In [17]: runfile('E:/GitWorkSpace/v-ratio-momentum-and-ladder/portfolio.py', wdir='E:/
GitWorkSpace/v-ratio-momentum-and-ladder')
Reloaded modules: WhiteRealityCheckFor1, computation_helper, data_helper,
rotational_momentum
requested data history already exists!

==================== (10, '1W-FRI-100%', 1, 1, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 135.152523
CAGR = 30.330000
Sharpe Ratio = 1.116000
Volatility= 0.284000
number of records for the series after dropping na: 1017
average return 0.002585
[-0.00279746 0.00283196]
Reject Ho = The population distribution of rule returns has an expected value of zero or
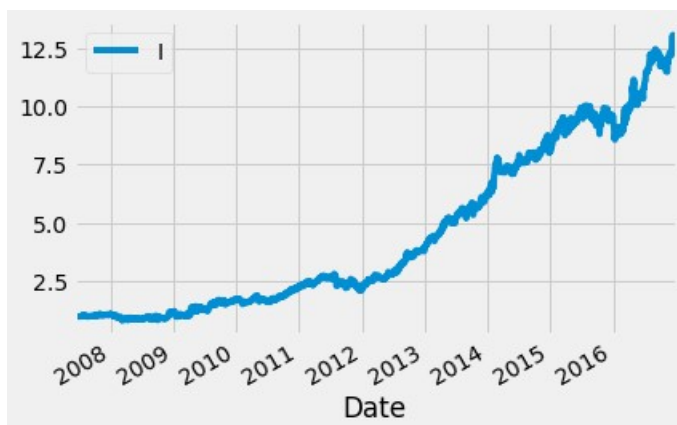less (because p_value is small enough)
p_value:
0.036579999999999946

==================== (10, '1W-FRI-100%', 1, 1, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
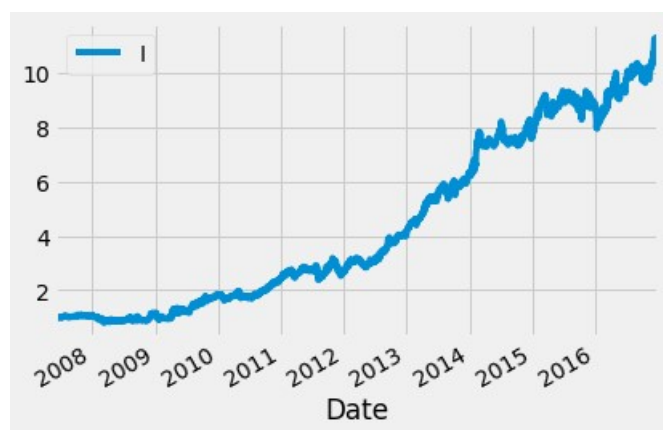 vratio = t/(lag*b);

```
TotaAnnReturn = 120.519492
CAGR = 28.960000
Sharpe Ratio = 1.073000
Volatility= 0.285000
number of records for the series after dropping na: 1017
average return 0.002274
[-0.00284417  0.00284428]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.05888000000000004
```

=================== (10, '1W-FRI-100%', 1, 2, 1, 0, 0) ===================
```
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
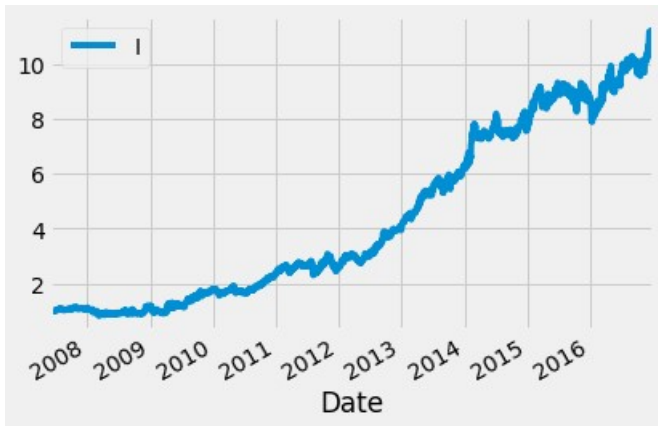


```
TotaAnnReturn = 104.481398
CAGR = 27.280000
Sharpe Ratio = 1.042000
Volatility= 0.279000
number of records for the series after dropping na: 1017
average return 0.002331
[-0.00266244  0.00270453]
Reject Ho = The population distribution of rule returns has an expected value of zero or
less (because p_value is small enough)
p_value:
0.04490000000000005
```

=================== (10, '1W-FRI-100%', 1, 2, 2, 0, 0) ===================
```
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```

TotaAnnReturn = 103.604202
CAGR = 27.180000
Sharpe Ratio = 1.036000
Volatility= 0.280000
number of records for the series after dropping na: 1017
average return 0.002190
[-0.00269998 0.00276426]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
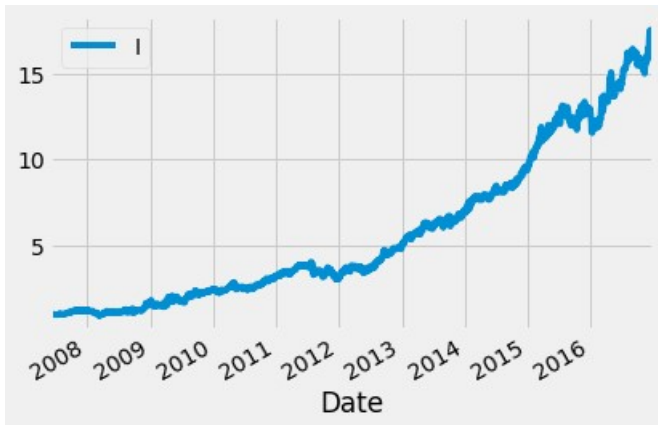or less (because p_value is not small enough)
p_value:
0.057679999999999954

=================== (10, '1W-FRI-100%', 2, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 165.403877
CAGR = 32.820000
Sharpe Ratio = 1.169000
Volatility= 0.289000
number of records for the series after dropping na: 1017
average return 0.003131
[-0.00288779 0.00298054]
Reject Ho = The population distribution of rule returns has an expected value of zero or
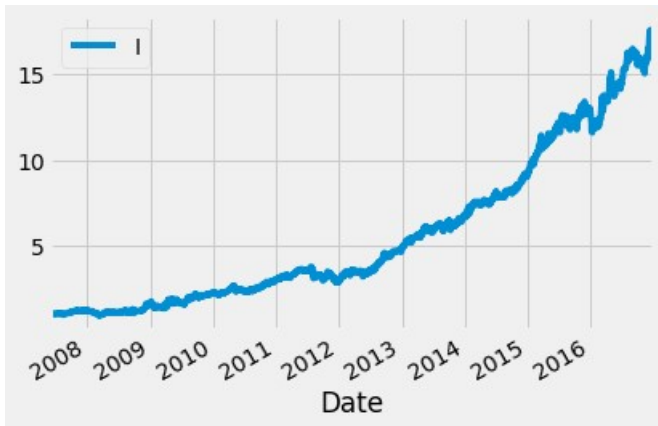less (because p_value is small enough)
p_value:
0.019440000000000013

=================== (10, '1W-FRI-100%', 2, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:

invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 166.238055
CAGR = 32.880000
Sharpe Ratio = 1.168000
Volatility= 0.290000
number of records for the series after dropping na: 1017
average return 0.002937
[-0.00290976 0.0029607]
Reject Ho = The population distribution of rule returns has an expected value of zero or
less (because p_value is small enough)
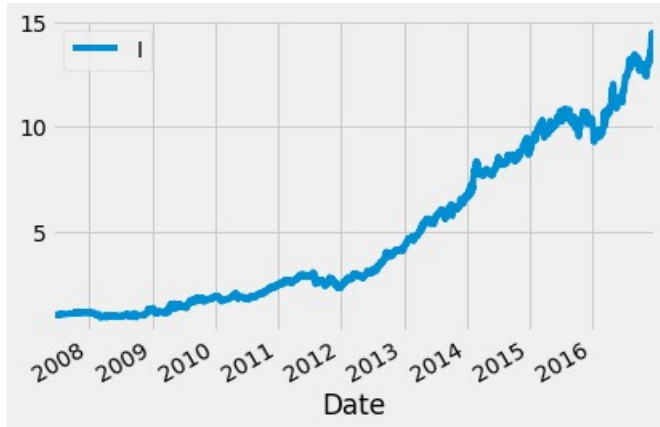p_value:
0.025699999999999945

==================== (10, '1W-FRI-100%', 2, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 133.636794
CAGR = 30.190000
Sharpe Ratio = 1.112000
Volatility= 0.284000
number of records for the series after dropping na: 1017
average return 0.002574
[-0.00279436 0.00282726]
Reject Ho = The population distribution of rule returns has an expected value of zero or
less (because p_value is small enough)
p_value:

0.03768000000000005

==================== (10, '1W-FRI-100%', 2, 2, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 135.152523
CAGR = 30.330000
Sharpe Ratio = 1.116000
Volatility= 0.284000
number of records for the series after dropping na: 1017
average return 0.002585
[-0.00280629 0.00280332]
Reject Ho = The population distribution of rule returns has an expected value of zero or
less (because p_value is small enough)
p_value:
0.03532000000000002

==================== (10, '1W-FRI-100%', 3, 1, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 258.778009
CAGR = 38.600000
Sharpe Ratio = 1.302000
Volatility= 0.295000
number of records for the series after dropping na: 1017
average return 0.003619

```
[-0.00292396  0.00298019]
```
Reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is small enough)
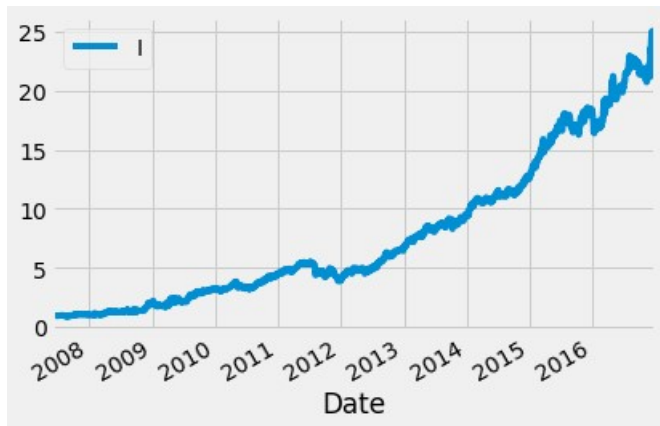p_value:
0.00873999999999997

==================== (10, '1W-FRI-100%', 3, 1, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning: invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 239.700324
CAGR = 37.580000
Sharpe Ratio = 1.277000
Volatility= 0.295000
number of records for the series after dropping na: 1017
average return 0.003561
```
[-0.00288604  0.00302321]
```
Reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is small enough)
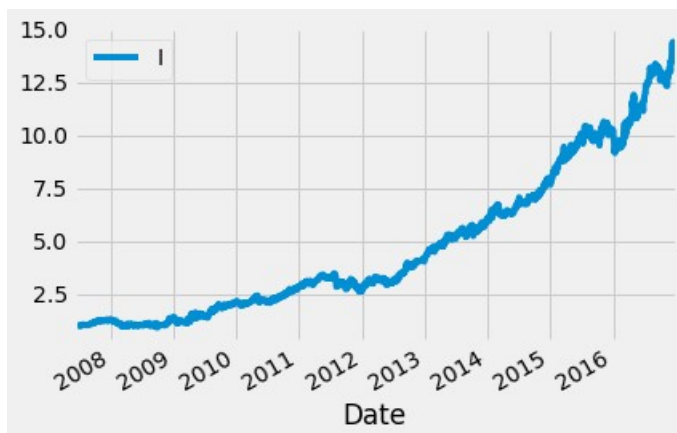p_value:
0.010199999999999987

==================== (10, '1W-FRI-100%', 3, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning: invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 133.972485
CAGR = 30.220000

Sharpe Ratio = 1.105000
Volatility= 0.286000
number of records for the series after dropping na: 1017
average return 0.002889
[-0.00285006 0.0029582]
Reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is small enough)
p_value:
0.02746000000000004

=================== (10, '1W-FRI-100%', 3, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
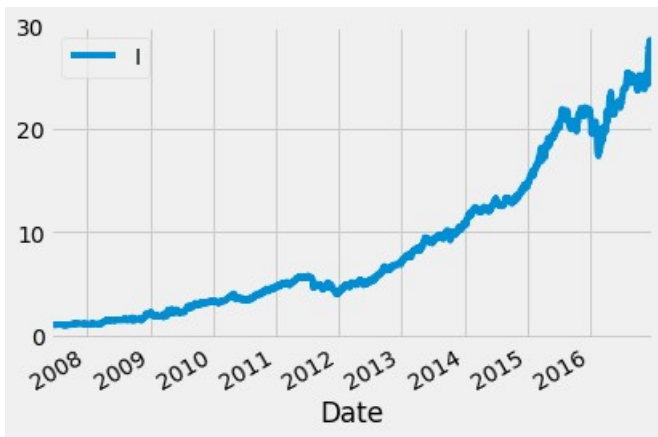 vratio = t/(lag*b);

TotaAnnReturn = 131.873318
CAGR = 30.030000
Sharpe Ratio = 1.099000
Volatility= 0.287000
number of records for the series after dropping na: 1017
average return 0.002960
[-0.00285315 0.00292531]
Reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is small enough)
p_value:
0.023379999999999956

=================== (10, '1W-FRI-100%', 4, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

```
TotaAnnReturn = 276.354135
CAGR = 39.480000
Sharpe Ratio = 1.312000
Volatility= 0.299000
number of records for the series after dropping na: 1017
average return 0.003446
[-0.00292258  0.00298282]
Reject Ho = The population distribution of rule returns has an expected value of zero or
less (because p_value is small enough)
p_value:
0.012399999999999967
```
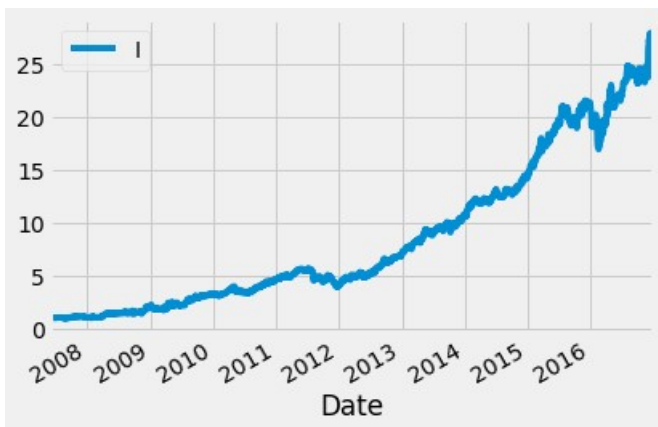
```
=================== (10, '1W-FRI-100%', 4, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 268.594021
CAGR = 39.100000
Sharpe Ratio = 1.303000
Volatility= 0.298000
number of records for the series after dropping na: 1017
average return 0.003393
[-0.00292095  0.00300936]
Reject Ho = The population distribution of rule returns has an expected value of zero or
less (because p_value is small enough)
p_value:
0.013619999999999965
```
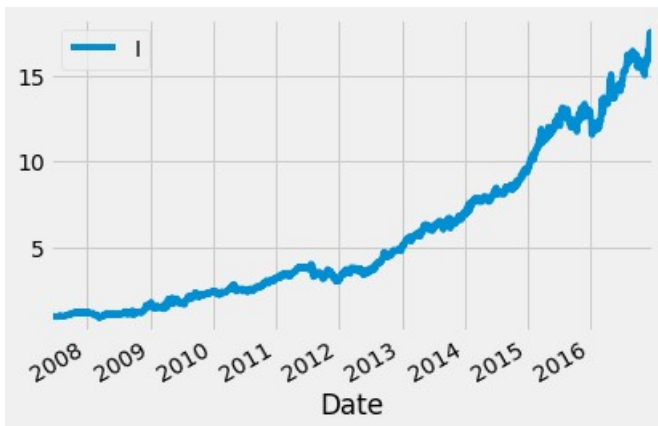
```
=================== (10, '1W-FRI-100%', 4, 2, 1, 0, 0) ===================
```

