002774
9	-0.001903
10	-0.004491

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	14	15	16	17	\
0	0.004948	0.009686	-0.002720	...	0.001704	-0.002822	0.007543	-0.002360	
1	-0.000323	0.022564	0.002894	...	-0.001007	0.010554	-0.006155	-0.005570	
2	-0.003875	0.002492	-0.004800	...	-0.000176	0.011560	0.000645	0.001836	
3	0.004547	0.007367	0.002790	...	-0.009699	0.002149	-0.011655	0.013226	
4	-0.000251	0.012228	-0.009852	...	0.000622	0.004734	-0.018909	-0.008444	
5	0.001821	0.013688	0.018115	...	-0.002481	-0.001236	0.017868	-0.022605	
6	-0.027440	0.028131	-0.014278	...	0.007643	0.033486	-0.026928	0.039819	

7	-0.014816	0.016130	-0.001882	...	0.010420	0.001044	-0.016699	0.004954
8	0.005888	-0.009860	0.001139	...	-0.000635	-0.001995	0.022023	-0.022517
9	-0.004017	0.017101	-0.013010	...	0.005578	0.005444	0.009288	-0.016822
10	-0.009481	-0.014482	0.002465	...	0.001496	-0.013325	-0.008874	0.018841

	18	19	20	21	22	23
0	0.012922	0.002304	-0.000310	0.003538	0.006839	-0.000485
1	0.010822	-0.003013	0.004952	0.006435	0.009399	0.016775
2	-0.003904	0.003628	0.006896	0.004226	0.007885	0.006178
3	0.005939	-0.010007	0.005244	-0.001238	-0.001279	-0.000316
4	-0.009994	-0.010536	-0.001665	0.001746	0.002267	-0.000839
5	-0.002896	0.010690	0.023988	0.000383	0.005028	0.005934
6	0.018860	0.015436	-0.007246	0.056046	-0.005425	0.004697
7	0.014159	-0.015816	-0.005102	0.004147	-0.001511	0.012144
8	-0.007652	0.013276	-0.000206	-0.009408	0.005093	-0.002774
9	0.020343	-0.008478	0.020400	-0.001592	-0.002169	-0.001903
10	-0.007885	0.008242	-0.013831	0.010269	-0.011046	-0.004491

[11 rows x 24 columns]

2017-01-26 00:00:00

5555

5550

5561

0	0.000409
1	0.003697
2	0.006197
3	0.002330
4	-0.005507
5	0.010000
6	0.024361
7	-0.003872
8	-0.006480
9	-0.016849
10	-0.007019

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	15	16	17	18	\
0	0.004948	0.009686	-0.002720	...	-0.002822	0.007543	-0.002360	0.012922	
1	-0.000323	0.022564	0.002894	...	0.010554	-0.006155	-0.005570	0.010822	
2	-0.003875	0.002492	-0.004800	...	0.011560	0.000645	0.001836	-0.003904	
3	0.004547	0.007367	0.002790	...	0.002149	-0.011655	0.013226	0.005939	
4	-0.000251	0.012228	-0.009852	...	0.004734	-0.018909	-0.008444	-0.009994	
5	0.001821	0.013688	0.018115	...	-0.001236	0.017868	-0.022605	-0.002896	
6	-0.027440	0.028131	-0.014278	...	0.033486	-0.026928	0.039819	0.018860	
7	-0.014816	0.016130	-0.001882	...	0.001044	-0.016699	0.004954	0.014159	
8	0.005888	-0.009860	0.001139	...	-0.001995	0.022023	-0.022517	-0.007652	
9	-0.004017	0.017101	-0.013010	...	0.005444	0.009288	-0.016822	0.020343	
10	-0.009481	-0.014482	0.002465	...	-0.013325	-0.008874	0.018841	-0.007885	

	19	20	21	22	23	24
0	0.002304	-0.000310	0.003538	0.006839	-0.000485	0.000409
1	-0.003013	0.004952	0.006435	0.009399	0.016775	0.003697
2	0.003628	0.006896	0.004226	0.007885	0.006178	0.006197
3	-0.010007	0.005244	-0.001238	-0.001279	-0.000316	0.002330
4	-0.010536	-0.001665	0.001746	0.002267	-0.000839	-0.005507
5	0.010690	0.023988	0.000383	0.005028	0.005934	0.010000
6	0.015436	-0.007246	0.056046	-0.005425	0.004697	0.024361
7	-0.015816	-0.005102	0.004147	-0.001511	0.012144	-0.003872
8	0.013276	-0.000206	-0.009408	0.005093	-0.002774	-0.006480
9	-0.008478	0.020400	-0.001592	-0.002169	-0.001903	-0.016849
10	0.008242	-0.013831	0.010269	-0.011046	-0.004491	-0.007019

[11 rows x 25 columns]

2016-10-26 00:00:00

5493

5488

5499

0	-0.004447
1	-0.003491
2	0.042180
3	0.017711
4	0.003634
5	-0.004162
6	-0.005755
7	-0.000719
8	0.000957
9	0.004784
10	0.000338

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	

4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128

	7	8	9	...	16	17	18	19	\
0	0.004948	0.009686	-0.002720	...	0.007543	-0.002360	0.012922	0.002304	
1	-0.000323	0.022564	0.002894	...	-0.006155	-0.005570	0.010822	-0.003013	
2	-0.003875	0.002492	-0.004800	...	0.000645	0.001836	-0.003904	0.003628	
3	0.004547	0.007367	0.002790	...	-0.011655	0.013226	0.005939	-0.010007	
4	-0.000251	0.012228	-0.009852	...	-0.018909	-0.008444	-0.009994	-0.010536	
5	0.001821	0.013688	0.018115	...	0.017868	-0.022605	-0.002896	0.010690	
6	-0.027440	0.028131	-0.014278	...	-0.026928	0.039819	0.018860	0.015436	
7	-0.014816	0.016130	-0.001882	...	-0.016699	0.004954	0.014159	-0.015816	
8	0.005888	-0.009860	0.001139	...	0.022023	-0.022517	-0.007652	0.013276	
9	-0.004017	0.017101	-0.013010	...	0.009288	-0.016822	0.020343	-0.008478	
10	-0.009481	-0.014482	0.002465	...	-0.008874	0.018841	-0.007885	0.008242	

	20	21	22	23	24	25
0	-0.000310	0.003538	0.006839	-0.000485	0.000409	-0.004447
1	0.004952	0.006435	0.009399	0.016775	0.003697	-0.003491
2	0.006896	0.004226	0.007885	0.006178	0.006197	0.042180
3	0.005244	-0.001238	-0.001279	-0.000316	0.002330	0.017711
4	-0.001665	0.001746	0.002267	-0.000839	-0.005507	0.003634
5	0.023988	0.000383	0.005028	0.005934	0.010000	-0.004162
6	-0.007246	0.056046	-0.005425	0.004697	0.024361	-0.005755
7	-0.005102	0.004147	-0.001511	0.012144	-0.003872	-0.000719
8	-0.000206	-0.009408	0.005093	-0.002774	-0.006480	0.000957
9	0.020400	-0.001592	-0.002169	-0.001903	-0.016849	0.004784
10	-0.013831	0.010269	-0.011046	-0.004491	-0.007019	0.000338

[11 rows x 26 columns]

2016-07-19 00:00:00

5423

5418

5429

0	0.004780
1	0.005503
2	-0.000961
3	0.000185
4	0.002459
5	-0.014688
6	0.048847
7	0.001645
8	0.009245

9 0.005840

10 0.000206

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	17	18	19	20	\
0	0.004948	0.009686	-0.002720	...	-0.002360	0.012922	0.002304	-0.000310	
1	-0.000323	0.022564	0.002894	...	-0.005570	0.010822	-0.003013	0.004952	
2	-0.003875	0.002492	-0.004800	...	0.001836	-0.003904	0.003628	0.006896	
3	0.004547	0.007367	0.002790	...	0.013226	0.005939	-0.010007	0.005244	
4	-0.000251	0.012228	-0.009852	...	-0.008444	-0.009994	-0.010536	-0.001665	
5	0.001821	0.013688	0.018115	...	-0.022605	-0.002896	0.010690	0.023988	
6	-0.027440	0.028131	-0.014278	...	0.039819	0.018860	0.015436	-0.007246	
7	-0.014816	0.016130	-0.001882	...	0.004954	0.014159	-0.015816	-0.005102	
8	0.005888	-0.009860	0.001139	...	-0.022517	-0.007652	0.013276	-0.000206	
9	-0.004017	0.017101	-0.013010	...	-0.016822	0.020343	-0.008478	0.020400	
10	-0.009481	-0.014482	0.002465	...	0.018841	-0.007885	0.008242	-0.013831	

	21	22	23	24	25	26
0	0.003538	0.006839	-0.000485	0.000409	-0.004447	0.004780
1	0.006435	0.009399	0.016775	0.003697	-0.003491	0.005503
2	0.004226	0.007885	0.006178	0.006197	0.042180	-0.000961
3	-0.001238	-0.001279	-0.000316	0.002330	0.017711	0.000185
4	0.001746	0.002267	-0.000839	-0.005507	0.003634	0.002459
5	0.000383	0.005028	0.005934	0.010000	-0.004162	-0.014688
6	0.056046	-0.005425	0.004697	0.024361	-0.005755	0.048847
7	0.004147	-0.001511	0.012144	-0.003872	-0.000719	0.001645
8	-0.009408	0.005093	-0.002774	-0.006480	0.000957	0.009245
9	-0.001592	-0.002169	-0.001903	-0.016849	0.004784	0.005840
10	0.010269	-0.011046	-0.004491	-0.007019	0.000338	0.000206