E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 159.534688
CAGR = 32.370000
Sharpe Ratio = 1.157000
Volatility= 0.289000
number of records for the series after dropping na: 1017
average return 0.002879
[-0.00293826 0.00297071]
Reject Ho = The population distribution of rule returns has an expected value of zero or
less (because p_value is small enough)
p_value:
0.028320000000000012

=================== (10, '1W-FRI-100%', 4, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
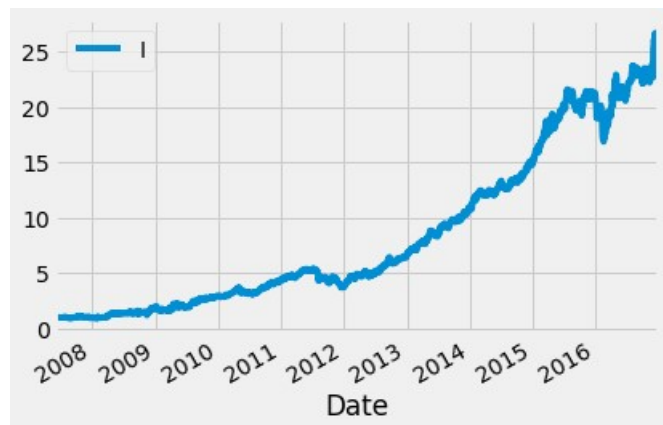 vratio = t/(lag*b);

TotaAnnReturn = 165.403877
CAGR = 32.820000
Sharpe Ratio = 1.169000
Volatility= 0.289000
number of records for the series after dropping na: 1017
average return 0.003131
[-0.00291605 0.00294938]
Reject Ho = The population distribution of rule returns has an expected value of zero or
less (because p_value is small enough)
p_value:

0.019199999999999995

```
=================== (10, '1W-FRI-100%', 5, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 256.123727
CAGR = 38.460000
Sharpe Ratio = 1.270000
Volatility= 0.304000
number of records for the series after dropping na: 1017
average return 0.003489
[-0.00312272  0.00316746]
Reject Ho = The population distribution of rule returns has an expected value of zero or
less (because p_value is small enough)
p_value:
0.015140000000000042
```
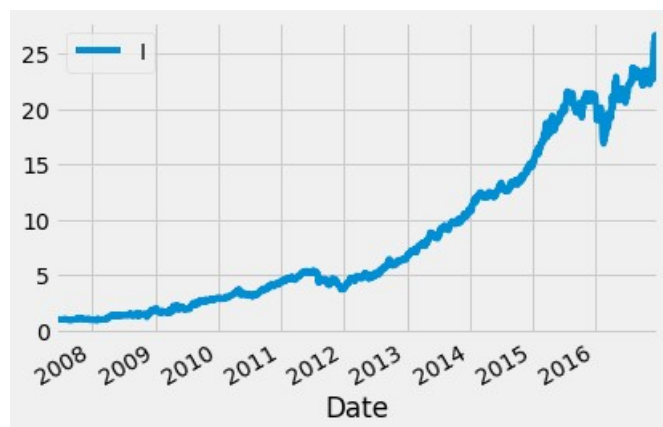
```
=================== (10, '1W-FRI-100%', 5, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 256.886417
CAGR = 38.500000
Sharpe Ratio = 1.271000
Volatility= 0.304000
number of records for the series after dropping na: 1017
average return 0.003519
[-0.00312524  0.00316431]
```

Reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is small enough)
p_value:
0.014920000000000044

==================== (10, '1W-FRI-100%', 5, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 175.545440
CAGR = 33.560000
Sharpe Ratio = 1.195000
Volatility= 0.287000
number of records for the series after dropping na: 1017
average return 0.002985
[-0.00290312 0.00298293]
Reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is small enough)
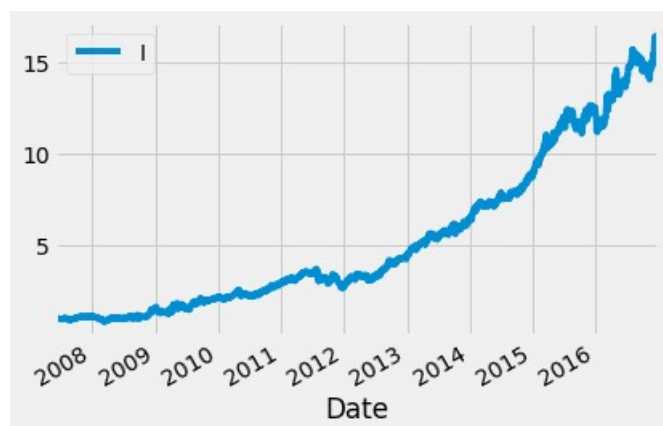p_value:
0.024920000000000053

==================== (10, '1W-FRI-100%', 5, 2, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 154.655075
CAGR = 31.980000
Sharpe Ratio = 1.147000
Volatility= 0.289000

number of records for the series after dropping na: 1017
average return 0.002872
[-0.00288126 0.00293379]
Reject Ho = The population distribution of rule returns has an expected value of zero or
less (because p_value is small enough)
p_value:
0.027639999999999998

=================== (10, '2W-FRI-100%', 1, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
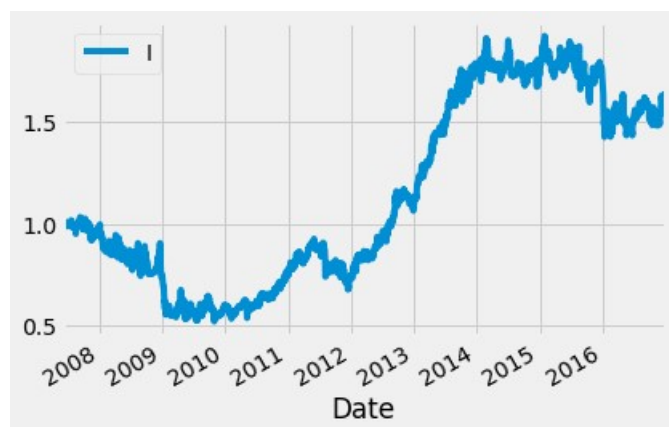invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 6.437729
CAGR = 4.980000
Sharpe Ratio = 0.326000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.000292
[-0.00259216 0.00257584]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.4111

=================== (10, '2W-FRI-100%', 1, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
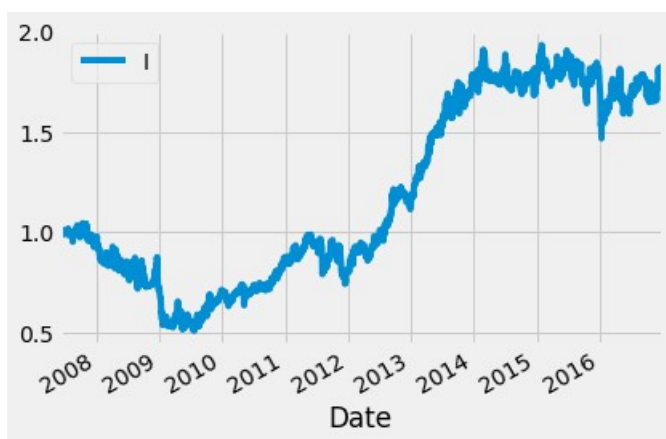 vratio = t/(lag*b);

```
TotaAnnReturn = 6.298173
CAGR = 4.890000
Sharpe Ratio = 0.322000
Volatility= 0.261000
number of records for the series after dropping na: 1017
average return 0.000035
[-0.00255524  0.0025928 ]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.48924
```

```
==================== (10, '2W-FRI-100%', 1, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
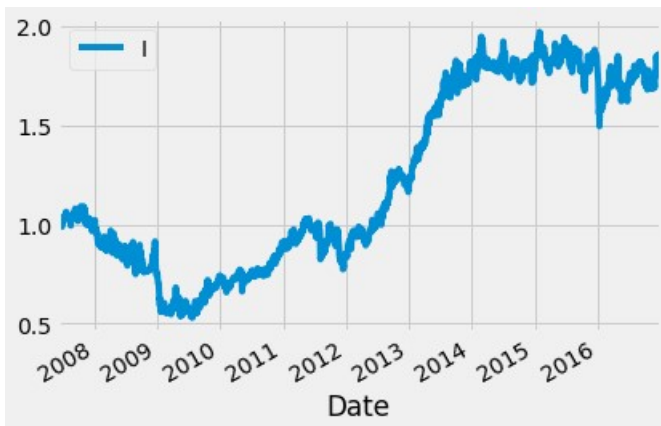


```
TotaAnnReturn = 8.205117
CAGR = 6.040000
Sharpe Ratio = 0.366000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.000277
[-0.00249375  0.00248356]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.41479999999999995
```

```
==================== (10, '2W-FRI-100%', 1, 2, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```

```
TotaAnnReturn = 8.540022
CAGR = 6.230000
Sharpe Ratio = 0.373000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.000297
[-0.00251832  0.00247995]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.40918


=================== (10, '2W-FRI-100%', 2, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
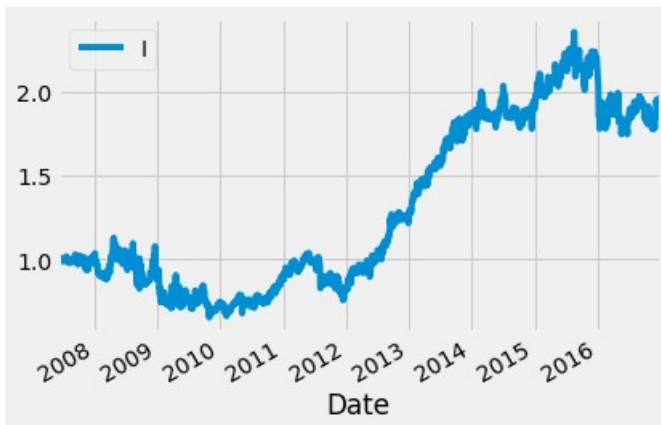


```
TotaAnnReturn = 9.558931
CAGR = 6.790000
Sharpe Ratio = 0.387000
Volatility= 0.275000
number of records for the series after dropping na: 1017
average return 0.000692
[-0.00275753  0.00273736]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.30845999999999996


=================== (10, '2W-FRI-100%', 2, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
```
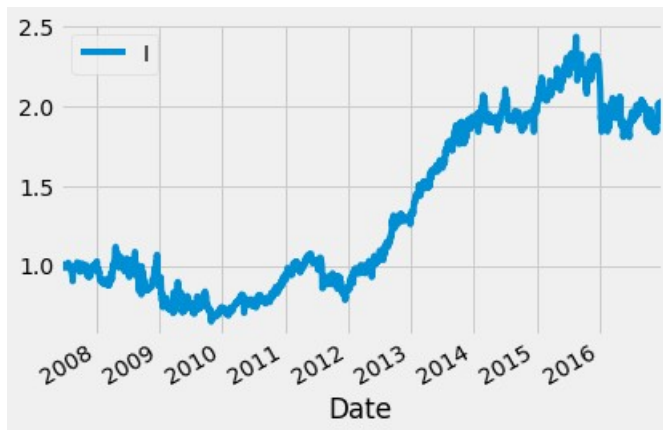
```
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 10.273236
CAGR = 7.170000
Sharpe Ratio = 0.400000
Volatility= 0.275000
number of records for the series after dropping na: 1017
average return 0.000543
[-0.00274437  0.00275747]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.34541999999999995


==================== (10, '2W-FRI-100%', 2, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
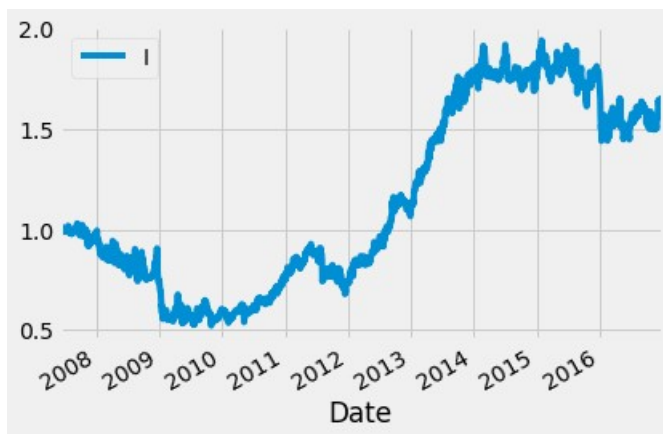


```
TotaAnnReturn = 6.452319
CAGR = 4.990000
Sharpe Ratio = 0.326000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.000313
[-0.00258988  0.00257293]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
```
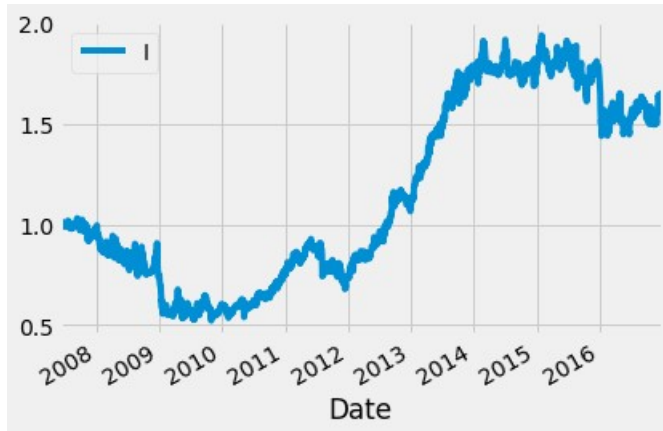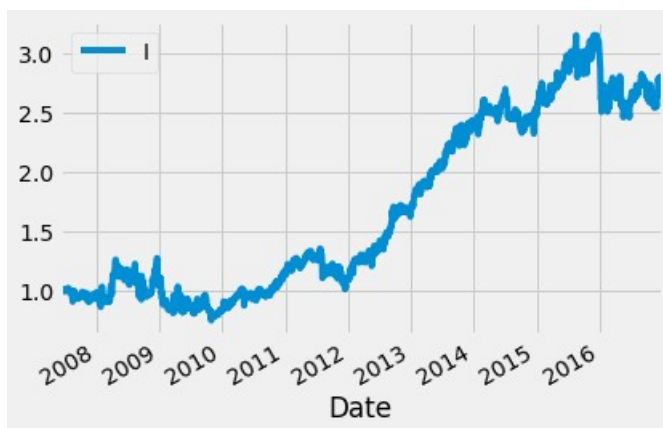
0.40264

```
================== (10, '2W-FRI-100%', 2, 2, 2, 0, 0) ==================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 6.437729
CAGR = 4.980000
Sharpe Ratio = 0.326000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.000292
[-0.00258703  0.00259431]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.41347999999999996
```

```
================== (10, '2W-FRI-100%', 3, 1, 1, 0, 0) ==================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 18.591835
CAGR = 10.870000
Sharpe Ratio = 0.522000
Volatility= 0.283000
number of records for the series after dropping na: 1017
average return 0.000854
```

```
[-0.00275292  0.00279086]
```
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.27054

==================== (10, '2W-FRI-100%', 3, 1, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 18.556384
CAGR = 10.860000
Sharpe Ratio = 0.521000
Volatility= 0.283000
number of records for the series after dropping na: 1017
average return 0.000834
```
[-0.00279684  0.00280827]
```
Do not reject Ho = The population distribution of rule returns has an expected value of zero
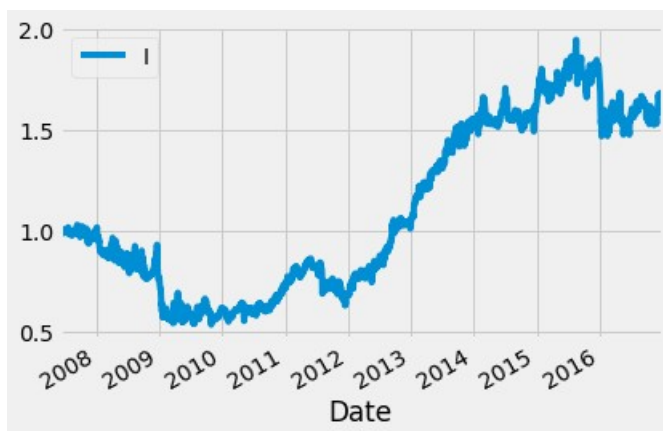or less (because p_value is not small enough)
p_value:
0.27503999999999995

==================== (10, '2W-FRI-100%', 3, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 6.792322
CAGR = 5.200000

Sharpe Ratio = 0.332000
Volatility= 0.266000
number of records for the series after dropping na: 1017
average return 0.000278
[-0.00265741 0.00274207]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.42112000000000005

=================== (10, '2W-FRI-100%', 3, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 7.608870
CAGR = 5.690000
Sharpe Ratio = 0.351000
Volatility= 0.266000
number of records for the series after dropping na: 1017
average return 0.000545
[-0.00266554 0.00268324]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.34572

=================== (10, '2W-FRI-100%', 4, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 17.358291
CAGR = 10.390000
Sharpe Ratio = 0.503000
Volatility= 0.287000
number of records for the series after dropping na: 1017
average return 0.000506
[-0.00279602 0.00284305]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
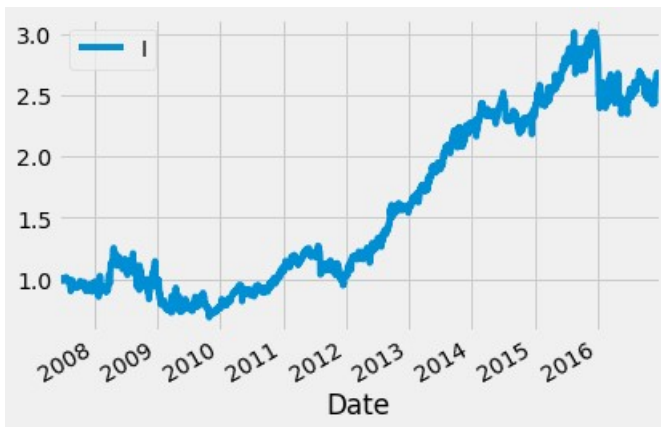or less (because p_value is not small enough)
p_value:
0.36178

=================== (10, '2W-FRI-100%', 4, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 17.073220
CAGR = 10.280000
Sharpe Ratio = 0.500000
Volatility= 0.287000
number of records for the series after dropping na: 1017
average return 0.000545
[-0.00277372 0.00283384]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
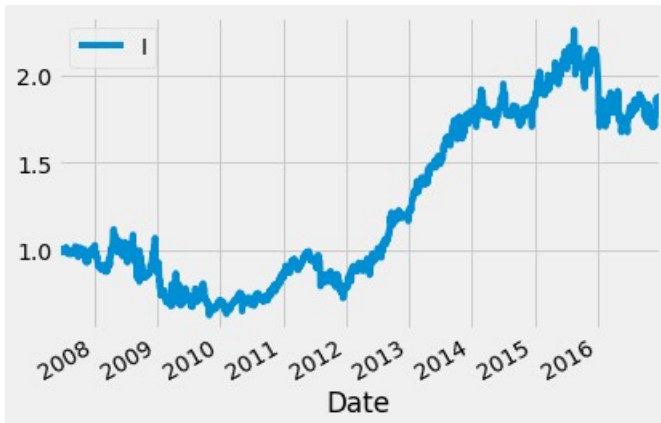or less (because p_value is not small enough)
p_value:
0.35294000000000003

=================== (10, '2W-FRI-100%', 4, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:

```
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 8.770251
CAGR = 6.360000
Sharpe Ratio = 0.372000
Volatility= 0.274000
number of records for the series after dropping na: 1017
average return 0.000406
[-0.00271326  0.00275275]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.3873


=================== (10, '2W-FRI-100%', 4, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
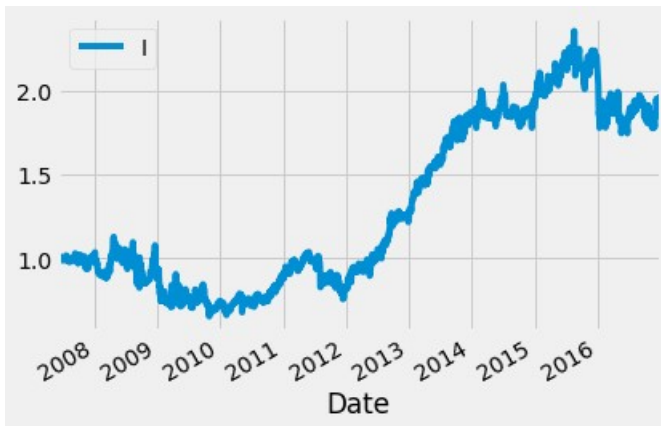


```
TotaAnnReturn = 9.558931
CAGR = 6.790000
Sharpe Ratio = 0.387000
Volatility= 0.275000
number of records for the series after dropping na: 1017
average return 0.000692
[-0.00272044  0.00277737]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.30810000000000004
```
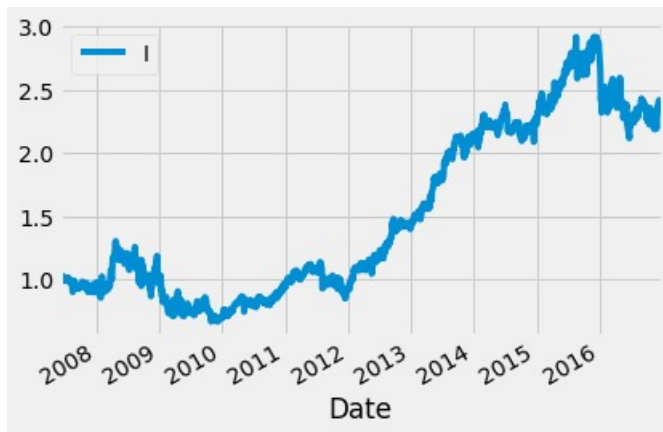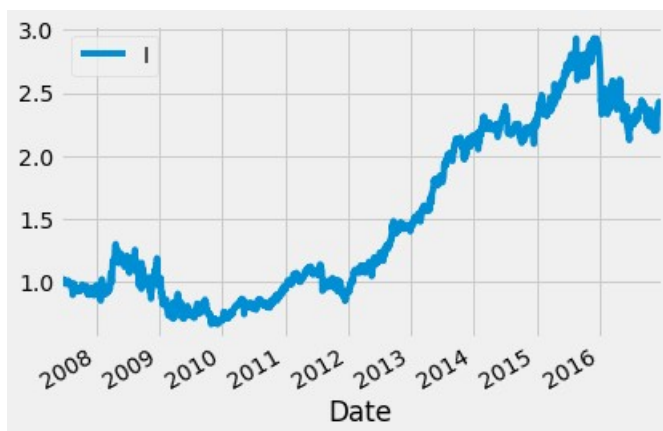
```
=================== (10, '2W-FRI-100%', 5, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 14.408743
CAGR = 9.150000
Sharpe Ratio = 0.462000
Volatility= 0.288000
number of records for the series after dropping na: 1017
average return 0.000248
[-0.00285086  0.00290134]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.43004
```

```
=================== (10, '2W-FRI-100%', 5, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 14.502998
CAGR = 9.190000
Sharpe Ratio = 0.463000
Volatility= 0.288000
number of records for the series after dropping na: 1017
average return 0.000286
[-0.00285674  0.00287938]
```

Do not reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is not small enough)
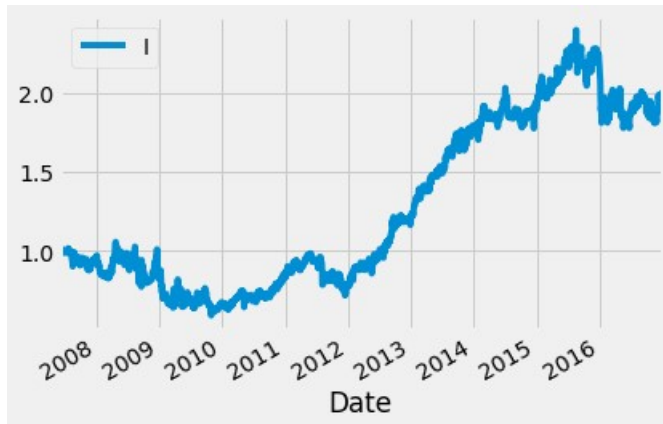p_value:
0.42035999999999996

==================== (10, '2W-FRI-100%', 5, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 9.949093
CAGR = 7.000000
Sharpe Ratio = 0.395000
Volatility= 0.275000
number of records for the series after dropping na: 1017
average return 0.000422
[-0.00271517 0.0027668]
Do not reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is not small enough)
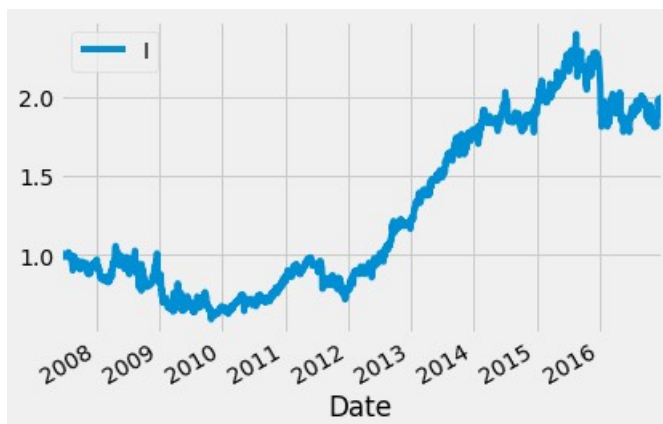p_value:
0.38134

==================== (10, '2W-FRI-100%', 5, 2, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
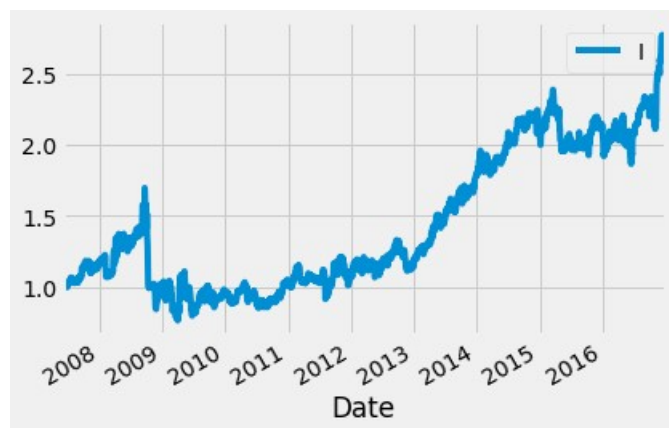

TotaAnnReturn = 9.949093
CAGR = 7.000000
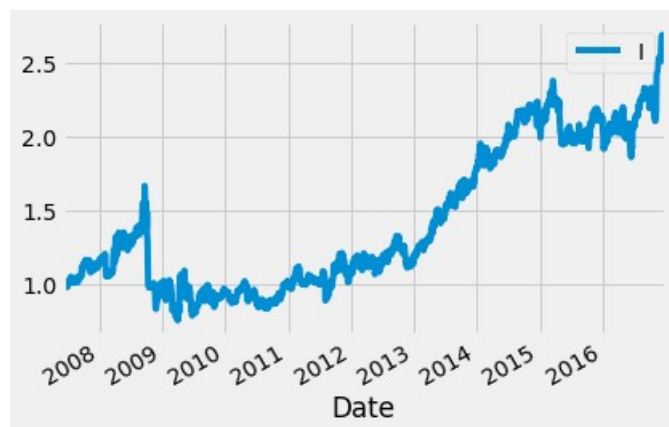Sharpe Ratio = 0.395000
Volatility= 0.275000

number of records for the series after dropping na: 1017
average return 0.000422
[-0.00273675 0.00276467]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.38273999999999997

==================== (15, '1W-FRI-100%', 1, 1, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 17.455034
CAGR = 10.430000
Sharpe Ratio = 0.511000
Volatility= 0.279000
number of records for the series after dropping na: 1017
average return 0.000563
[-0.00276797 0.00282899]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.34414

==================== (15, '1W-FRI-100%', 1, 1, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
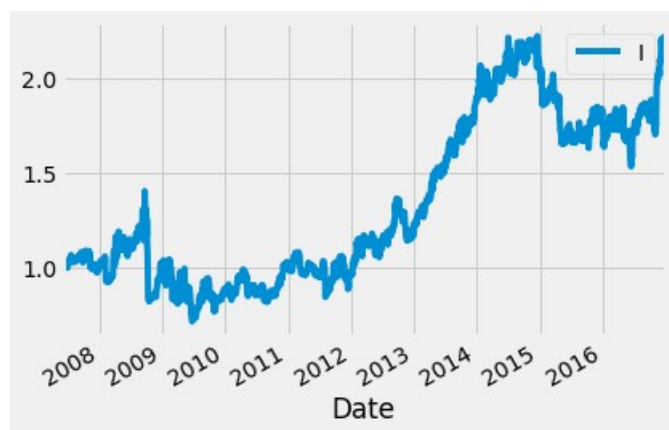 vratio = t/(lag*b);

TotaAnnReturn = 16.618963

CAGR = 10.090000
Sharpe Ratio = 0.499000
Volatility= 0.279000
number of records for the series after dropping na: 1017
average return 0.000444
[-0.00277792 0.00277942]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.37144

=================== (15, '1W-FRI-100%', 1, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 12.208299
CAGR = 8.140000
Sharpe Ratio = 0.438000
Volatility= 0.270000
number of records for the series after dropping na: 1017
average return 0.000839
[-0.00271825 0.00271601]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.27083999999999997

=================== (15, '1W-FRI-100%', 1, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