[11 rows x 27 columns]

2016-04-21 00:00:00

5362

5357

5368

0 0.000008

```

1    0.006223
2    0.008014
3   -0.004324
4   -0.014949
5    0.008612
6   -0.071758
7    0.008185
8   -0.014730
9   -0.011369
10  -0.011186

```

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	18	19	20	21	\
0	0.004948	0.009686	-0.002720	...	0.012922	0.002304	-0.000310	0.003538	
1	-0.000323	0.022564	0.002894	...	0.010822	-0.003013	0.004952	0.006435	
2	-0.003875	0.002492	-0.004800	...	-0.003904	0.003628	0.006896	0.004226	
3	0.004547	0.007367	0.002790	...	0.005939	-0.010007	0.005244	-0.001238	
4	-0.000251	0.012228	-0.009852	...	-0.009994	-0.010536	-0.001665	0.001746	
5	0.001821	0.013688	0.018115	...	-0.002896	0.010690	0.023988	0.000383	
6	-0.027440	0.028131	-0.014278	...	0.018860	0.015436	-0.007246	0.056046	
7	-0.014816	0.016130	-0.001882	...	0.014159	-0.015816	-0.005102	0.004147	
8	0.005888	-0.009860	0.001139	...	-0.007652	0.013276	-0.000206	-0.009408	
9	-0.004017	0.017101	-0.013010	...	0.020343	-0.008478	0.020400	-0.001592	
10	-0.009481	-0.014482	0.002465	...	-0.007885	0.008242	-0.013831	0.010269	

	22	23	24	25	26	27
0	0.006839	-0.000485	0.000409	-0.004447	0.004780	0.000008
1	0.009399	0.016775	0.003697	-0.003491	0.005503	0.006223
2	0.007885	0.006178	0.006197	0.042180	-0.000961	0.008014
3	-0.001279	-0.000316	0.002330	0.017711	0.000185	-0.004324
4	0.002267	-0.000839	-0.005507	0.003634	0.002459	-0.014949
5	0.005028	0.005934	0.010000	-0.004162	-0.014688	0.008612
6	-0.005425	0.004697	0.024361	-0.005755	0.048847	-0.071758
7	-0.001511	0.012144	-0.003872	-0.000719	0.001645	0.008185
8	0.005093	-0.002774	-0.006480	0.000957	0.009245	-0.014730
9	-0.002169	-0.001903	-0.016849	0.004784	0.005840	-0.011369

10 -0.011046 -0.004491 -0.007019 0.000338 0.000206 -0.011186

[11 rows x 28 columns]

2016-01-28 00:00:00

5304

5299

5310

0 -0.011299

1 0.015572

2 0.006076

3 -0.006807

4 -0.007346

5 0.010872

6 0.033442

7 -0.006455

8 -0.012512

9 -0.020841

10 -0.004594

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	19	20	21	22	\
0	0.004948	0.009686	-0.002720	...	0.002304	-0.000310	0.003538	0.006839	
1	-0.000323	0.022564	0.002894	...	-0.003013	0.004952	0.006435	0.009399	
2	-0.003875	0.002492	-0.004800	...	0.003628	0.006896	0.004226	0.007885	
3	0.004547	0.007367	0.002790	...	-0.010007	0.005244	-0.001238	-0.001279	
4	-0.000251	0.012228	-0.009852	...	-0.010536	-0.001665	0.001746	0.002267	
5	0.001821	0.013688	0.018115	...	0.010690	0.023988	0.000383	0.005028	
6	-0.027440	0.028131	-0.014278	...	0.015436	-0.007246	0.056046	-0.005425	
7	-0.014816	0.016130	-0.001882	...	-0.015816	-0.005102	0.004147	-0.001511	
8	0.005888	-0.009860	0.001139	...	0.013276	-0.000206	-0.009408	0.005093	
9	-0.004017	0.017101	-0.013010	...	-0.008478	0.020400	-0.001592	-0.002169	
10	-0.009481	-0.014482	0.002465	...	0.008242	-0.013831	0.010269	-0.011046	

	23	24	25	26	27	28
0	-0.000485	0.000409	-0.004447	0.004780	0.000008	-0.011299
1	0.016775	0.003697	-0.003491	0.005503	0.006223	0.015572

2	0.006178	0.006197	0.042180	-0.000961	0.008014	0.006076
3	-0.000316	0.002330	0.017711	0.000185	-0.004324	-0.006807
4	-0.000839	-0.005507	0.003634	0.002459	-0.014949	-0.007346
5	0.005934	0.010000	-0.004162	-0.014688	0.008612	0.010872
6	0.004697	0.024361	-0.005755	0.048847	-0.071758	0.033442
7	0.012144	-0.003872	-0.000719	0.001645	0.008185	-0.006455
8	-0.002774	-0.006480	0.000957	0.009245	-0.014730	-0.012512
9	-0.001903	-0.016849	0.004784	0.005840	-0.011369	-0.020841
10	-0.004491	-0.007019	0.000338	0.000206	-0.011186	-0.004594

[11 rows x 29 columns]

2015-10-22 00:00:00

5238

5233

5244

0	-0.007783
1	0.006066
2	0.002045
3	0.004571
4	-0.006107
5	0.000957
6	0.089740
7	0.028015
8	-0.007769
9	-0.006439
10	-0.011036

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	20	21	22	23	\
0	0.004948	0.009686	-0.002720	...	-0.000310	0.003538	0.006839	-0.000485	
1	-0.000323	0.022564	0.002894	...	0.004952	0.006435	0.009399	0.016775	
2	-0.003875	0.002492	-0.004800	...	0.006896	0.004226	0.007885	0.006178	
3	0.004547	0.007367	0.002790	...	0.005244	-0.001238	-0.001279	-0.000316	
4	-0.000251	0.012228	-0.009852	...	-0.001665	0.001746	0.002267	-0.000839	
5	0.001821	0.013688	0.018115	...	0.023988	0.000383	0.005028	0.005934	
6	-0.027440	0.028131	-0.014278	...	-0.007246	0.056046	-0.005425	0.004697	



7	-0.014816	0.016130	-0.001882	...	-0.005102	0.004147	-0.001511	0.012144
8	0.005888	-0.009860	0.001139	...	-0.000206	-0.009408	0.005093	-0.002774
9	-0.004017	0.017101	-0.013010	...	0.020400	-0.001592	-0.002169	-0.001903
10	-0.009481	-0.014482	0.002465	...	-0.013831	0.010269	-0.011046	-0.004491

	24	25	26	27	28	29
0	0.000409	-0.004447	0.004780	0.000008	-0.011299	-0.007783
1	0.003697	-0.003491	0.005503	0.006223	0.015572	0.006066
2	0.006197	0.042180	-0.000961	0.008014	0.006076	0.002045
3	0.002330	0.017711	0.000185	-0.004324	-0.006807	0.004571
4	-0.005507	0.003634	0.002459	-0.014949	-0.007346	-0.006107
5	0.010000	-0.004162	-0.014688	0.008612	0.010872	0.000957
6	0.024361	-0.005755	0.048847	-0.071758	0.033442	0.089740
7	-0.003872	-0.000719	0.001645	0.008185	-0.006455	0.028015
8	-0.006480	0.000957	0.009245	-0.014730	-0.012512	-0.007769
9	-0.016849	0.004784	0.005840	-0.011369	-0.020841	-0.006439
10	-0.007019	0.000338	0.000206	-0.011186	-0.004594	-0.011036

[11 rows x 30 columns]

2015-07-21 00:00:00

5172

5167

5178

0	-0.002697
1	0.003804
2	0.011653
3	-0.001963
4	0.005664
5	0.011934
6	-0.034414
7	0.018193
8	0.007017
9	-0.007068
10	-0.012607

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	21	22	23	24	\
0	0.004948	0.009686	-0.002720	...	0.003538	0.006839	-0.000485	0.000409	
1	-0.000323	0.022564	0.002894	...	0.006435	0.009399	0.016775	0.003697	
2	-0.003875	0.002492	-0.004800	...	0.004226	0.007885	0.006178	0.006197	
3	0.004547	0.007367	0.002790	...	-0.001238	-0.001279	-0.000316	0.002330	
4	-0.000251	0.012228	-0.009852	...	0.001746	0.002267	-0.000839	-0.005507	
5	0.001821	0.013688	0.018115	...	0.000383	0.005028	0.005934	0.010000	
6	-0.027440	0.028131	-0.014278	...	0.056046	-0.005425	0.004697	0.024361	
7	-0.014816	0.016130	-0.001882	...	0.004147	-0.001511	0.012144	-0.003872	
8	0.005888	-0.009860	0.001139	...	-0.009408	0.005093	-0.002774	-0.006480	
9	-0.004017	0.017101	-0.013010	...	-0.001592	-0.002169	-0.001903	-0.016849	
10	-0.009481	-0.014482	0.002465	...	0.010269	-0.011046	-0.004491	-0.007019	

	25	26	27	28	29	30
0	-0.004447	0.004780	0.000008	-0.011299	-0.007783	-0.002697
1	-0.003491	0.005503	0.006223	0.015572	0.006066	0.003804
2	0.042180	-0.000961	0.008014	0.006076	0.002045	0.011653
3	0.017711	0.000185	-0.004324	-0.006807	0.004571	-0.001963
4	0.003634	0.002459	-0.014949	-0.007346	-0.006107	0.005664
5	-0.004162	-0.014688	0.008612	0.010872	0.000957	0.011934
6	-0.005755	0.048847	-0.071758	0.033442	0.089740	-0.034414
7	-0.000719	0.001645	0.008185	-0.006455	0.028015	0.018193
8	0.000957	0.009245	-0.014730	-0.012512	-0.007769	0.007017
9	0.004784	0.005840	-0.011369	-0.020841	-0.006439	-0.007068
10	0.000338	0.000206	-0.011186	-0.004594	-0.011036	-0.012607

[11 rows x 31 columns]

2015-04-23 00:00:00

5111

5106

5117

0	-0.001588
1	-0.001497
2	0.021759
3	-0.004812
4	0.003121
5	0.005783
6	0.102270
7	0.007483
8	0.020758
9	0.001706
10	0.001568

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	

4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128

	7	8	9	...	22	23	24	25 \
0	0.004948	0.009686	-0.002720	...	0.006839	-0.000485	0.000409	-0.004447
1	-0.000323	0.022564	0.002894	...	0.009399	0.016775	0.003697	-0.003491
2	-0.003875	0.002492	-0.004800	...	0.007885	0.006178	0.006197	0.042180
3	0.004547	0.007367	0.002790	...	-0.001279	-0.000316	0.002330	0.017711
4	-0.000251	0.012228	-0.009852	...	0.002267	-0.000839	-0.005507	0.003634
5	0.001821	0.013688	0.018115	...	0.005028	0.005934	0.010000	-0.004162
6	-0.027440	0.028131	-0.014278	...	-0.005425	0.004697	0.024361	-0.005755
7	-0.014816	0.016130	-0.001882	...	-0.001511	0.012144	-0.003872	-0.000719
8	0.005888	-0.009860	0.001139	...	0.005093	-0.002774	-0.006480	0.000957
9	-0.004017	0.017101	-0.013010	...	-0.002169	-0.001903	-0.016849	0.004784
10	-0.009481	-0.014482	0.002465	...	-0.011046	-0.004491	-0.007019	0.000338

	26	27	28	29	30	31
0	0.004780	0.000008	-0.011299	-0.007783	-0.002697	-0.001588
1	0.005503	0.006223	0.015572	0.006066	0.003804	-0.001497
2	-0.000961	0.008014	0.006076	0.002045	0.011653	0.021759
3	0.000185	-0.004324	-0.006807	0.004571	-0.001963	-0.004812
4	0.002459	-0.014949	-0.007346	-0.006107	0.005664	0.003121
5	-0.014688	0.008612	0.010872	0.000957	0.011934	0.005783
6	0.048847	-0.071758	0.033442	0.089740	-0.034414	0.102270
7	0.001645	0.008185	-0.006455	0.028015	0.018193	0.007483
8	0.009245	-0.014730	-0.012512	-0.007769	0.007017	0.020758
9	0.005840	-0.011369	-0.020841	-0.006439	-0.007068	0.001706
10	0.000206	-0.011186	-0.004594	-0.011036	-0.012607	0.001568

[11 rows x 32 columns]

2015-01-26 00:00:00

5050

5045

5056

0	0.003286
1	0.001694
2	-0.014863
3	0.011081
4	0.006553
5	-0.006172
6	-0.079146
7	-0.020963
8	0.010373

```

9      -0.025332
10     0.008820
Name: exret, dtype: float64
      0      1      2      3      4      5      6  \
0 -0.000978 -0.007344 -0.006861  0.000982 -0.005951 -0.004334 -0.006824
1  0.006712 -0.001798  0.004662  0.004334  0.011936 -0.006324 -0.000795
2 -0.003327  0.006555 -0.000062 -0.004628  0.005334  0.007902  0.014828
3 -0.008816  0.001556 -0.007584  0.003596  0.000447 -0.004076  0.002191
4  0.016825  0.009306 -0.007191  0.018715 -0.001623 -0.008080 -0.004523
5 -0.002057 -0.002475 -0.015231 -0.009257 -0.014416  0.004606 -0.003971
6 -0.001515 -0.069769  0.040696  0.046011  0.029990  0.047166 -0.000931
7 -0.005726 -0.013674  0.016407 -0.002114  0.015933 -0.006178 -0.003228
8  0.019706  0.015594  0.001457 -0.005528  0.003734  0.020465 -0.000144
9 -0.001850 -0.008402 -0.006901  0.019368 -0.010062 -0.008585  0.001527
10 -0.008993 -0.012958 -0.004812 -0.014293 -0.014002  0.007735 -0.000128

      7      8      9  ...      23      24      25      26  \
0  0.004948  0.009686 -0.002720 ... -0.000485  0.000409 -0.004447  0.004780
1 -0.000323  0.022564  0.002894 ...  0.016775  0.003697 -0.003491  0.005503
2 -0.003875  0.002492 -0.004800 ...  0.006178  0.006197  0.042180 -0.000961
3  0.004547  0.007367  0.002790 ... -0.000316  0.002330  0.017711  0.000185
4 -0.000251  0.012228 -0.009852 ... -0.000839 -0.005507  0.003634  0.002459
5  0.001821  0.013688  0.018115 ...  0.005934  0.010000 -0.004162 -0.014688
6 -0.027440  0.028131 -0.014278 ...  0.004697  0.024361 -0.005755  0.048847
7 -0.014816  0.016130 -0.001882 ...  0.012144 -0.003872 -0.000719  0.001645
8  0.005888 -0.009860  0.001139 ... -0.002774 -0.006480  0.000957  0.009245
9 -0.004017  0.017101 -0.013010 ... -0.001903 -0.016849  0.004784  0.005840
10 -0.009481 -0.014482  0.002465 ... -0.004491 -0.007019  0.000338  0.000206

      27      28      29      30      31      32
0  0.000008 -0.011299 -0.007783 -0.002697 -0.001588  0.003286
1  0.006223  0.015572  0.006066  0.003804 -0.001497  0.001694
2  0.008014  0.006076  0.002045  0.011653  0.021759 -0.014863
3 -0.004324 -0.006807  0.004571 -0.001963 -0.004812  0.011081
4 -0.014949 -0.007346 -0.006107  0.005664  0.003121  0.006553
5  0.008612  0.010872  0.000957  0.011934  0.005783 -0.006172
6 -0.071758  0.033442  0.089740 -0.034414  0.102270 -0.079146
7  0.008185 -0.006455  0.028015  0.018193  0.007483 -0.020963
8 -0.014730 -0.012512 -0.007769  0.007017  0.020758  0.010373
9 -0.011369 -0.020841 -0.006439 -0.007068  0.001706 -0.025332
10 -0.011186 -0.004594 -0.011036 -0.012607  0.001568  0.008820

[11 rows x 33 columns]
2014-10-23 00:00:00
4987
4982
4993
0      -0.011251

```

```

1    0.007939
2    0.001172
3   -0.001426
4   -0.003842
5    0.002117
6    0.017603
7   -0.003268
8    0.000694
9    0.004182
10   -0.018456

```

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	24	25	26	27	\
0	0.004948	0.009686	-0.002720	...	0.000409	-0.004447	0.004780	0.000008	
1	-0.000323	0.022564	0.002894	...	0.003697	-0.003491	0.005503	0.006223	
2	-0.003875	0.002492	-0.004800	...	0.006197	0.042180	-0.000961	0.008014	
3	0.004547	0.007367	0.002790	...	0.002330	0.017711	0.000185	-0.004324	
4	-0.000251	0.012228	-0.009852	...	-0.005507	0.003634	0.002459	-0.014949	
5	0.001821	0.013688	0.018115	...	0.010000	-0.004162	-0.014688	0.008612	
6	-0.027440	0.028131	-0.014278	...	0.024361	-0.005755	0.048847	-0.071758	
7	-0.014816	0.016130	-0.001882	...	-0.003872	-0.000719	0.001645	0.008185	
8	0.005888	-0.009860	0.001139	...	-0.006480	0.000957	0.009245	-0.014730	
9	-0.004017	0.017101	-0.013010	...	-0.016849	0.004784	0.005840	-0.011369	
10	-0.009481	-0.014482	0.002465	...	-0.007019	0.000338	0.000206	-0.011186	

	28	29	30	31	32	33
0	-0.011299	-0.007783	-0.002697	-0.001588	0.003286	-0.011251
1	0.015572	0.006066	0.003804	-0.001497	0.001694	0.007939
2	0.006076	0.002045	0.011653	0.021759	-0.014863	0.001172
3	-0.006807	0.004571	-0.001963	-0.004812	0.011081	-0.001426
4	-0.007346	-0.006107	0.005664	0.003121	0.006553	-0.003842
5	0.010872	0.000957	0.011934	0.005783	-0.006172	0.002117
6	0.033442	0.089740	-0.034414	0.102270	-0.079146	0.017603
7	-0.006455	0.028015	0.018193	0.007483	-0.020963	-0.003268
8	-0.012512	-0.007769	0.007017	0.020758	0.010373	0.000694
9	-0.020841	-0.006439	-0.007068	0.001706	-0.025332	0.004182