```
TotaAnnReturn = 15.266074
CAGR = 9.530000
Sharpe Ratio = 0.487000
Volatility= 0.271000
number of records for the series after dropping na: 1017
average return 0.001088
[-0.00270871  0.002733  ]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.21552000000000004
```
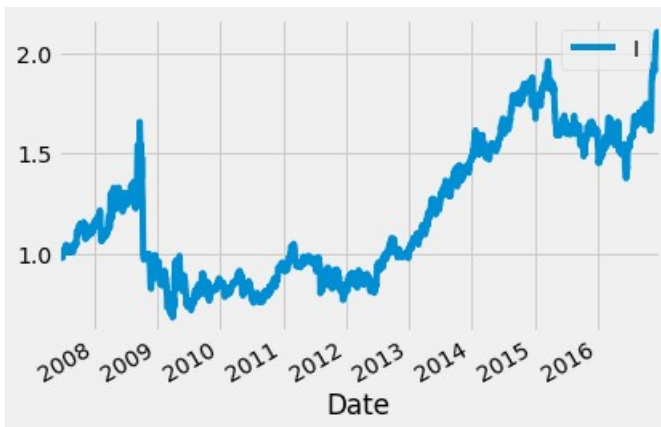
```
=================== (15, '1W-FRI-100%', 2, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 10.551750
CAGR = 7.320000
Sharpe Ratio = 0.401000
Volatility= 0.285000
number of records for the series after dropping na: 1017
average return 0.000425
[-0.00291793  0.00293488]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.38170000000000004
```

```
=================== (15, '1W-FRI-100%', 2, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
```

```
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 12.349107
CAGR = 8.210000
Sharpe Ratio = 0.431000
Volatility= 0.285000
number of records for the series after dropping na: 1017
average return 0.000616
[-0.00289587  0.00288647]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.33720000000000006


=================== (15, '1W-FRI-100%', 2, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
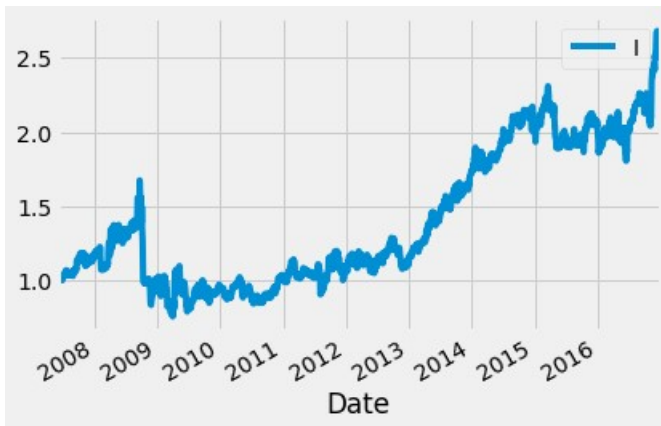


```
TotaAnnReturn = 16.541857
CAGR = 10.060000
Sharpe Ratio = 0.499000
Volatility= 0.279000
number of records for the series after dropping na: 1017
average return 0.000573
[-0.00275769  0.00281418]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.34112
```
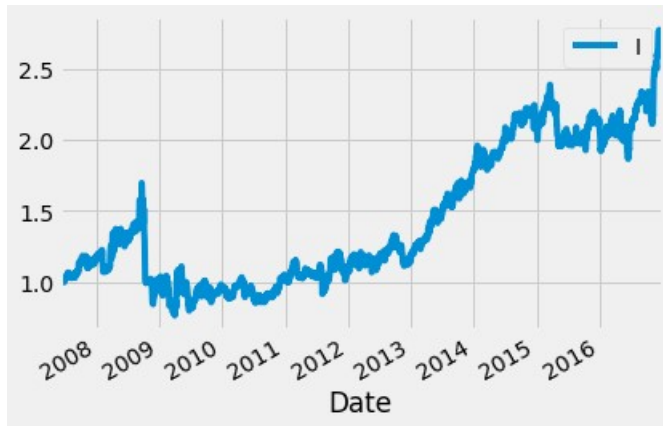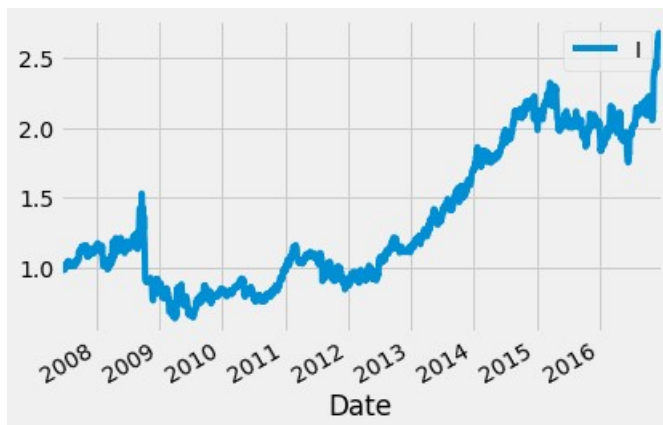
```
=================== (15, '1W-FRI-100%', 2, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 17.455034
CAGR = 10.430000
Sharpe Ratio = 0.511000
Volatility= 0.279000
number of records for the series after dropping na: 1017
average return 0.000563
[-0.00279259  0.0028088 ]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.34602
```

```
=================== (15, '1W-FRI-100%', 3, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 16.538474
CAGR = 10.060000
Sharpe Ratio = 0.492000
Volatility= 0.286000
number of records for the series after dropping na: 1017
average return 0.000663
[-0.00285442  0.00288685]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
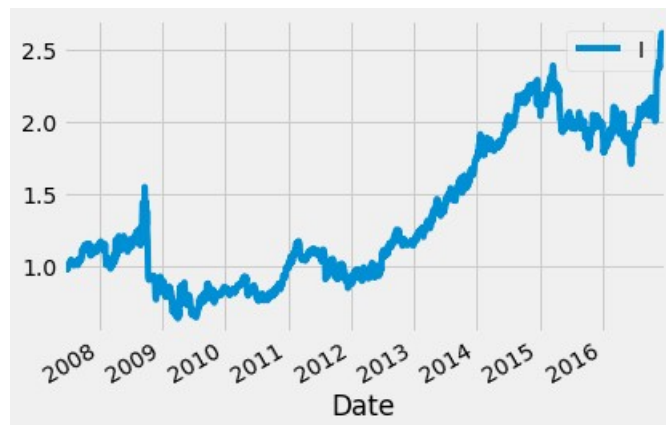```

or less (because p_value is not small enough)
p_value:
0.32277999999999996

==================== (15, '1W-FRI-100%', 3, 1, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);



TotaAnnReturn = 15.843713
CAGR = 9.770000
Sharpe Ratio = 0.483000
Volatility= 0.286000
number of records for the series after dropping na: 1017
average return 0.000662
[-0.00286016  0.00289578]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
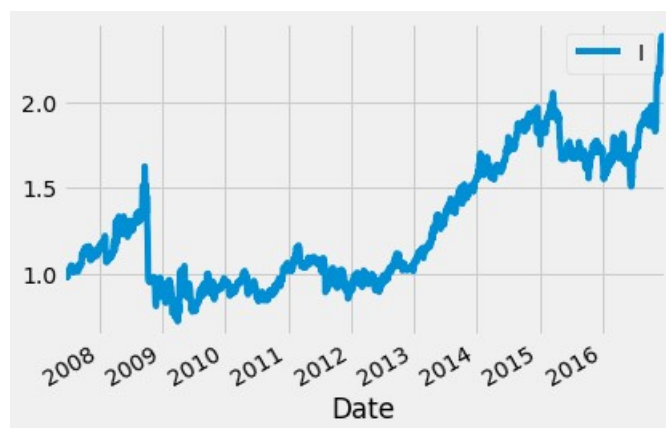or less (because p_value is not small enough)
p_value:
0.32533999999999996

==================== (15, '1W-FRI-100%', 3, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
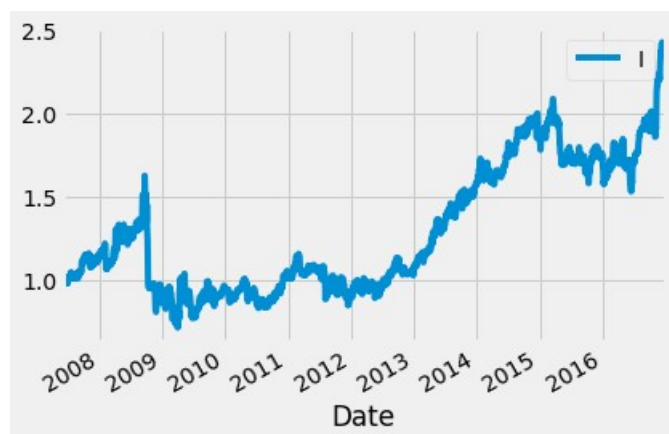


TotaAnnReturn = 13.321854
CAGR = 8.660000
Sharpe Ratio = 0.448000
Volatility= 0.283000
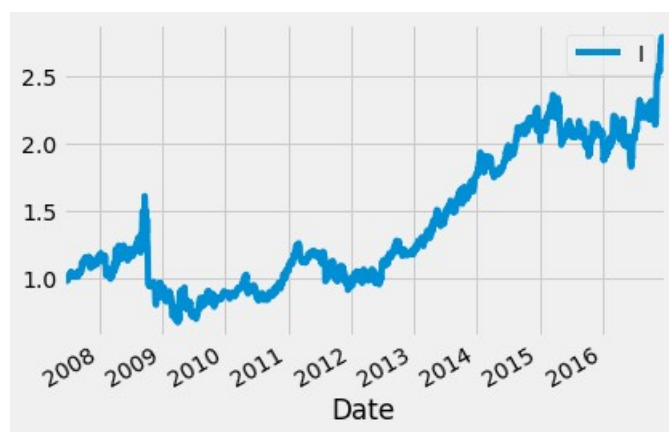number of records for the series after dropping na: 1017

average return 0.000794
[-0.00284102  0.00291354]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.29338

==================== (15, '1W-FRI-100%', 3, 2, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);



TotaAnnReturn = 13.692221
CAGR = 8.830000
Sharpe Ratio = 0.453000
Volatility= 0.283000
number of records for the series after dropping na: 1017
average return 0.000751
[-0.00284344  0.00291948]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.30735999999999997

==================== (15, '1W-FRI-100%', 4, 1, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
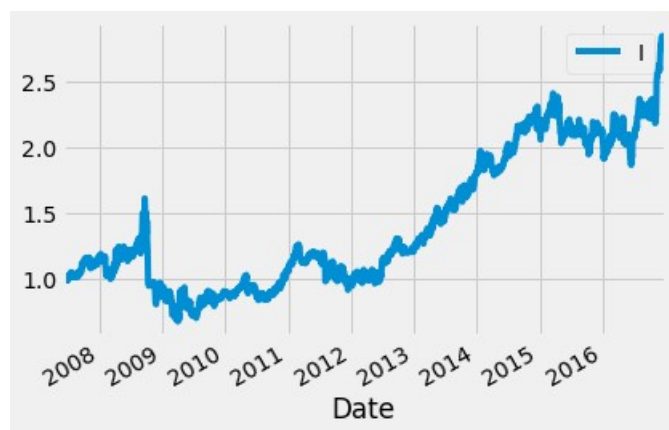  vratio = t/(lag*b);



TotaAnnReturn = 17.586888

```
CAGR = 10.480000
Sharpe Ratio = 0.507000
Volatility= 0.286000
number of records for the series after dropping na: 1017
average return 0.000896
[-0.00282271 0.00286251]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.26680000000000004

=================== (15, '1W-FRI-100%', 4, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
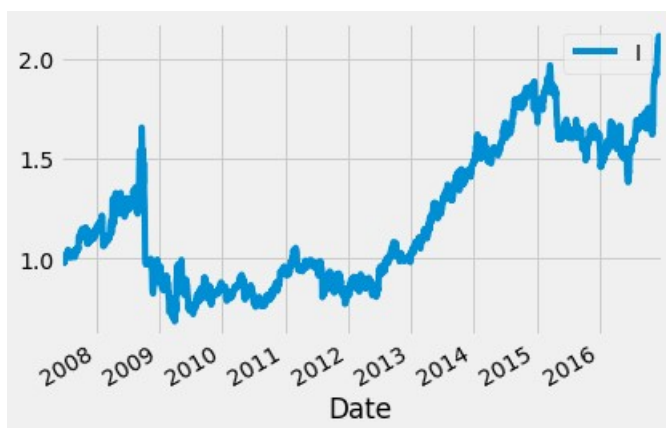


```
TotaAnnReturn = 18.161775
CAGR = 10.710000
Sharpe Ratio = 0.514000
Volatility= 0.286000
number of records for the series after dropping na: 1017
average return 0.000896
[-0.00284276  0.00287832]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.26704000000000006


=================== (15, '1W-FRI-100%', 4, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```

```
TotaAnnReturn = 10.653037
CAGR = 7.370000
Sharpe Ratio = 0.403000
Volatility= 0.285000
number of records for the series after dropping na: 1017
average return 0.000468
[-0.00289209  0.00290753]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.37458


=================== (15, '1W-FRI-100%', 4, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
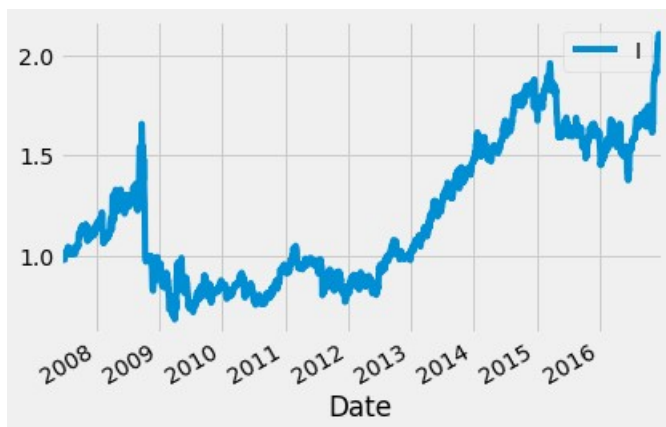


```
TotaAnnReturn = 10.551750
CAGR = 7.320000
Sharpe Ratio = 0.401000
Volatility= 0.285000
number of records for the series after dropping na: 1017
average return 0.000425
[-0.00289322  0.00292105]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.38244


=================== (15, '1W-FRI-100%', 5, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
```
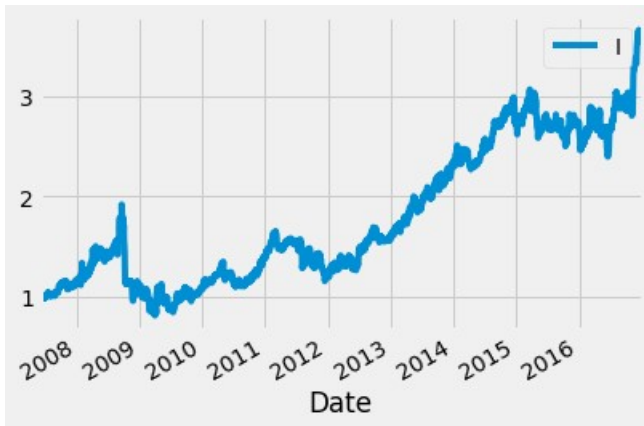
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 26.403060
CAGR = 13.560000
Sharpe Ratio = 0.604000
Volatility= 0.289000
number of records for the series after dropping na: 1017
average return 0.001262
[-0.00287131 0.00287905]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.19540000000000002