10 -0.004594 -0.011036 -0.012607 0.001568 0.008820 -0.018456

[11 rows x 34 columns]

2014-07-22 00:00:00

4921

4916

4927

0 0.009288

1 0.034197

2 0.022043

3 -0.006672

4 0.005677

5 -0.005239

6 -0.000862

7 -0.010963

8 0.007101

9 -0.012198

10 0.002708

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	25	26	27	28	\
0	0.004948	0.009686	-0.002720	...	-0.004447	0.004780	0.000008	-0.011299	
1	-0.000323	0.022564	0.002894	...	-0.003491	0.005503	0.006223	0.015572	
2	-0.003875	0.002492	-0.004800	...	0.042180	-0.000961	0.008014	0.006076	
3	0.004547	0.007367	0.002790	...	0.017711	0.000185	-0.004324	-0.006807	
4	-0.000251	0.012228	-0.009852	...	0.003634	0.002459	-0.014949	-0.007346	
5	0.001821	0.013688	0.018115	...	-0.004162	-0.014688	0.008612	0.010872	
6	-0.027440	0.028131	-0.014278	...	-0.005755	0.048847	-0.071758	0.033442	
7	-0.014816	0.016130	-0.001882	...	-0.000719	0.001645	0.008185	-0.006455	
8	0.005888	-0.009860	0.001139	...	0.000957	0.009245	-0.014730	-0.012512	
9	-0.004017	0.017101	-0.013010	...	0.004784	0.005840	-0.011369	-0.020841	
10	-0.009481	-0.014482	0.002465	...	0.000338	0.000206	-0.011186	-0.004594	

	29	30	31	32	33	34
0	-0.007783	-0.002697	-0.001588	0.003286	-0.011251	0.009288
1	0.006066	0.003804	-0.001497	0.001694	0.007939	0.034197

2	0.002045	0.011653	0.021759	-0.014863	0.001172	0.022043
3	0.004571	-0.001963	-0.004812	0.011081	-0.001426	-0.006672
4	-0.006107	0.005664	0.003121	0.006553	-0.003842	0.005677
5	0.000957	0.011934	0.005783	-0.006172	0.002117	-0.005239
6	0.089740	-0.034414	0.102270	-0.079146	0.017603	-0.000862
7	0.028015	0.018193	0.007483	-0.020963	-0.003268	-0.010963
8	-0.007769	0.007017	0.020758	0.010373	0.000694	0.007101
9	-0.006439	-0.007068	0.001706	-0.025332	0.004182	-0.012198
10	-0.011036	-0.012607	0.001568	0.008820	-0.018456	0.002708

[11 rows x 35 columns]

2014-04-24 00:00:00

4860

4855

4866

0	0.005864
1	-0.011017
2	-0.005525
3	-0.002840
4	-0.005289
5	0.002566
6	0.009351
7	0.020818
8	-0.013569
9	-0.005707
10	-0.009757

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	26	27	28	29	\
0	0.004948	0.009686	-0.002720	...	0.004780	0.000008	-0.011299	-0.007783	
1	-0.000323	0.022564	0.002894	...	0.005503	0.006223	0.015572	0.006066	
2	-0.003875	0.002492	-0.004800	...	-0.000961	0.008014	0.006076	0.002045	
3	0.004547	0.007367	0.002790	...	0.000185	-0.004324	-0.006807	0.004571	
4	-0.000251	0.012228	-0.009852	...	0.002459	-0.014949	-0.007346	-0.006107	
5	0.001821	0.013688	0.018115	...	-0.014688	0.008612	0.010872	0.000957	
6	-0.027440	0.028131	-0.014278	...	0.048847	-0.071758	0.033442	0.089740	

7	-0.014816	0.016130	-0.001882	...	0.001645	0.008185	-0.006455	0.028015
8	0.005888	-0.009860	0.001139	...	0.009245	-0.014730	-0.012512	-0.007769
9	-0.004017	0.017101	-0.013010	...	0.005840	-0.011369	-0.020841	-0.006439
10	-0.009481	-0.014482	0.002465	...	0.000206	-0.011186	-0.004594	-0.011036

	30	31	32	33	34	35
0	-0.002697	-0.001588	0.003286	-0.011251	0.009288	0.005864
1	0.003804	-0.001497	0.001694	0.007939	0.034197	-0.011017
2	0.011653	0.021759	-0.014863	0.001172	0.022043	-0.005525
3	-0.001963	-0.004812	0.011081	-0.001426	-0.006672	-0.002840
4	0.005664	0.003121	0.006553	-0.003842	0.005677	-0.005289
5	0.011934	0.005783	-0.006172	0.002117	-0.005239	0.002566
6	-0.034414	0.102270	-0.079146	0.017603	-0.000862	0.009351
7	0.018193	0.007483	-0.020963	-0.003268	-0.010963	0.020818
8	0.007017	0.020758	0.010373	0.000694	0.007101	-0.013569
9	-0.007068	0.001706	-0.025332	0.004182	-0.012198	-0.005707
10	-0.012607	0.001568	0.008820	-0.018456	0.002708	-0.009757

[11 rows x 36 columns]

2014-01-23 00:00:00

4797

4792

4803

0	0.022224
1	0.004883
2	-0.009930
3	-0.008546
4	-0.007210
5	0.012508
6	0.041674
7	-0.016314
8	0.000521
9	0.020962
10	-0.005811

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	



	7	8	9	...	27	28	29	30	\
0	0.004948	0.009686	-0.002720	...	0.000008	-0.011299	-0.007783	-0.002697	
1	-0.000323	0.022564	0.002894	...	0.006223	0.015572	0.006066	0.003804	
2	-0.003875	0.002492	-0.004800	...	0.008014	0.006076	0.002045	0.011653	
3	0.004547	0.007367	0.002790	...	-0.004324	-0.006807	0.004571	-0.001963	
4	-0.000251	0.012228	-0.009852	...	-0.014949	-0.007346	-0.006107	0.005664	
5	0.001821	0.013688	0.018115	...	0.008612	0.010872	0.000957	0.011934	
6	-0.027440	0.028131	-0.014278	...	-0.071758	0.033442	0.089740	-0.034414	
7	-0.014816	0.016130	-0.001882	...	0.008185	-0.006455	0.028015	0.018193	
8	0.005888	-0.009860	0.001139	...	-0.014730	-0.012512	-0.007769	0.007017	
9	-0.004017	0.017101	-0.013010	...	-0.011369	-0.020841	-0.006439	-0.007068	
10	-0.009481	-0.014482	0.002465	...	-0.011186	-0.004594	-0.011036	-0.012607	

	31	32	33	34	35	36
0	-0.001588	0.003286	-0.011251	0.009288	0.005864	0.022224
1	-0.001497	0.001694	0.007939	0.034197	-0.011017	0.004883
2	0.021759	-0.014863	0.001172	0.022043	-0.005525	-0.009930
3	-0.004812	0.011081	-0.001426	-0.006672	-0.002840	-0.008546
4	0.003121	0.006553	-0.003842	0.005677	-0.005289	-0.007210
5	0.005783	-0.006172	0.002117	-0.005239	0.002566	0.012508
6	0.102270	-0.079146	0.017603	-0.000862	0.009351	0.041674
7	0.007483	-0.020963	-0.003268	-0.010963	0.020818	-0.016314
8	0.020758	0.010373	0.000694	0.007101	-0.013569	0.000521
9	0.001706	-0.025332	0.004182	-0.012198	-0.005707	0.020962
10	0.001568	0.008820	-0.018456	0.002708	-0.009757	-0.005811

[11 rows x 37 columns]

2013-10-24 00:00:00

4736

4731

4742

0	0.001339
1	-0.005403
2	0.000767
3	-0.017455
4	-0.018989
5	-0.004443
6	0.055213
7	-0.005807
8	-0.006990
9	0.005439
10	0.000182

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	

4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128

	7	8	9	...	28	29	30	31	\
0	0.004948	0.009686	-0.002720	...	-0.011299	-0.007783	-0.002697	-0.001588	
1	-0.000323	0.022564	0.002894	...	0.015572	0.006066	0.003804	-0.001497	
2	-0.003875	0.002492	-0.004800	...	0.006076	0.002045	0.011653	0.021759	
3	0.004547	0.007367	0.002790	...	-0.006807	0.004571	-0.001963	-0.004812	
4	-0.000251	0.012228	-0.009852	...	-0.007346	-0.006107	0.005664	0.003121	
5	0.001821	0.013688	0.018115	...	0.010872	0.000957	0.011934	0.005783	
6	-0.027440	0.028131	-0.014278	...	0.033442	0.089740	-0.034414	0.102270	
7	-0.014816	0.016130	-0.001882	...	-0.006455	0.028015	0.018193	0.007483	
8	0.005888	-0.009860	0.001139	...	-0.012512	-0.007769	0.007017	0.020758	
9	-0.004017	0.017101	-0.013010	...	-0.020841	-0.006439	-0.007068	0.001706	
10	-0.009481	-0.014482	0.002465	...	-0.004594	-0.011036	-0.012607	0.001568	