=================== (15, '1W-FRI-100%', 5, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 26.403060
CAGR = 13.560000
Sharpe Ratio = 0.604000
Volatility= 0.289000
number of records for the series after dropping na: 1017
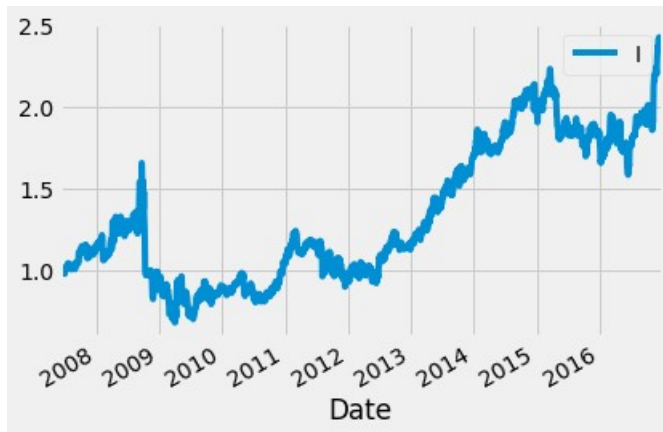average return 0.001262
[-0.00286425 0.00291468]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.19364000000000003

=================== (15, '1W-FRI-100%', 5, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 13.720458
CAGR = 8.850000
Sharpe Ratio = 0.453000
Volatility= 0.284000
number of records for the series after dropping na: 1017
average return 0.000813
[-0.00282681 0.00289087]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.28703999999999996

=================== (15, '1W-FRI-100%', 5, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 13.720458
CAGR = 8.850000
Sharpe Ratio = 0.453000
Volatility= 0.284000
number of records for the series after dropping na: 1017
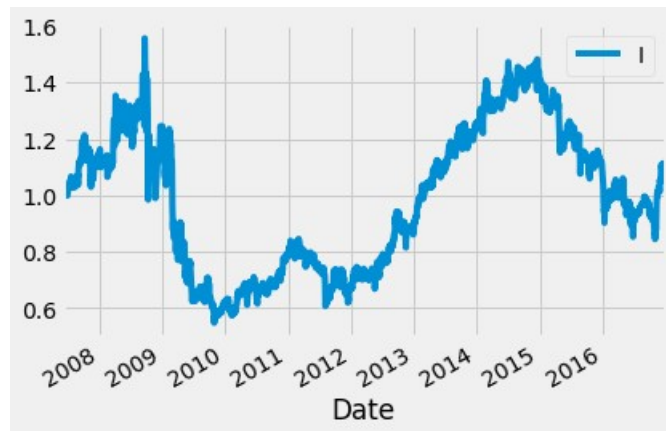average return 0.000813
[-0.00282317 0.00287784]

Do not reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is not small enough)
p_value:
0.2882

=================== (15, '2W-FRI-100%', 1, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 0.989502
CAGR = 0.920000
Sharpe Ratio = 0.178000
Volatility= 0.287000
number of records for the series after dropping na: 1017
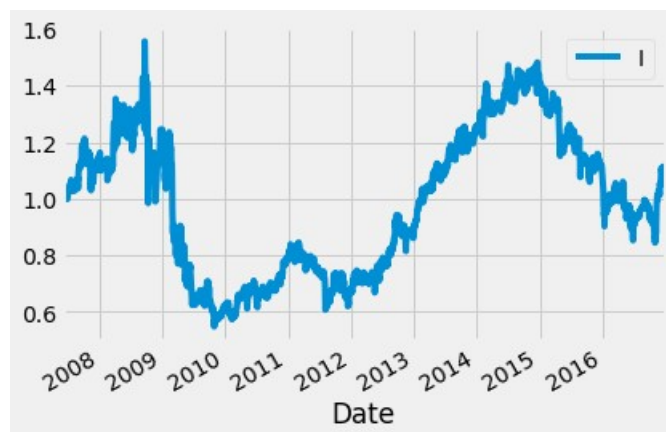average return -0.000274
[-0.00285284 0.00287947]
Do not reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is not small enough)
p_value:
0.5752999999999999

=================== (15, '2W-FRI-100%', 1, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
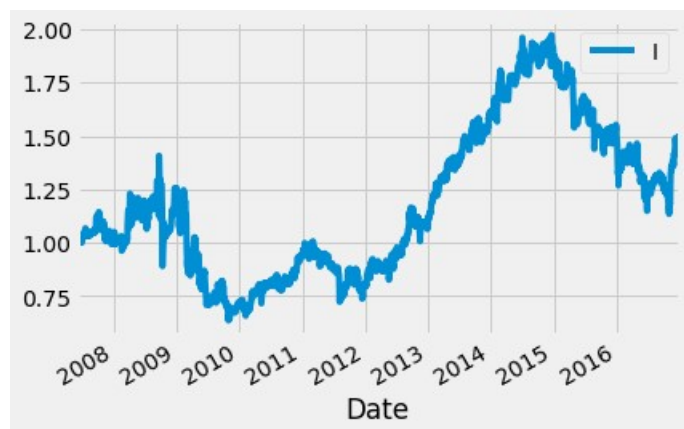invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 0.989502
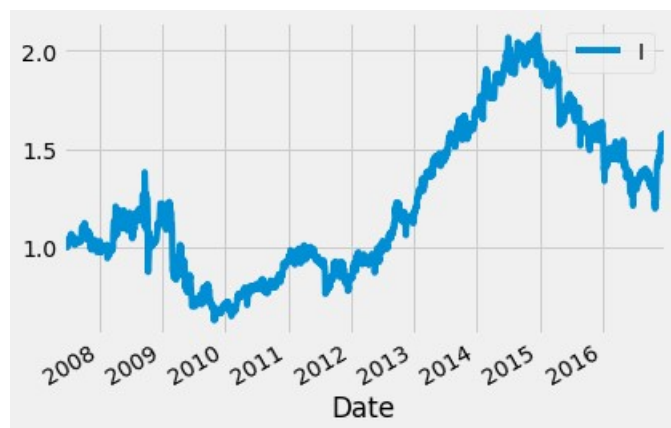CAGR = 0.920000
Sharpe Ratio = 0.178000

```
Volatility= 0.287000
number of records for the series after dropping na: 1017
average return -0.000274
[-0.00286318  0.00285557]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.5765
```

```
=================== (15, '2W-FRI-100%', 1, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 4.878397
CAGR = 3.960000
Sharpe Ratio = 0.286000
Volatility= 0.283000
number of records for the series after dropping na: 1017
average return 0.000313
[-0.00286682  0.00286794]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.41568000000000005
```

```
=================== (15, '2W-FRI-100%', 1, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
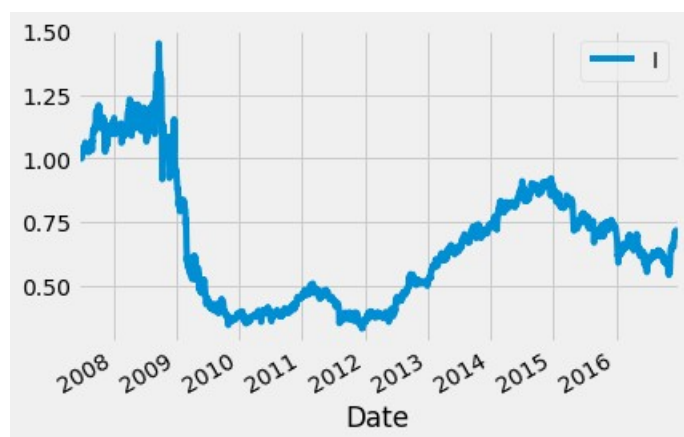
TotaAnnReturn = 5.706550
CAGR = 4.510000
Sharpe Ratio = 0.305000
Volatility= 0.283000
number of records for the series after dropping na: 1017
average return 0.000556
[-0.00282419 0.00283409]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.35207999999999995

=================== (15, '2W-FRI-100%', 2, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
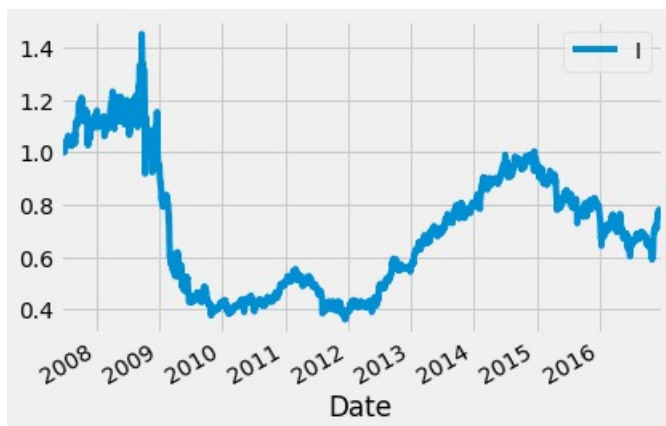 vratio = t/(lag*b);

TotaAnnReturn = -3.217560
CAGR = -3.680000
Sharpe Ratio = 0.012000
Volatility= 0.291000
number of records for the series after dropping na: 1017
average return -0.001145
[-0.00295124 0.00292308]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.77912

=================== (15, '2W-FRI-100%', 2, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

```
TotaAnnReturn = -2.596214
CAGR = -2.870000
Sharpe Ratio = 0.042000
Volatility= 0.291000
number of records for the series after dropping na: 1017
average return -0.000818
[-0.00288103  0.00290415]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.7081


==================== (15, '2W-FRI-100%', 2, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
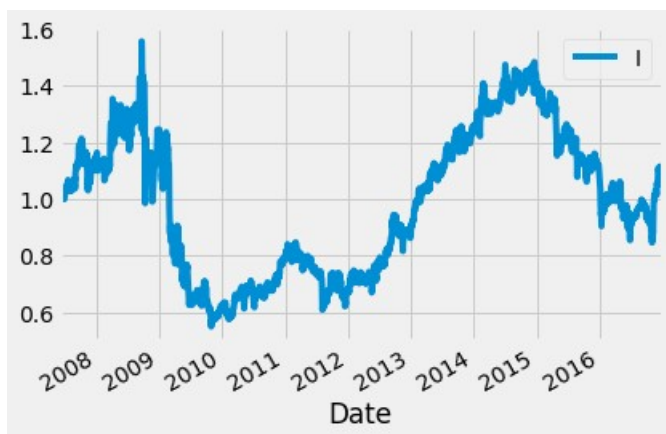


```
TotaAnnReturn = 0.999339
CAGR = 0.930000
Sharpe Ratio = 0.178000
Volatility= 0.287000
number of records for the series after dropping na: 1017
average return -0.000253
[-0.00283731  0.00286446]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.5679000000000001


==================== (15, '2W-FRI-100%', 2, 2, 2, 0, 0) ====================
```
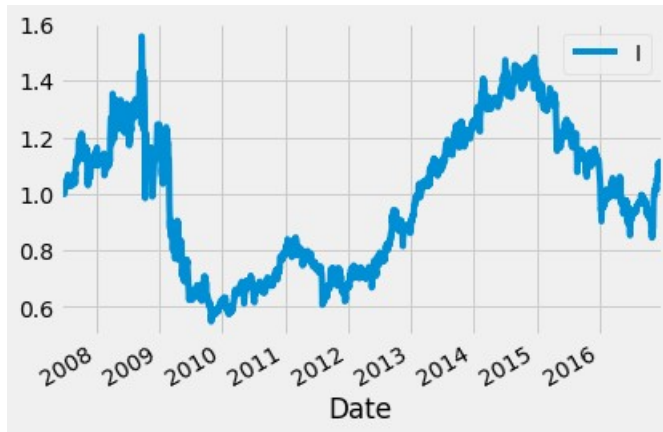
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 0.989502
CAGR = 0.920000
Sharpe Ratio = 0.178000
Volatility= 0.287000
number of records for the series after dropping na: 1017
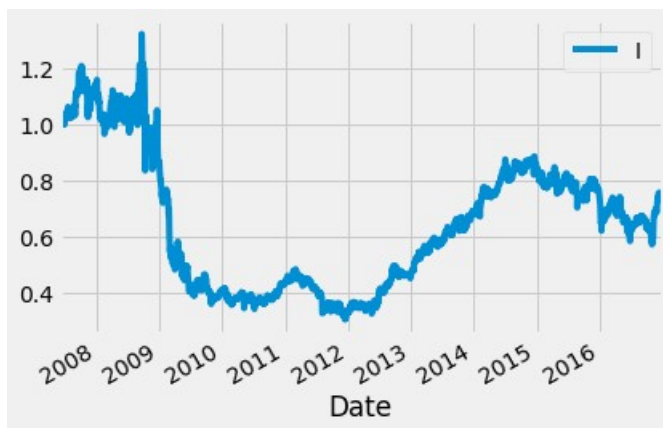average return -0.000274
[-0.00284433 0.00284924]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.57502

=================== (15, '2W-FRI-100%', 3, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = -2.732948
CAGR = -3.040000
Sharpe Ratio = 0.037000
Volatility= 0.293000
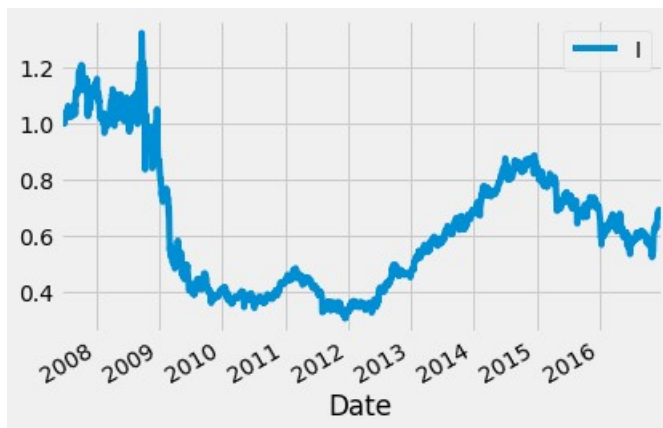number of records for the series after dropping na: 1017
average return -0.001357
[-0.00283846 0.0028342]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)

p_value:
0.82628

==================== (15, '2W-FRI-100%', 3, 1, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = -3.379641
CAGR = -3.910000
Sharpe Ratio = 0.005000
Volatility= 0.292000
number of records for the series after dropping na: 1017
average return -0.001357
[-0.00283638 0.00284948]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
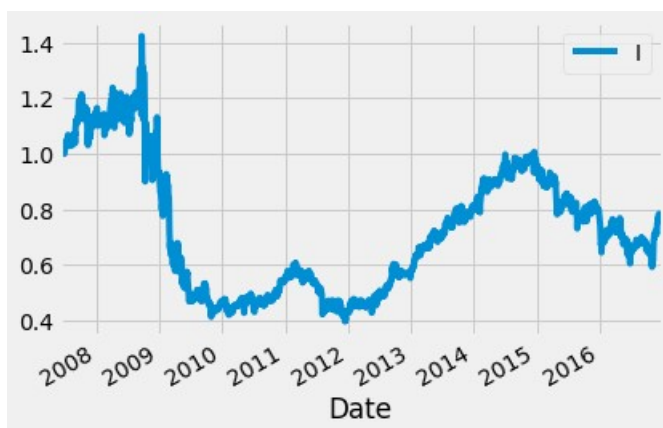or less (because p_value is not small enough)
p_value:
0.82536