	32	33	34	35	36	37
0	0.003286	-0.011251	0.009288	0.005864	0.022224	0.001339
1	0.001694	0.007939	0.034197	-0.011017	0.004883	-0.005403
2	-0.014863	0.001172	0.022043	-0.005525	-0.009930	0.000767
3	0.011081	-0.001426	-0.006672	-0.002840	-0.008546	-0.017455
4	0.006553	-0.003842	0.005677	-0.005289	-0.007210	-0.018989
5	-0.006172	0.002117	-0.005239	0.002566	0.012508	-0.004443
6	-0.079146	0.017603	-0.000862	0.009351	0.041674	0.055213
7	-0.020963	-0.003268	-0.010963	0.020818	-0.016314	-0.005807
8	0.010373	0.000694	0.007101	-0.013569	0.000521	-0.006990
9	-0.025332	0.004182	-0.012198	-0.005707	0.020962	0.005439
10	0.008820	-0.018456	0.002708	-0.009757	-0.005811	0.000182

[11 rows x 38 columns]

2013-07-18 00:00:00

4667

4662

4673

0	0.014976
1	-0.003647
2	0.012643
3	0.006473
4	-0.017386
5	-0.013428
6	-0.115605
7	0.017393
8	-0.004083

```

9      0.008211
10     -0.020391
Name: exret, dtype: float64
      0      1      2      3      4      5      6  \
0 -0.000978 -0.007344 -0.006861  0.000982 -0.005951 -0.004334 -0.006824
1  0.006712 -0.001798  0.004662  0.004334  0.011936 -0.006324 -0.000795
2 -0.003327  0.006555 -0.000062 -0.004628  0.005334  0.007902  0.014828
3 -0.008816  0.001556 -0.007584  0.003596  0.000447 -0.004076  0.002191
4  0.016825  0.009306 -0.007191  0.018715 -0.001623 -0.008080 -0.004523
5 -0.002057 -0.002475 -0.015231 -0.009257 -0.014416  0.004606 -0.003971
6 -0.001515 -0.069769  0.040696  0.046011  0.029990  0.047166 -0.000931
7 -0.005726 -0.013674  0.016407 -0.002114  0.015933 -0.006178 -0.003228
8  0.019706  0.015594  0.001457 -0.005528  0.003734  0.020465 -0.000144
9 -0.001850 -0.008402 -0.006901  0.019368 -0.010062 -0.008585  0.001527
10 -0.008993 -0.012958 -0.004812 -0.014293 -0.014002  0.007735 -0.000128

      7      8      9  ...      29      30      31      32  \
0  0.004948  0.009686 -0.002720 ... -0.007783 -0.002697 -0.001588  0.003286
1 -0.000323  0.022564  0.002894 ...  0.006066  0.003804 -0.001497  0.001694
2 -0.003875  0.002492 -0.004800 ...  0.002045  0.011653  0.021759 -0.014863
3  0.004547  0.007367  0.002790 ...  0.004571 -0.001963 -0.004812  0.011081
4 -0.000251  0.012228 -0.009852 ... -0.006107  0.005664  0.003121  0.006553
5  0.001821  0.013688  0.018115 ...  0.000957  0.011934  0.005783 -0.006172
6 -0.027440  0.028131 -0.014278 ...  0.089740 -0.034414  0.102270 -0.079146
7 -0.014816  0.016130 -0.001882 ...  0.028015  0.018193  0.007483 -0.020963
8  0.005888 -0.009860  0.001139 ... -0.007769  0.007017  0.020758  0.010373
9 -0.004017  0.017101 -0.013010 ... -0.006439 -0.007068  0.001706 -0.025332
10 -0.009481 -0.014482  0.002465 ... -0.011036 -0.012607  0.001568  0.008820

      33      34      35      36      37      38
0 -0.011251  0.009288  0.005864  0.022224  0.001339  0.014976
1  0.007939  0.034197 -0.011017  0.004883 -0.005403 -0.003647
2  0.001172  0.022043 -0.005525 -0.009930  0.000767  0.012643
3 -0.001426 -0.006672 -0.002840 -0.008546 -0.017455  0.006473
4 -0.003842  0.005677 -0.005289 -0.007210 -0.018989 -0.017386
5  0.002117 -0.005239  0.002566  0.012508 -0.004443 -0.013428
6  0.017603 -0.000862  0.009351  0.041674  0.055213 -0.115605
7 -0.003268 -0.010963  0.020818 -0.016314 -0.005807  0.017393
8  0.000694  0.007101 -0.013569  0.000521 -0.006990 -0.004083
9  0.004182 -0.012198 -0.005707  0.020962  0.005439  0.008211
10 -0.018456  0.002708 -0.009757 -0.005811  0.000182 -0.020391

[11 rows x 39 columns]
2013-04-18 00:00:00
4604
4599
4610
0      -0.047806

```

```

1    -0.002347
2     0.019493
3    -0.004548
4     0.009495
5     0.005313
6     0.025192
7     0.030945
8    -0.017880
9     0.037902
10    0.001633

```

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	30	31	32	33	\
0	0.004948	0.009686	-0.002720	...	-0.002697	-0.001588	0.003286	-0.011251	
1	-0.000323	0.022564	0.002894	...	0.003804	-0.001497	0.001694	0.007939	
2	-0.003875	0.002492	-0.004800	...	0.011653	0.021759	-0.014863	0.001172	
3	0.004547	0.007367	0.002790	...	-0.001963	-0.004812	0.011081	-0.001426	
4	-0.000251	0.012228	-0.009852	...	0.005664	0.003121	0.006553	-0.003842	
5	0.001821	0.013688	0.018115	...	0.011934	0.005783	-0.006172	0.002117	
6	-0.027440	0.028131	-0.014278	...	-0.034414	0.102270	-0.079146	0.017603	
7	-0.014816	0.016130	-0.001882	...	0.018193	0.007483	-0.020963	-0.003268	
8	0.005888	-0.009860	0.001139	...	0.007017	0.020758	0.010373	0.000694	
9	-0.004017	0.017101	-0.013010	...	-0.007068	0.001706	-0.025332	0.004182	
10	-0.009481	-0.014482	0.002465	...	-0.012607	0.001568	0.008820	-0.018456	

	34	35	36	37	38	39
0	0.009288	0.005864	0.022224	0.001339	0.014976	-0.047806
1	0.034197	-0.011017	0.004883	-0.005403	-0.003647	-0.002347
2	0.022043	-0.005525	-0.009930	0.000767	0.012643	0.019493
3	-0.006672	-0.002840	-0.008546	-0.017455	0.006473	-0.004548
4	0.005677	-0.005289	-0.007210	-0.018989	-0.017386	0.009495
5	-0.005239	0.002566	0.012508	-0.004443	-0.013428	0.005313
6	-0.000862	0.009351	0.041674	0.055213	-0.115605	0.025192
7	-0.010963	0.020818	-0.016314	-0.005807	0.017393	0.030945
8	0.007101	-0.013569	0.000521	-0.006990	-0.004083	-0.017880
9	-0.012198	-0.005707	0.020962	0.005439	0.008211	0.037902

10 0.002708 -0.009757 -0.005811 0.000182 -0.020391 0.001633

[11 rows x 40 columns]

2013-01-24 00:00:00

4546

4541

4552

0 -0.006445

1 0.002123

2 -0.003403

3 -0.008098

4 0.015436

5 0.000717

6 0.003603

7 0.002925

8 -0.001523

9 -0.001812

10 -0.011799

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	31	32	33	34	\
0	0.004948	0.009686	-0.002720	...	-0.001588	0.003286	-0.011251	0.009288	
1	-0.000323	0.022564	0.002894	...	-0.001497	0.001694	0.007939	0.034197	
2	-0.003875	0.002492	-0.004800	...	0.021759	-0.014863	0.001172	0.022043	
3	0.004547	0.007367	0.002790	...	-0.004812	0.011081	-0.001426	-0.006672	
4	-0.000251	0.012228	-0.009852	...	0.003121	0.006553	-0.003842	0.005677	
5	0.001821	0.013688	0.018115	...	0.005783	-0.006172	0.002117	-0.005239	
6	-0.027440	0.028131	-0.014278	...	0.102270	-0.079146	0.017603	-0.000862	
7	-0.014816	0.016130	-0.001882	...	0.007483	-0.020963	-0.003268	-0.010963	
8	0.005888	-0.009860	0.001139	...	0.020758	0.010373	0.000694	0.007101	
9	-0.004017	0.017101	-0.013010	...	0.001706	-0.025332	0.004182	-0.012198	
10	-0.009481	-0.014482	0.002465	...	0.001568	0.008820	-0.018456	0.002708	

	35	36	37	38	39	40
0	0.005864	0.022224	0.001339	0.014976	-0.047806	-0.006445
1	-0.011017	0.004883	-0.005403	-0.003647	-0.002347	0.002123

```

2 -0.005525 -0.009930 0.000767 0.012643 0.019493 -0.003403
3 -0.002840 -0.008546 -0.017455 0.006473 -0.004548 -0.008098
4 -0.005289 -0.007210 -0.018989 -0.017386 0.009495 0.015436
5 0.002566 0.012508 -0.004443 -0.013428 0.005313 0.000717
6 0.009351 0.041674 0.055213 -0.115605 0.025192 0.003603
7 0.020818 -0.016314 -0.005807 0.017393 0.030945 0.002925
8 -0.013569 0.000521 -0.006990 -0.004083 -0.017880 -0.001523
9 -0.005707 0.020962 0.005439 0.008211 0.037902 -0.001812
10 -0.009757 -0.005811 0.000182 -0.020391 0.001633 -0.011799

```

[11 rows x 41 columns]

2012-10-18 00:00:00

4482

4477

4488

```

0 -0.001231
1 0.011602
2 0.002539
3 -0.010948
4 -0.000726
5 -0.000598
6 -0.012581
7 -0.022786
8 0.016230
9 -0.002262
10 -0.003712

```

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	32	33	34	35	\
0	0.004948	0.009686	-0.002720	...	0.003286	-0.011251	0.009288	0.005864	
1	-0.000323	0.022564	0.002894	...	0.001694	0.007939	0.034197	-0.011017	
2	-0.003875	0.002492	-0.004800	...	-0.014863	0.001172	0.022043	-0.005525	
3	0.004547	0.007367	0.002790	...	0.011081	-0.001426	-0.006672	-0.002840	
4	-0.000251	0.012228	-0.009852	...	0.006553	-0.003842	0.005677	-0.005289	
5	0.001821	0.013688	0.018115	...	-0.006172	0.002117	-0.005239	0.002566	
6	-0.027440	0.028131	-0.014278	...	-0.079146	0.017603	-0.000862	0.009351	

7	-0.014816	0.016130	-0.001882	...	-0.020963	-0.003268	-0.010963	0.020818
8	0.005888	-0.009860	0.001139	...	0.010373	0.000694	0.007101	-0.013569
9	-0.004017	0.017101	-0.013010	...	-0.025332	0.004182	-0.012198	-0.005707
10	-0.009481	-0.014482	0.002465	...	0.008820	-0.018456	0.002708	-0.009757

	36	37	38	39	40	41
0	0.022224	0.001339	0.014976	-0.047806	-0.006445	-0.001231
1	0.004883	-0.005403	-0.003647	-0.002347	0.002123	0.011602
2	-0.009930	0.000767	0.012643	0.019493	-0.003403	0.002539
3	-0.008546	-0.017455	0.006473	-0.004548	-0.008098	-0.010948
4	-0.007210	-0.018989	-0.017386	0.009495	0.015436	-0.000726
5	0.012508	-0.004443	-0.013428	0.005313	0.000717	-0.000598
6	0.041674	0.055213	-0.115605	0.025192	0.003603	-0.012581
7	-0.016314	-0.005807	0.017393	0.030945	0.002925	-0.022786
8	0.000521	-0.006990	-0.004083	-0.017880	-0.001523	0.016230
9	0.020962	0.005439	0.008211	0.037902	-0.001812	-0.002262
10	-0.005811	0.000182	-0.020391	0.001633	-0.011799	-0.003712

[11 rows x 42 columns]

2012-07-19 00:00:00

4418

4413

4424

0	-0.017880
1	0.010048
2	0.004016
3	0.000063
4	0.019955
5	0.004507
6	-0.007871
7	-0.018979
8	0.004601
9	-0.010664
10	-0.005095

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	33	34	35	36	\
0	0.004948	0.009686	-0.002720	...	-0.011251	0.009288	0.005864	0.022224	
1	-0.000323	0.022564	0.002894	...	0.007939	0.034197	-0.011017	0.004883	
2	-0.003875	0.002492	-0.004800	...	0.001172	0.022043	-0.005525	-0.009930	
3	0.004547	0.007367	0.002790	...	-0.001426	-0.006672	-0.002840	-0.008546	
4	-0.000251	0.012228	-0.009852	...	-0.003842	0.005677	-0.005289	-0.007210	
5	0.001821	0.013688	0.018115	...	0.002117	-0.005239	0.002566	0.012508	
6	-0.027440	0.028131	-0.014278	...	0.017603	-0.000862	0.009351	0.041674	
7	-0.014816	0.016130	-0.001882	...	-0.003268	-0.010963	0.020818	-0.016314	
8	0.005888	-0.009860	0.001139	...	0.000694	0.007101	-0.013569	0.000521	
9	-0.004017	0.017101	-0.013010	...	0.004182	-0.012198	-0.005707	0.020962	
10	-0.009481	-0.014482	0.002465	...	-0.018456	0.002708	-0.009757	-0.005811	

	37	38	39	40	41	42
0	0.001339	0.014976	-0.047806	-0.006445	-0.001231	-0.017880
1	-0.005403	-0.003647	-0.002347	0.002123	0.011602	0.010048
2	0.000767	0.012643	0.019493	-0.003403	0.002539	0.004016
3	-0.017455	0.006473	-0.004548	-0.008098	-0.010948	0.000063
4	-0.018989	-0.017386	0.009495	0.015436	-0.000726	0.019955
5	-0.004443	-0.013428	0.005313	0.000717	-0.000598	0.004507
6	0.055213	-0.115605	0.025192	0.003603	-0.012581	-0.007871
7	-0.005807	0.017393	0.030945	0.002925	-0.022786	-0.018979
8	-0.006990	-0.004083	-0.017880	-0.001523	0.016230	0.004601
9	0.005439	0.008211	0.037902	-0.001812	-0.002262	-0.010664
10	0.000182	-0.020391	0.001633	-0.011799	-0.003712	-0.005095

[11 rows x 43 columns]

2012-04-19 00:00:00

4355

4350

4361

0	0.006978
1	0.006987
2	0.009267
3	-0.003903
4	-0.005487
5	0.001760
6	0.044300
7	-0.000846
8	-0.009906
9	-0.004873
10	-0.009475

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	



4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128

	7	8	9	...	34	35	36	37	\
0	0.004948	0.009686	-0.002720	...	0.009288	0.005864	0.022224	0.001339	
1	-0.000323	0.022564	0.002894	...	0.034197	-0.011017	0.004883	-0.005403	
2	-0.003875	0.002492	-0.004800	...	0.022043	-0.005525	-0.009930	0.000767	
3	0.004547	0.007367	0.002790	...	-0.006672	-0.002840	-0.008546	-0.017455	
4	-0.000251	0.012228	-0.009852	...	0.005677	-0.005289	-0.007210	-0.018989	
5	0.001821	0.013688	0.018115	...	-0.005239	0.002566	0.012508	-0.004443	
6	-0.027440	0.028131	-0.014278	...	-0.000862	0.009351	0.041674	0.055213	
7	-0.014816	0.016130	-0.001882	...	-0.010963	0.020818	-0.016314	-0.005807	
8	0.005888	-0.009860	0.001139	...	0.007101	-0.013569	0.000521	-0.006990	
9	-0.004017	0.017101	-0.013010	...	-0.012198	-0.005707	0.020962	0.005439	
10	-0.009481	-0.014482	0.002465	...	0.002708	-0.009757	-0.005811	0.000182	

	38	39	40	41	42	43
0	0.014976	-0.047806	-0.006445	-0.001231	-0.017880	0.006978
1	-0.003647	-0.002347	0.002123	0.011602	0.010048	0.006987
2	0.012643	0.019493	-0.003403	0.002539	0.004016	0.009267
3	0.006473	-0.004548	-0.008098	-0.010948	0.000063	-0.003903
4	-0.017386	0.009495	0.015436	-0.000726	0.019955	-0.005487
5	-0.013428	0.005313	0.000717	-0.000598	0.004507	0.001760
6	-0.115605	0.025192	0.003603	-0.012581	-0.007871	0.044300
7	0.017393	0.030945	0.002925	-0.022786	-0.018979	-0.000846
8	-0.004083	-0.017880	-0.001523	0.016230	0.004601	-0.009906
9	0.008211	0.037902	-0.001812	-0.002262	-0.010664	-0.004873
10	-0.020391	0.001633	-0.011799	-0.003712	-0.005095	-0.009475

[11 rows x 44 columns]

2012-01-19 00:00:00

4292

4287

4298

0	-0.004620
1	0.007764
2	0.013876
3	-0.003199
4	-0.012169
5	-0.008835
6	0.055874
7	0.000202
8	-0.012092

9 -0.001181

10 0.003724

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	35	36	37	38	\
0	0.004948	0.009686	-0.002720	...	0.005864	0.022224	0.001339	0.014976	
1	-0.000323	0.022564	0.002894	...	-0.011017	0.004883	-0.005403	-0.003647	
2	-0.003875	0.002492	-0.004800	...	-0.005525	-0.009930	0.000767	0.012643	
3	0.004547	0.007367	0.002790	...	-0.002840	-0.008546	-0.017455	0.006473	
4	-0.000251	0.012228	-0.009852	...	-0.005289	-0.007210	-0.018989	-0.017386	
5	0.001821	0.013688	0.018115	...	0.002566	0.012508	-0.004443	-0.013428	
6	-0.027440	0.028131	-0.014278	...	0.009351	0.041674	0.055213	-0.115605	
7	-0.014816	0.016130	-0.001882	...	0.020818	-0.016314	-0.005807	0.017393	
8	0.005888	-0.009860	0.001139	...	-0.013569	0.000521	-0.006990	-0.004083	
9	-0.004017	0.017101	-0.013010	...	-0.005707	0.020962	0.005439	0.008211	
10	-0.009481	-0.014482	0.002465	...	-0.009757	-0.005811	0.000182	-0.020391	