==================== (15, '2W-FRI-100%', 3, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = -2.565453
CAGR = -2.830000
Sharpe Ratio = 0.042000
Volatility= 0.289000
number of records for the series after dropping na: 1017
average return -0.000644

```
[-0.00289403  0.00286627]
```
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.66772

================== (15, '2W-FRI-100%', 3, 2, 2, 0, 0) ==================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);


```
TotaAnnReturn = -2.507744
CAGR = -2.760000
Sharpe Ratio = 0.045000
Volatility= 0.289000
number of records for the series after dropping na: 1017
average return -0.000587
[-0.0028728   0.00288801]
```
Do not reject Ho = The population distribution of rule returns has an expected value of zero
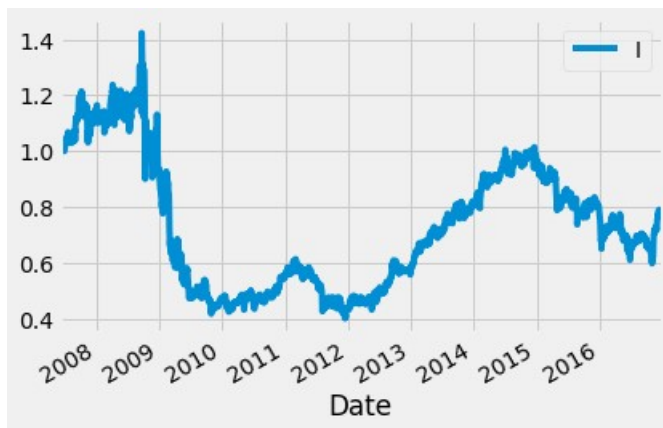or less (because p_value is not small enough)
p_value:
0.65496

================== (15, '2W-FRI-100%', 4, 1, 1, 0, 0) ==================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);


```
TotaAnnReturn = -2.096226
CAGR = -2.250000
Sharpe Ratio = 0.065000
```

```
Volatility= 0.292000
number of records for the series after dropping na: 1017
average return -0.001282
[-0.00285309  0.00283408]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.80976


=================== (15, '2W-FRI-100%', 4, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
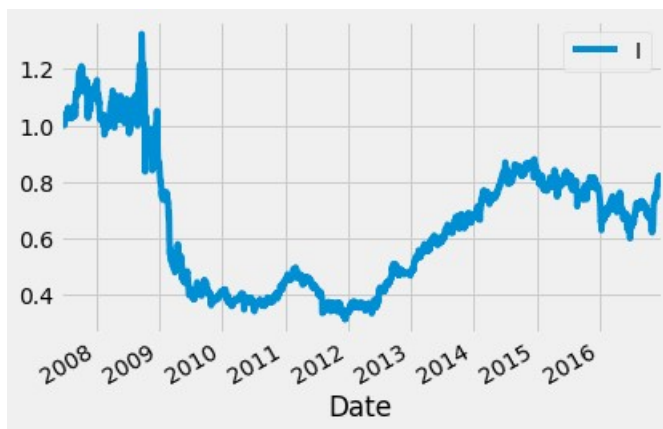


```
TotaAnnReturn = -2.096226
CAGR = -2.250000
Sharpe Ratio = 0.065000
Volatility= 0.292000
number of records for the series after dropping na: 1017
average return -0.001282
[-0.00283149  0.00285374]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.81198


=================== (15, '2W-FRI-100%', 4, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
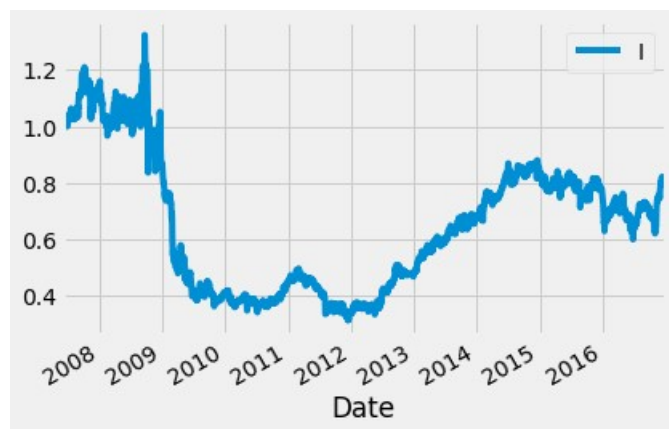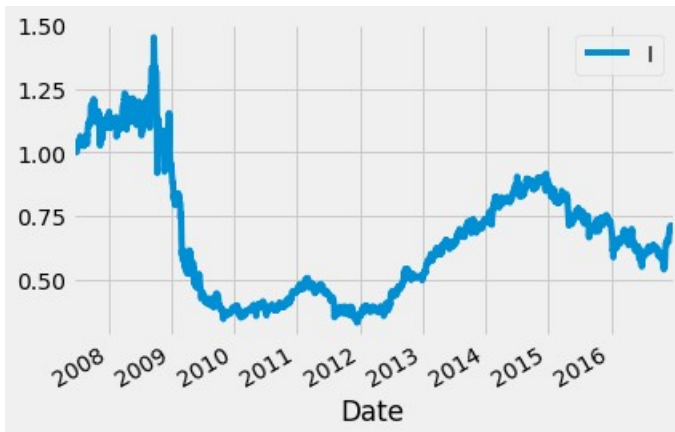
TotaAnnReturn = -3.270002
CAGR = -3.750000
Sharpe Ratio = 0.009000
Volatility= 0.291000
number of records for the series after dropping na: 1017
average return -0.001202
[-0.00293518 0.00291593]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.79196

=================== (15, '2W-FRI-100%', 4, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = -3.217560
CAGR = -3.680000
Sharpe Ratio = 0.012000
Volatility= 0.291000
number of records for the series after dropping na: 1017
average return -0.001145
[-0.00293582 0.00294957]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
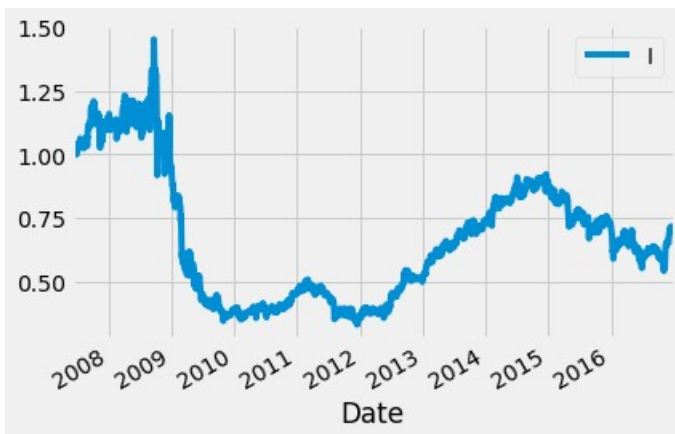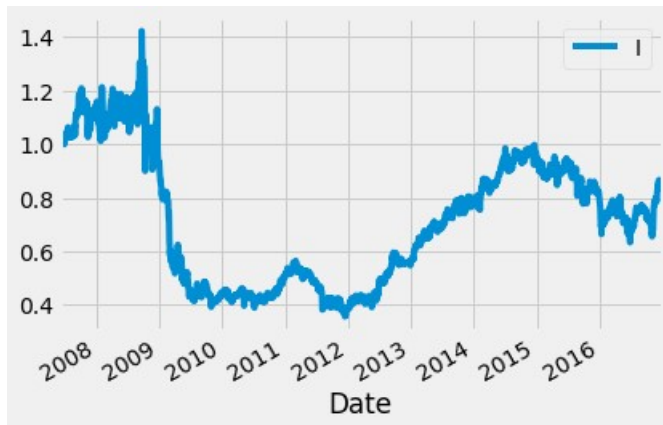or less (because p_value is not small enough)
p_value:
0.7774

=================== (15, '2W-FRI-100%', 5, 1, 1, 0, 0) ===================

E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = -1.653821
CAGR = -1.740000
Sharpe Ratio = 0.088000
Volatility= 0.298000
number of records for the series after dropping na: 1017
average return -0.001163
[-0.00286302 0.00289102]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.78554

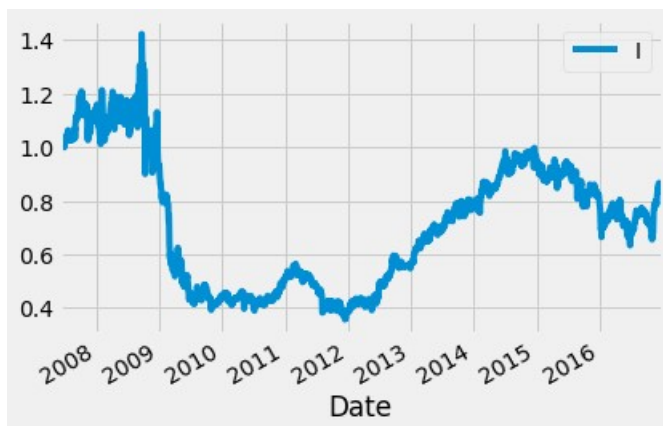=================== (15, '2W-FRI-100%', 5, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = -1.653821
CAGR = -1.740000
Sharpe Ratio = 0.088000
Volatility= 0.298000
number of records for the series after dropping na: 1017
average return -0.001163
[-0.00286652 0.00287164]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:

0.78886

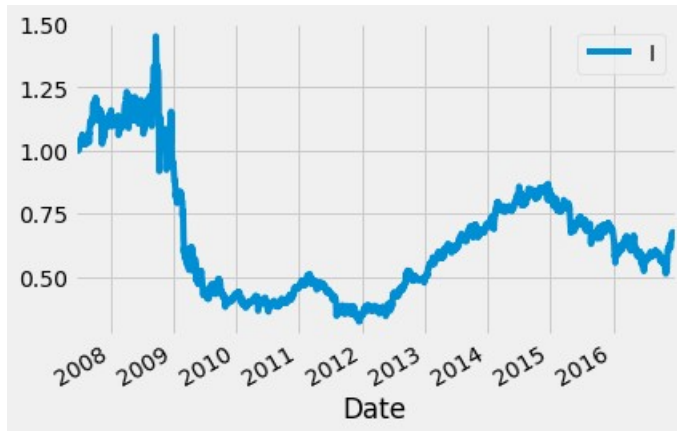==================== (15, '2W-FRI-100%', 5, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = -3.612952
CAGR = -4.230000
Sharpe Ratio = -0.007000
Volatility= 0.293000
number of records for the series after dropping na: 1017
average return -0.001170
[-0.00292443 0.00291428]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.78428
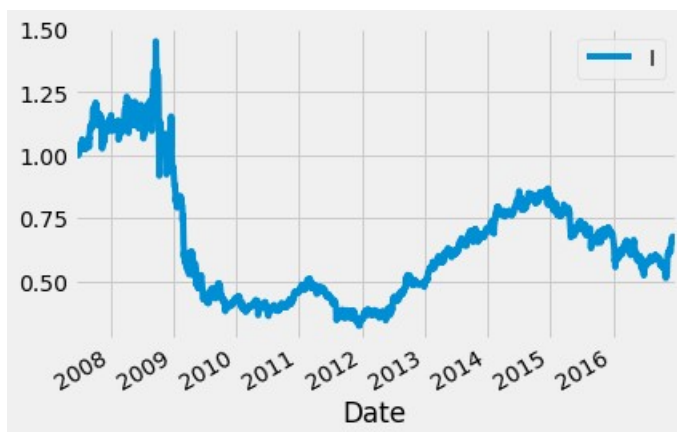
==================== (15, '2W-FRI-100%', 5, 2, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = -3.612952
CAGR = -4.230000
Sharpe Ratio = -0.007000
Volatility= 0.293000
number of records for the series after dropping na: 1017
average return -0.001170

[-0.00287396 0.00289434]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.78612

================== (20, '1W-FRI-100%', 1, 1, 1, 0, 0) ==================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 37.018938
CAGR = 16.480000
Sharpe Ratio = 0.751000
Volatility= 0.255000
number of records for the series after dropping na: 1017
average return 0.001641
[-0.00260609 0.00264167]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
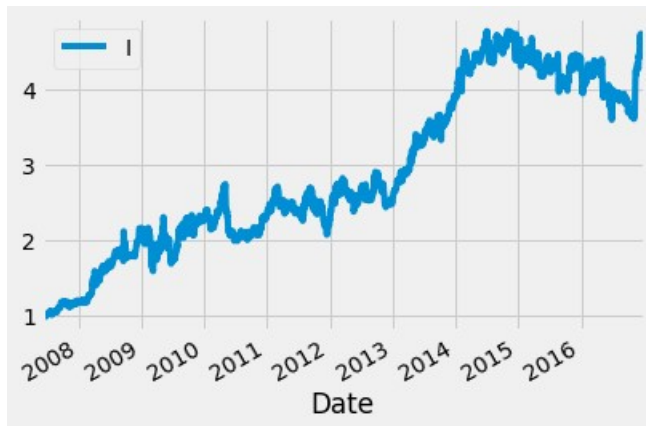or less (because p_value is not small enough)
p_value:
0.11148000000000002

================== (20, '1W-FRI-100%', 1, 1, 2, 0, 0) ==================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 33.670296
CAGR = 15.630000
Sharpe Ratio = 0.719000

```
Volatility= 0.257000
number of records for the series after dropping na: 1017
average return 0.001695
[-0.00269142  0.0026897 ]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.10809999999999997


==================== (20, '1W-FRI-100%', 1, 2, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
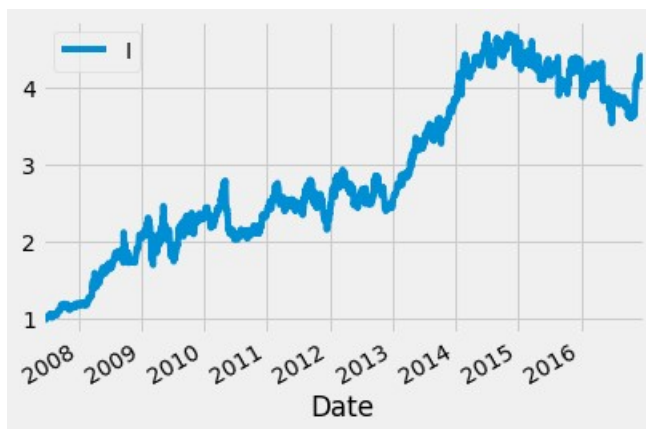


```
TotaAnnReturn = 52.498741
CAGR = 19.830000
Sharpe Ratio = 0.870000
Volatility= 0.254000
number of records for the series after dropping na: 1017
average return 0.001893
[-0.00256748  0.00259837]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.07506000000000002


==================== (20, '1W-FRI-100%', 1, 2, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```

```
TotaAnnReturn = 46.457035
CAGR = 18.620000
Sharpe Ratio = 0.829000
Volatility= 0.254000
number of records for the series after dropping na: 1017
average return 0.002015
[-0.00259699  0.00261752]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.0647799999999995


=================== (20, '1W-FRI-100%', 2, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 32.064673
CAGR = 15.200000
Sharpe Ratio = 0.699000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.001038
[-0.00262404  0.00261544]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.21709999999999996


=================== (20, '1W-FRI-100%', 2, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```

```
TotaAnnReturn = 29.340475
CAGR = 14.440000
Sharpe Ratio = 0.670000
Volatility= 0.261000
number of records for the series after dropping na: 1017
average return 0.001014
[-0.00261516  0.00260809]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.22433999999999998
```