	39	40	41	42	43	44
0	-0.047806	-0.006445	-0.001231	-0.017880	0.006978	-0.004620
1	-0.002347	0.002123	0.011602	0.010048	0.006987	0.007764
2	0.019493	-0.003403	0.002539	0.004016	0.009267	0.013876
3	-0.004548	-0.008098	-0.010948	0.000063	-0.003903	-0.003199
4	0.009495	0.015436	-0.000726	0.019955	-0.005487	-0.012169
5	0.005313	0.000717	-0.000598	0.004507	0.001760	-0.008835
6	0.025192	0.003603	-0.012581	-0.007871	0.044300	0.055874
7	0.030945	0.002925	-0.022786	-0.018979	-0.000846	0.000202
8	-0.017880	-0.001523	0.016230	0.004601	-0.009906	-0.012092
9	0.037902	-0.001812	-0.002262	-0.010664	-0.004873	-0.001181
10	0.001633	-0.011799	-0.003712	-0.005095	-0.009475	0.003724

[11 rows x 45 columns]

2011-10-20 00:00:00

4231

4226

4237

0 0.011134

```

1  -0.014069
2   0.008736
3  -0.008187
4   0.006058
5  -0.007871
6  -0.014371
7  -0.011769
8   0.006069
9  -0.018742
10 -0.009470

```

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	36	37	38	39	\
0	0.004948	0.009686	-0.002720	...	0.022224	0.001339	0.014976	-0.047806	
1	-0.000323	0.022564	0.002894	...	0.004883	-0.005403	-0.003647	-0.002347	
2	-0.003875	0.002492	-0.004800	...	-0.009930	0.000767	0.012643	0.019493	
3	0.004547	0.007367	0.002790	...	-0.008546	-0.017455	0.006473	-0.004548	
4	-0.000251	0.012228	-0.009852	...	-0.007210	-0.018989	-0.017386	0.009495	
5	0.001821	0.013688	0.018115	...	0.012508	-0.004443	-0.013428	0.005313	
6	-0.027440	0.028131	-0.014278	...	0.041674	0.055213	-0.115605	0.025192	
7	-0.014816	0.016130	-0.001882	...	-0.016314	-0.005807	0.017393	0.030945	
8	0.005888	-0.009860	0.001139	...	0.000521	-0.006990	-0.004083	-0.017880	
9	-0.004017	0.017101	-0.013010	...	0.020962	0.005439	0.008211	0.037902	
10	-0.009481	-0.014482	0.002465	...	-0.005811	0.000182	-0.020391	0.001633	

	40	41	42	43	44	45
0	-0.006445	-0.001231	-0.017880	0.006978	-0.004620	0.011134
1	0.002123	0.011602	0.010048	0.006987	0.007764	-0.014069
2	-0.003403	0.002539	0.004016	0.009267	0.013876	0.008736
3	-0.008098	-0.010948	0.000063	-0.003903	-0.003199	-0.008187
4	0.015436	-0.000726	0.019955	-0.005487	-0.012169	0.006058
5	0.000717	-0.000598	0.004507	0.001760	-0.008835	-0.007871
6	0.003603	-0.012581	-0.007871	0.044300	0.055874	-0.014371
7	0.002925	-0.022786	-0.018979	-0.000846	0.000202	-0.011769
8	-0.001523	0.016230	0.004601	-0.009906	-0.012092	0.006069
9	-0.001812	-0.002262	-0.010664	-0.004873	-0.001181	-0.018742

10 -0.011799 -0.003712 -0.005095 -0.009475 0.003724 -0.009470

[11 rows x 46 columns]

2011-07-21 00:00:00

4167

4162

4173

0 0.000707

1 0.006158

2 0.001035

3 0.019419

4 -0.016758

5 -0.012068

6 0.014959

7 0.019446

8 0.010196

9 -0.006401

10 0.017504

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	37	38	39	40	\
0	0.004948	0.009686	-0.002720	...	0.001339	0.014976	-0.047806	-0.006445	
1	-0.000323	0.022564	0.002894	...	-0.005403	-0.003647	-0.002347	0.002123	
2	-0.003875	0.002492	-0.004800	...	0.000767	0.012643	0.019493	-0.003403	
3	0.004547	0.007367	0.002790	...	-0.017455	0.006473	-0.004548	-0.008098	
4	-0.000251	0.012228	-0.009852	...	-0.018989	-0.017386	0.009495	0.015436	
5	0.001821	0.013688	0.018115	...	-0.004443	-0.013428	0.005313	0.000717	
6	-0.027440	0.028131	-0.014278	...	0.055213	-0.115605	0.025192	0.003603	
7	-0.014816	0.016130	-0.001882	...	-0.005807	0.017393	0.030945	0.002925	
8	0.005888	-0.009860	0.001139	...	-0.006990	-0.004083	-0.017880	-0.001523	
9	-0.004017	0.017101	-0.013010	...	0.005439	0.008211	0.037902	-0.001812	
10	-0.009481	-0.014482	0.002465	...	0.000182	-0.020391	0.001633	-0.011799	

	41	42	43	44	45	46
0	-0.001231	-0.017880	0.006978	-0.004620	0.011134	0.000707
1	0.011602	0.010048	0.006987	0.007764	-0.014069	0.006158

```

2  0.002539  0.004016  0.009267  0.013876  0.008736  0.001035
3 -0.010948  0.000063 -0.003903 -0.003199 -0.008187  0.019419
4 -0.000726  0.019955 -0.005487 -0.012169  0.006058 -0.016758
5 -0.000598  0.004507  0.001760 -0.008835 -0.007871 -0.012068
6 -0.012581 -0.007871  0.044300  0.055874 -0.014371  0.014959
7 -0.022786 -0.018979 -0.000846  0.000202 -0.011769  0.019446
8  0.016230  0.004601 -0.009906 -0.012092  0.006069  0.010196
9 -0.002262 -0.010664 -0.004873 -0.001181 -0.018742 -0.006401
10 -0.003712 -0.005095 -0.009475  0.003724 -0.009470  0.017504

```

[11 rows x 47 columns]

2011-04-28 00:00:00

4109

4104

4115

```

0    0.010740
1   -0.014594
2    0.005119
3    0.013668
4    0.001005
5    0.008954
6   -0.031878
7   -0.008278
8    0.009225
9    0.016541
10  -0.001291

```

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	38	39	40	41	\
0	0.004948	0.009686	-0.002720	...	0.014976	-0.047806	-0.006445	-0.001231	
1	-0.000323	0.022564	0.002894	...	-0.003647	-0.002347	0.002123	0.011602	
2	-0.003875	0.002492	-0.004800	...	0.012643	0.019493	-0.003403	0.002539	
3	0.004547	0.007367	0.002790	...	0.006473	-0.004548	-0.008098	-0.010948	
4	-0.000251	0.012228	-0.009852	...	-0.017386	0.009495	0.015436	-0.000726	
5	0.001821	0.013688	0.018115	...	-0.013428	0.005313	0.000717	-0.000598	
6	-0.027440	0.028131	-0.014278	...	-0.115605	0.025192	0.003603	-0.012581	

7	-0.014816	0.016130	-0.001882	...	0.017393	0.030945	0.002925	-0.022786
8	0.005888	-0.009860	0.001139	...	-0.004083	-0.017880	-0.001523	0.016230
9	-0.004017	0.017101	-0.013010	...	0.008211	0.037902	-0.001812	-0.002262
10	-0.009481	-0.014482	0.002465	...	-0.020391	0.001633	-0.011799	-0.003712

	42	43	44	45	46	47
0	-0.017880	0.006978	-0.004620	0.011134	0.000707	0.010740
1	0.010048	0.006987	0.007764	-0.014069	0.006158	-0.014594
2	0.004016	0.009267	0.013876	0.008736	0.001035	0.005119
3	0.000063	-0.003903	-0.003199	-0.008187	0.019419	0.013668
4	0.019955	-0.005487	-0.012169	0.006058	-0.016758	0.001005
5	0.004507	0.001760	-0.008835	-0.007871	-0.012068	0.008954
6	-0.007871	0.044300	0.055874	-0.014371	0.014959	-0.031878
7	-0.018979	-0.000846	0.000202	-0.011769	0.019446	-0.008278
8	0.004601	-0.009906	-0.012092	0.006069	0.010196	0.009225
9	-0.010664	-0.004873	-0.001181	-0.018742	-0.006401	0.016541
10	-0.005095	-0.009475	0.003724	-0.009470	0.017504	-0.001291

[11 rows x 48 columns]

2011-01-27 00:00:00

4046

4041

4052

0	-0.002920
1	-0.014054
2	0.007012
3	0.002203
4	0.007379
5	0.000882
6	-0.020942
7	-0.008384
8	-0.007317
9	0.000936
10	-0.012733