```
=================== (20, '1W-FRI-100%', 2, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 31.543237
CAGR = 15.060000
Sharpe Ratio = 0.704000
Volatility= 0.254000
number of records for the series after dropping na: 1017
average return 0.001320
[-0.00253173  0.00256333]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.15513999999999994
```
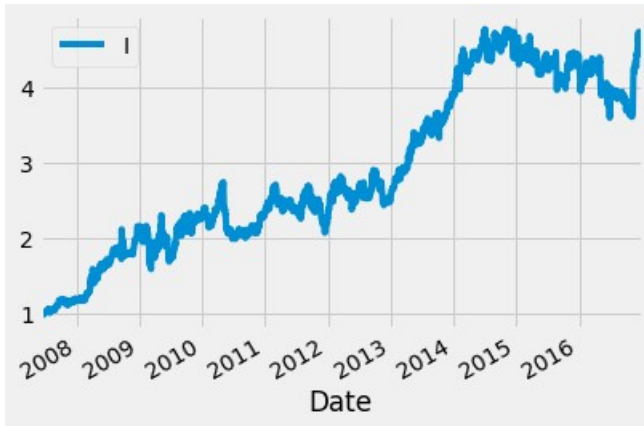
```
=================== (20, '1W-FRI-100%', 2, 2, 2, 0, 0) ===================
```

E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 37.018938
CAGR = 16.480000
Sharpe Ratio = 0.751000
Volatility= 0.255000
number of records for the series after dropping na: 1017
average return 0.001641
[-0.00260051 0.00264423]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.11006000000000005

=================== (20, '1W-FRI-100%', 3, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 17.635208
CAGR = 10.500000
Sharpe Ratio = 0.534000
Volatility= 0.257000
number of records for the series after dropping na: 1017
average return 0.000947
[-0.00264609 0.00263592]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:

0.23970000000000002

================== (20, '1W-FRI-100%', 3, 1, 2, 0, 0) ==================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 17.664676
CAGR = 10.510000
Sharpe Ratio = 0.534000
Volatility= 0.258000
number of records for the series after dropping na: 1017
average return 0.000980
[-0.00265215 0.00265519]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.23558

================== (20, '1W-FRI-100%', 3, 2, 1, 0, 0) ==================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 27.625606
CAGR = 13.930000
Sharpe Ratio = 0.657000
Volatility= 0.258000
number of records for the series after dropping na: 1017
average return 0.000944

```
[-0.00263438  0.00263669]
```
Do not reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is not small enough)
p_value:
0.24197999999999997

==================== (20, '1W-FRI-100%', 3, 2, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning: invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 31.974609
CAGR = 15.180000
Sharpe Ratio = 0.701000
Volatility= 0.258000
number of records for the series after dropping na: 1017
average return 0.000980
```
[-0.00262733  0.0026365 ]
```
Do not reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is not small enough)
p_value:
0.23107999999999995

==================== (20, '1W-FRI-100%', 4, 1, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning: invalid value encountered in double_scalars
  vratio = t/(lag*b);

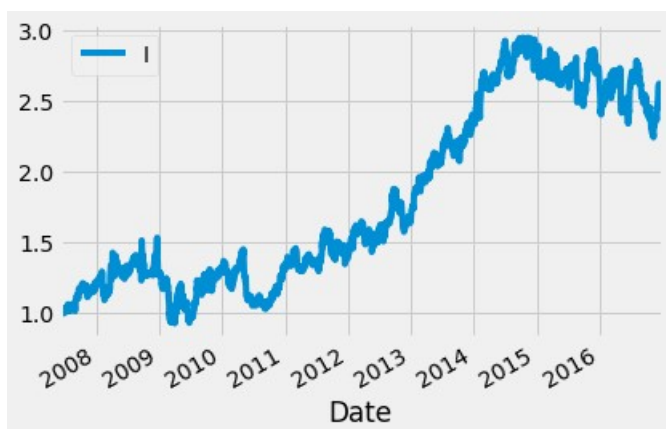TotaAnnReturn = 15.396768
CAGR = 9.580000

```
Sharpe Ratio = 0.498000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.000859
[-0.00264466  0.00269084]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.26402000000000003
```

```
=================== (20, '1W-FRI-100%', 4, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 15.765725
CAGR = 9.740000
Sharpe Ratio = 0.503000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.000895
[-0.00268451  0.0026921 ]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.25554
```

```
=================== (20, '1W-FRI-100%', 4, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```

```
TotaAnnReturn = 30.955417
CAGR = 14.900000
Sharpe Ratio = 0.688000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.001038
[-0.00260388  0.00259965]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.21965999999999997


=================== (20, '1W-FRI-100%', 4, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
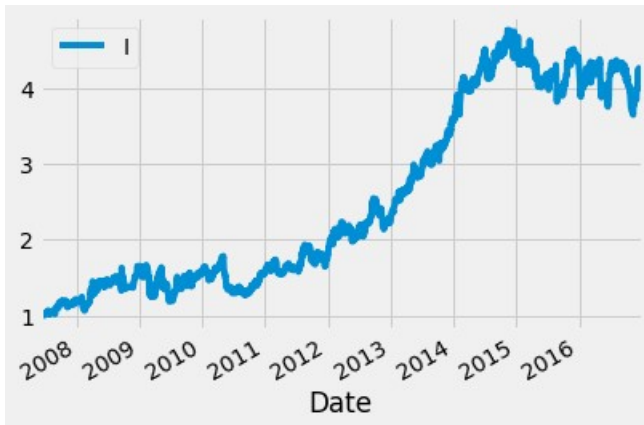


```
TotaAnnReturn = 32.064673
CAGR = 15.200000
Sharpe Ratio = 0.699000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.001038
[-0.00261731  0.00259195]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.2167


=================== (20, '1W-FRI-100%', 5, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
```
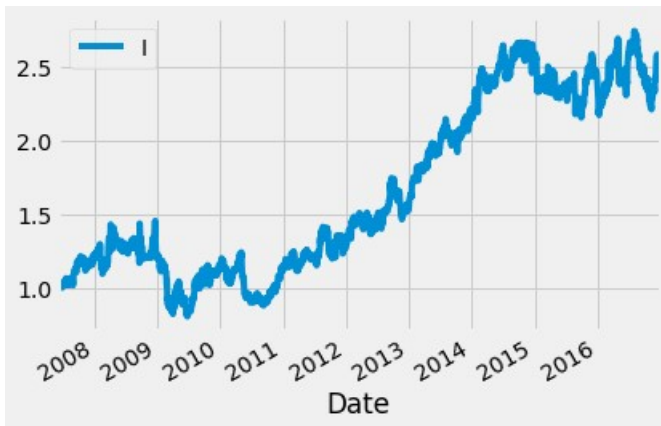
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 17.759177
CAGR = 10.550000
Sharpe Ratio = 0.530000
Volatility= 0.263000
number of records for the series after dropping na: 1017
average return 0.000545
[-0.00266034 0.00267424]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.3429

=================== (20, '1W-FRI-100%', 5, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 15.353619
CAGR = 9.560000
Sharpe Ratio = 0.494000
Volatility= 0.263000
number of records for the series after dropping na: 1017
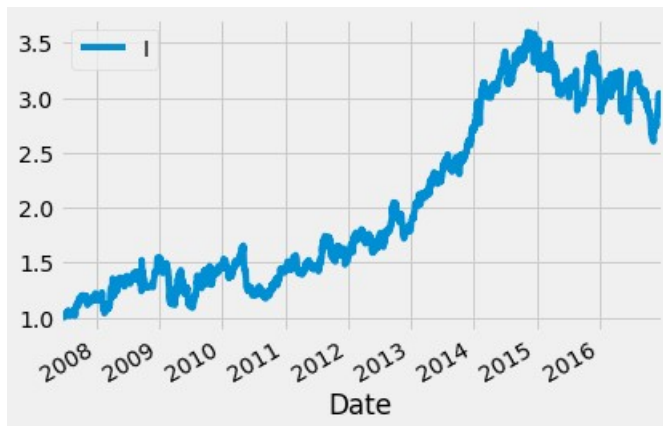average return 0.000545
[-0.00265611 0.0026665]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
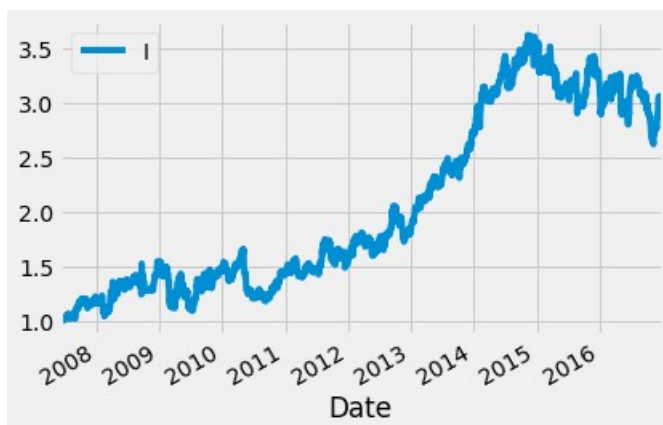or less (because p_value is not small enough)
p_value:
0.34334

=================== (20, '1W-FRI-100%', 5, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 19.929045
CAGR = 11.380000
Sharpe Ratio = 0.569000
Volatility= 0.255000
number of records for the series after dropping na: 1017
average return 0.000986
[-0.00259643 0.00261621]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.22636

=================== (20, '1W-FRI-100%', 5, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 20.139365
CAGR = 11.460000
Sharpe Ratio = 0.572000
Volatility= 0.255000
number of records for the series after dropping na: 1017
average return 0.000992
[-0.00258592 0.00262124]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
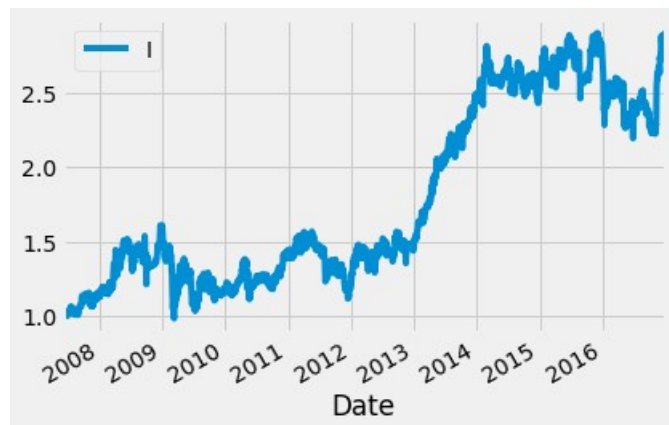
or less (because p_value is not small enough)
p_value:
0.22858

=================== (20, '2W-FRI-100%', 1, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 19.062851
CAGR = 11.050000
Sharpe Ratio = 0.551000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.000663
[-0.00264255 0.0026482]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
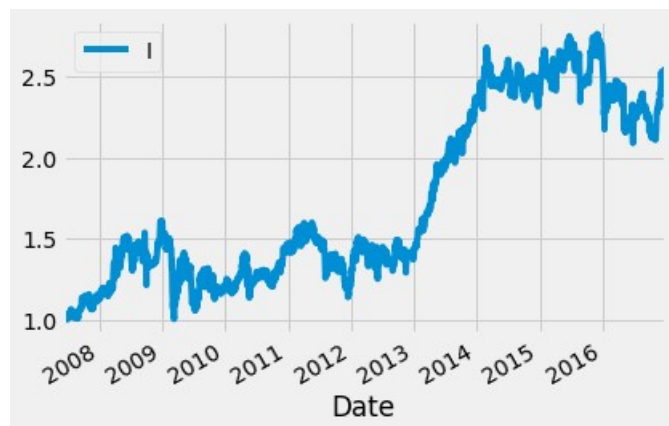or less (because p_value is not small enough)
p_value:
0.30820000000000003

=================== (20, '2W-FRI-100%', 1, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 15.483825
CAGR = 9.620000
Sharpe Ratio = 0.499000
Volatility= 0.260000
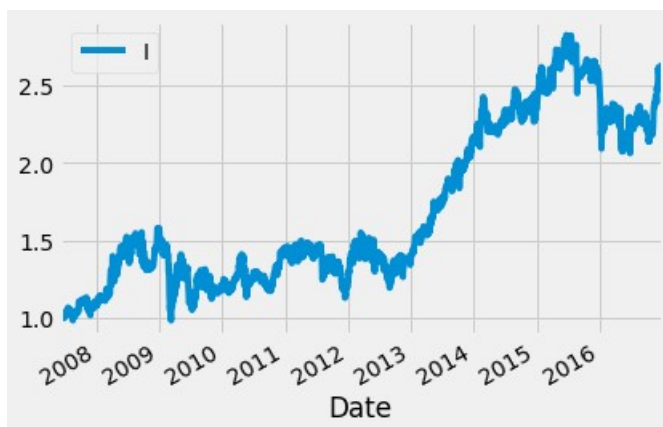number of records for the series after dropping na: 1017

average return 0.000679
[-0.00259496 0.00266227]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.30284

=================== (20, '2W-FRI-100%', 1, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 21.801866
CAGR = 12.050000
Sharpe Ratio = 0.590000
Volatility= 0.258000
number of records for the series after dropping na: 1017
average return 0.000422
[-0.00259083 0.00259203]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.37404000000000004

=================== (20, '2W-FRI-100%', 1, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

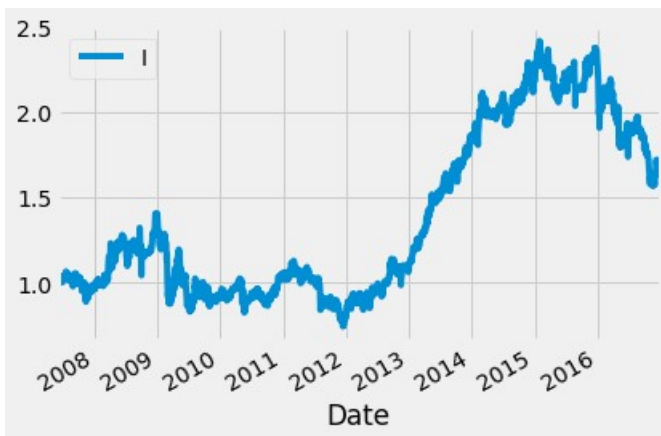TotaAnnReturn = 16.360181
CAGR = 9.990000

Sharpe Ratio = 0.515000
Volatility= 0.258000
number of records for the series after dropping na: 1017
average return 0.000371
[-0.00259399 0.00261086]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.3882

================== (20, '2W-FRI-100%', 2, 1, 1, 0, 0) ==================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
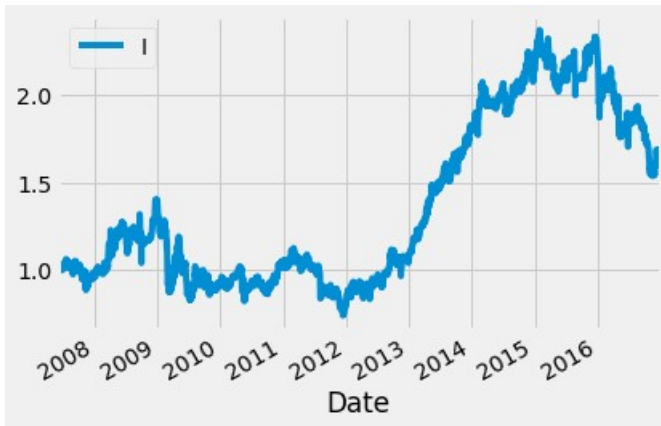 vratio = t/(lag*b);

TotaAnnReturn = 7.070635
CAGR = 5.370000
Sharpe Ratio = 0.340000
Volatility= 0.262000
number of records for the series after dropping na: 1017
average return -0.000044
[-0.00267474 0.00264092]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.50924

================== (20, '2W-FRI-100%', 2, 1, 2, 0, 0) ==================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