Name: exret, dtype: float64

	0	1	2	3	4	5	6	\
0	-0.000978	-0.007344	-0.006861	0.000982	-0.005951	-0.004334	-0.006824	
1	0.006712	-0.001798	0.004662	0.004334	0.011936	-0.006324	-0.000795	
2	-0.003327	0.006555	-0.000062	-0.004628	0.005334	0.007902	0.014828	
3	-0.008816	0.001556	-0.007584	0.003596	0.000447	-0.004076	0.002191	
4	0.016825	0.009306	-0.007191	0.018715	-0.001623	-0.008080	-0.004523	
5	-0.002057	-0.002475	-0.015231	-0.009257	-0.014416	0.004606	-0.003971	
6	-0.001515	-0.069769	0.040696	0.046011	0.029990	0.047166	-0.000931	
7	-0.005726	-0.013674	0.016407	-0.002114	0.015933	-0.006178	-0.003228	
8	0.019706	0.015594	0.001457	-0.005528	0.003734	0.020465	-0.000144	
9	-0.001850	-0.008402	-0.006901	0.019368	-0.010062	-0.008585	0.001527	
10	-0.008993	-0.012958	-0.004812	-0.014293	-0.014002	0.007735	-0.000128	

	7	8	9	...	39	40	41	42	\
0	0.004948	0.009686	-0.002720	...	-0.047806	-0.006445	-0.001231	-0.017880	
1	-0.000323	0.022564	0.002894	...	-0.002347	0.002123	0.011602	0.010048	
2	-0.003875	0.002492	-0.004800	...	0.019493	-0.003403	0.002539	0.004016	
3	0.004547	0.007367	0.002790	...	-0.004548	-0.008098	-0.010948	0.000063	
4	-0.000251	0.012228	-0.009852	...	0.009495	0.015436	-0.000726	0.019955	
5	0.001821	0.013688	0.018115	...	0.005313	0.000717	-0.000598	0.004507	
6	-0.027440	0.028131	-0.014278	...	0.025192	0.003603	-0.012581	-0.007871	
7	-0.014816	0.016130	-0.001882	...	0.030945	0.002925	-0.022786	-0.018979	
8	0.005888	-0.009860	0.001139	...	-0.017880	-0.001523	0.016230	0.004601	
9	-0.004017	0.017101	-0.013010	...	0.037902	-0.001812	-0.002262	-0.010664	
10	-0.009481	-0.014482	0.002465	...	0.001633	-0.011799	-0.003712	-0.005095	

	43	44	45	46	47	48
0	0.006978	-0.004620	0.011134	0.000707	0.010740	-0.002920
1	0.006987	0.007764	-0.014069	0.006158	-0.014594	-0.014054
2	0.009267	0.013876	0.008736	0.001035	0.005119	0.007012
3	-0.003903	-0.003199	-0.008187	0.019419	0.013668	0.002203
4	-0.005487	-0.012169	0.006058	-0.016758	0.001005	0.007379
5	0.001760	-0.008835	-0.007871	-0.012068	0.008954	0.000882
6	0.044300	0.055874	-0.014371	0.014959	-0.031878	-0.020942
7	-0.000846	0.000202	-0.011769	0.019446	-0.008278	-0.008384
8	-0.009906	-0.012092	0.006069	0.010196	0.009225	-0.007317
9	-0.004873	-0.001181	-0.018742	-0.006401	0.016541	0.000936
10	-0.009475	0.003724	-0.009470	0.017504	-0.001291	-0.012733

[11 rows x 49 columns]

```
[12]: #Average Abnormal Return
aar=[]
#Cumulative Abnormal return
car=[]
sum=0
```

```
[13]: for i in range(2*window+1):
    print(i)
    print(port.loc[i,:].mean())
    temp=port.loc[i,:].mean()
    sum=sum+temp
    aar.append(temp)
    car.append(sum)
    print(temp)
    print(aar[i])
    print(car[i])
    #ttest to see if event day has mean=0 (null hypothesis)
    print(sst.ttest_1samp(a=port.loc[i,:], popmean=0))
    #There is a lot of noise, possibly if we sorted out
```

```
#bad/good events we would get more meaningful data
```

```
0
-0.0006036191201796403
-0.0006036191201796403
-0.0006036191201796403
-0.0006036191201796403
Ttest_1sampResult(statistic=-0.40992105210979807, pvalue=0.683687675328333)
1
0.0024563045586215785
0.0024563045586215785
0.0024563045586215785
0.0018526854384419383
Ttest_1sampResult(statistic=1.7675733759565404, pvalue=0.08348869319436134)
2
0.004349107742223865
0.004349107742223865
0.004349107742223865
0.006201793180665804
Ttest_1sampResult(statistic=3.1624335042334923, pvalue=0.0027119500205198266)
3
-0.0001038314797962898
-0.0001038314797962898
-0.0001038314797962898
0.006097961700869514
Ttest_1sampResult(statistic=-0.07740428767026797, pvalue=0.9386236890587256)
4
-0.0017720294336871297
-0.0017720294336871297
-0.0017720294336871297
0.004325932267182385
Ttest_1sampResult(statistic=-1.220467853295827, pvalue=0.2282495417890027)
5
0.0016812177940551947
0.0016812177940551947
0.0016812177940551947
0.006007150061237579
Ttest_1sampResult(statistic=1.1772747339826315, pvalue=0.24489055339386837)
6
0.008501858764446762
0.008501858764446762
0.008501858764446762
0.01450900882568434
Ttest_1sampResult(statistic=1.4468100955438077, pvalue=0.15444943003139902)
7
0.0006366746744504063
0.0006366746744504063
```



```

0.0006366746744504063
0.015145683500134746
Ttest_1sampResult(statistic=0.35100413621312204, pvalue=0.7271212072958171)
8
0.0019878348046307713
0.0019878348046307713
0.0019878348046307713
0.01713351830476552
Ttest_1sampResult(statistic=1.2382219189932622, pvalue=0.22165574016858713)
9
-0.00043774428019971673
-0.00043774428019971673
-0.00043774428019971673
0.0166957740245658
Ttest_1sampResult(statistic=-0.24486886908796224, pvalue=0.807601797260333)
10
-0.00400145711141524
-0.00400145711141524
-0.00400145711141524
0.012694316913150561
Ttest_1sampResult(statistic=-2.973479859815078, pvalue=0.004594984897592899)

```

```

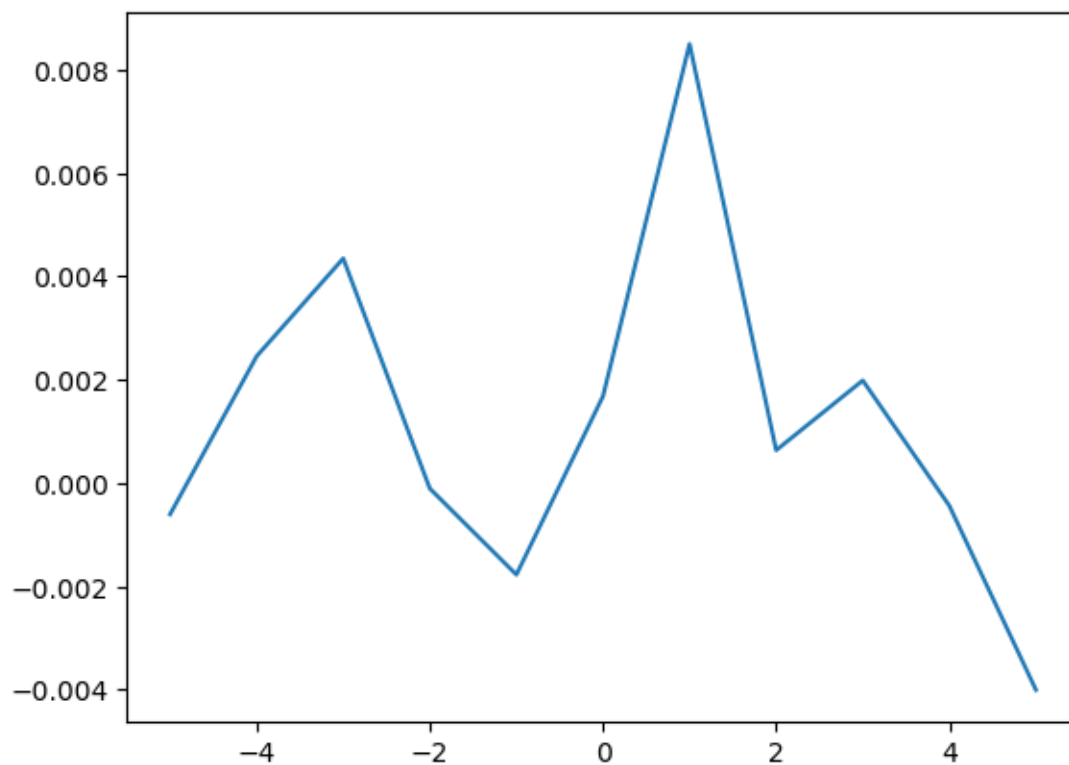
[17]: #Data is ready, time to plot
      #Creating x-axis
      x=range(0-window,1+window,1)

```

```

[18]: #Average Abnormal Return Graph
      plt.plot(x,aar)
      plt.show()

```



```
[21]: #Cumulative Abnormal Return Graph
plt.plot(x,car)
plt.xlabel('Event Window')
plt.ylabel('Cumulative Abnormal Return(CAR)')
plt.show()
```