```
TotaAnnReturn = 6.766823
CAGR = 5.190000
Sharpe Ratio = 0.333000
Volatility= 0.262000
number of records for the series after dropping na: 1017
average return -0.000044
[-0.00262307  0.00266306]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.5109600000000001


=================== (20, '2W-FRI-100%', 2, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```
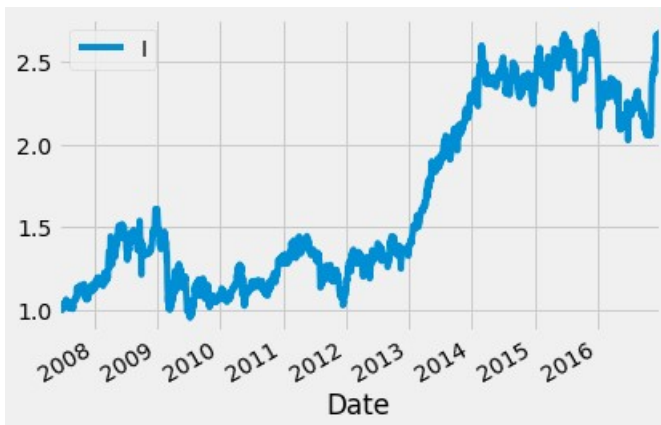


```
TotaAnnReturn = 16.770347
CAGR = 10.150000
Sharpe Ratio = 0.520000
Volatility= 0.259000
number of records for the series after dropping na: 1017
average return 0.000475
[-0.00255482  0.00260114]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.35814


=================== (20, '2W-FRI-100%', 2, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
```
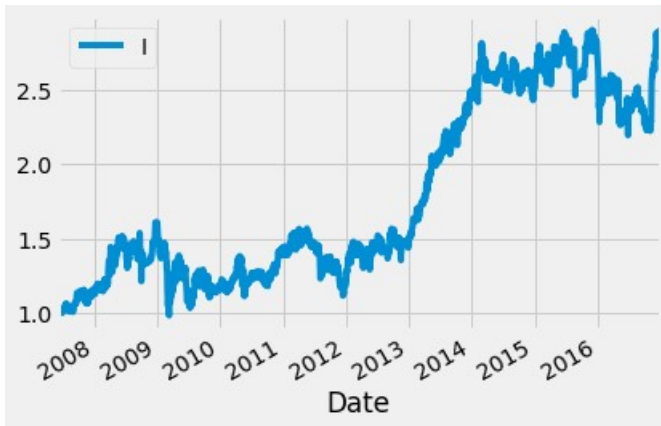
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 19.062851
CAGR = 11.050000
Sharpe Ratio = 0.551000
Volatility= 0.260000
number of records for the series after dropping na: 1017
average return 0.000663
[-0.00262349 0.0026221]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.30776000000000003

=================== (20, '2W-FRI-100%', 3, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 0.692370
CAGR = 0.650000
Sharpe Ratio = 0.158000
Volatility= 0.263000
number of records for the series after dropping na: 1017
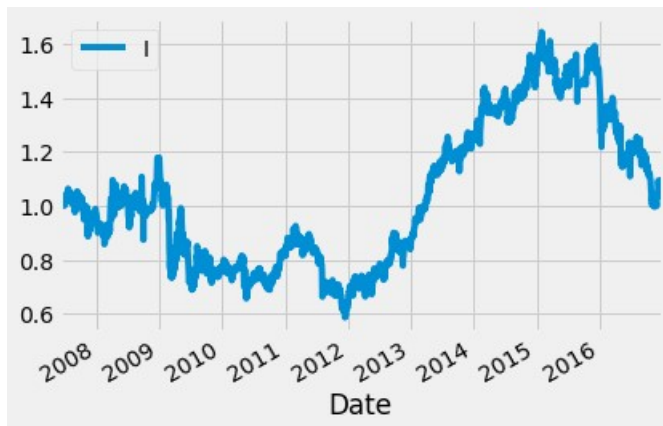average return -0.000200
[-0.00271667 0.00274056]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
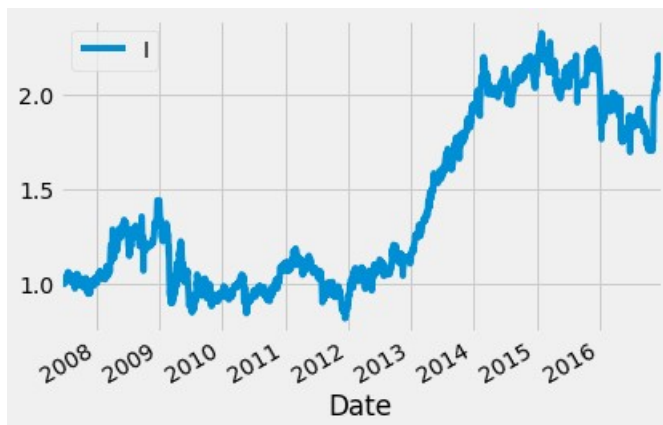or less (because p_value is not small enough)
p_value:
0.55802

=================== (20, '2W-FRI-100%', 3, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 0.751300
CAGR = 0.710000
Sharpe Ratio = 0.160000
Volatility= 0.263000
number of records for the series after dropping na: 1017
average return -0.000200
[-0.00272793 0.00275259]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.5542199999999999

=================== (20, '2W-FRI-100%', 3, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 11.996013
CAGR = 8.040000
Sharpe Ratio = 0.440000
Volatility= 0.261000
number of records for the series after dropping na: 1017
average return -0.000032
[-0.00264499 0.00265982]
Do not reject Ho = The population distribution of rule returns has an expected value of zero

or less (because p_value is not small enough)
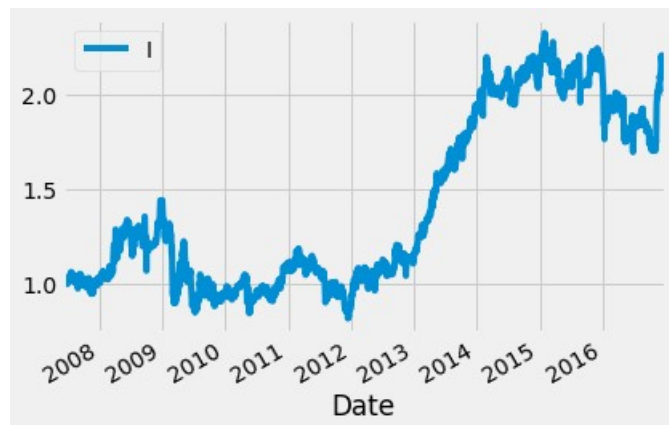p_value:
0.51204

==================== (20, '2W-FRI-100%', 3, 2, 2, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 11.996013
CAGR = 8.040000
Sharpe Ratio = 0.440000
Volatility= 0.261000
number of records for the series after dropping na: 1017
average return -0.000032
[-0.00268288 0.00265936]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
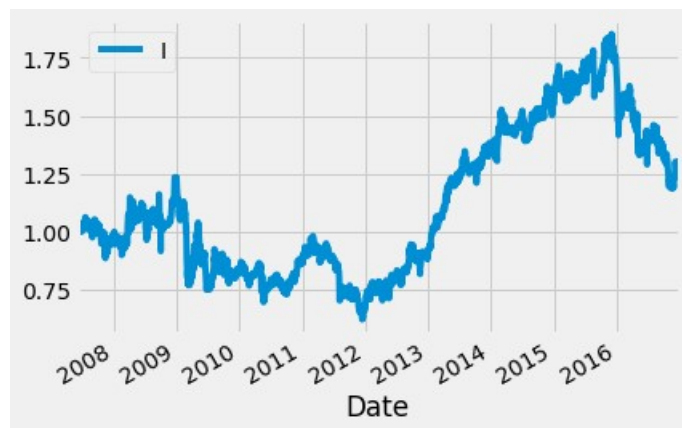or less (because p_value is not small enough)
p_value:
0.50522

==================== (20, '2W-FRI-100%', 4, 1, 1, 0, 0) ====================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 2.859193
CAGR = 2.480000
Sharpe Ratio = 0.230000
Volatility= 0.264000
number of records for the series after dropping na: 1017

average return -0.000273
[-0.0027589   0.00275966]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
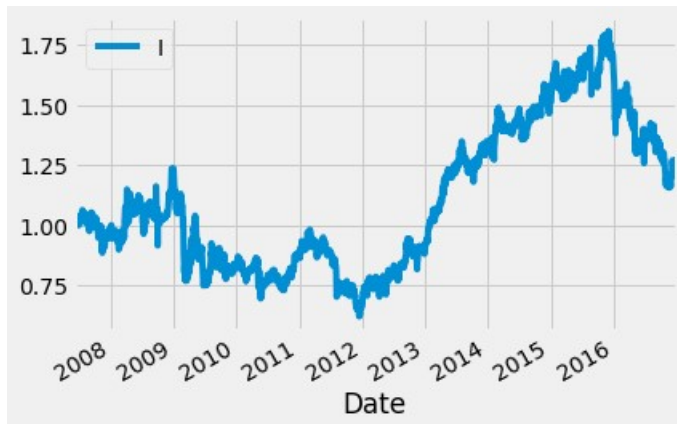or less (because p_value is not small enough)
p_value:
0.5714600000000001

=================== (20, '2W-FRI-100%', 4, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

TotaAnnReturn = 2.526232
CAGR = 2.220000
Sharpe Ratio = 0.219000
Volatility= 0.264000
number of records for the series after dropping na: 1017
average return -0.000273
[-0.00276398 0.00276355]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
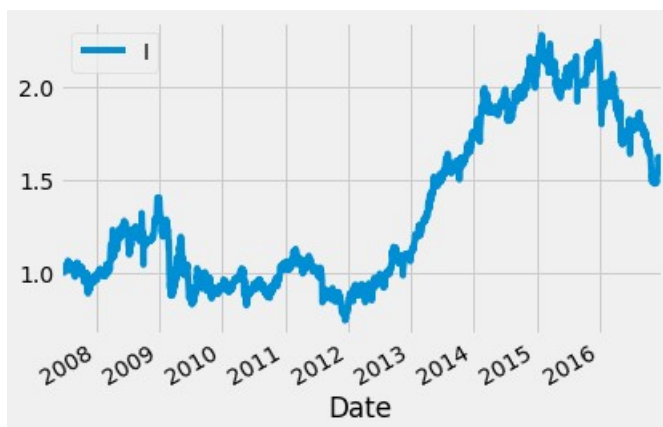or less (because p_value is not small enough)
p_value:
0.5766

=================== (20, '2W-FRI-100%', 4, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

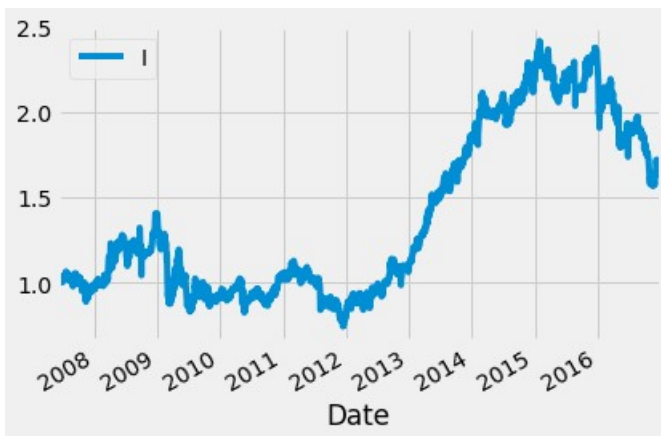TotaAnnReturn = 6.091053
CAGR = 4.760000

Sharpe Ratio = 0.317000
Volatility= 0.262000
number of records for the series after dropping na: 1017
average return -0.000044
[-0.00267322 0.00266652]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.51422

=================== (20, '2W-FRI-100%', 4, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
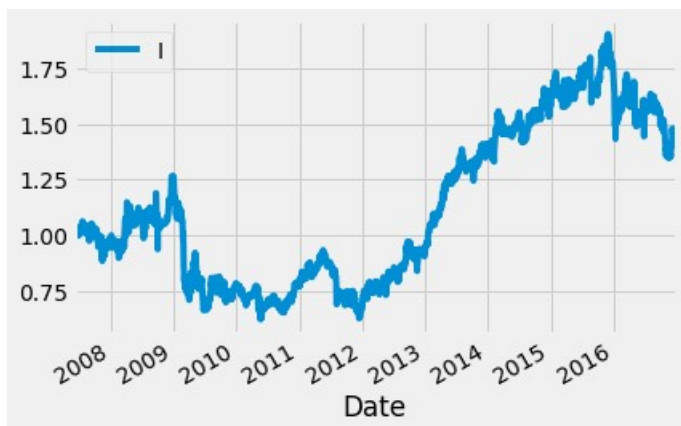 vratio = t/(lag*b);

TotaAnnReturn = 7.070635
CAGR = 5.370000
Sharpe Ratio = 0.340000
Volatility= 0.262000
number of records for the series after dropping na: 1017
average return -0.000044
[-0.00266202 0.00266739]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.51126

=================== (20, '2W-FRI-100%', 5, 1, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);

```
TotaAnnReturn = 4.647199
CAGR = 3.800000
Sharpe Ratio = 0.280000
Volatility= 0.267000
number of records for the series after dropping na: 1017
average return -0.000446
[-0.00277465  0.0028111 ]
```
Do not reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is not small enough)
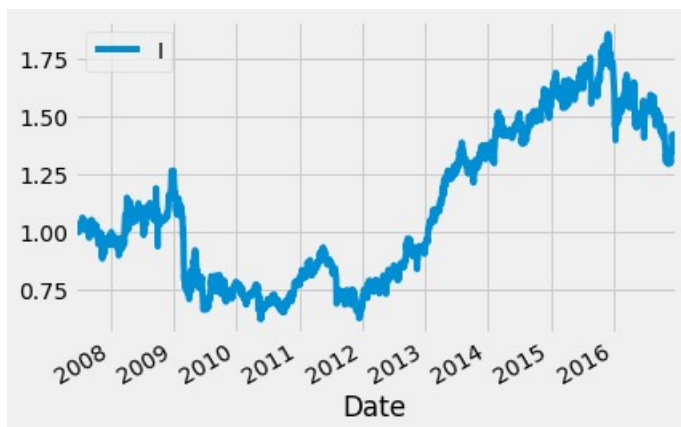```
p_value:
0.62354
```

```
=================== (20, '2W-FRI-100%', 5, 1, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);
```



```
TotaAnnReturn = 4.058221
CAGR = 3.380000
Sharpe Ratio = 0.264000
Volatility= 0.267000
number of records for the series after dropping na: 1017
average return -0.000446
[-0.002792    0.00281117]
```
Do not reject Ho = The population distribution of rule returns has an expected value of zero or less (because p_value is not small enough)
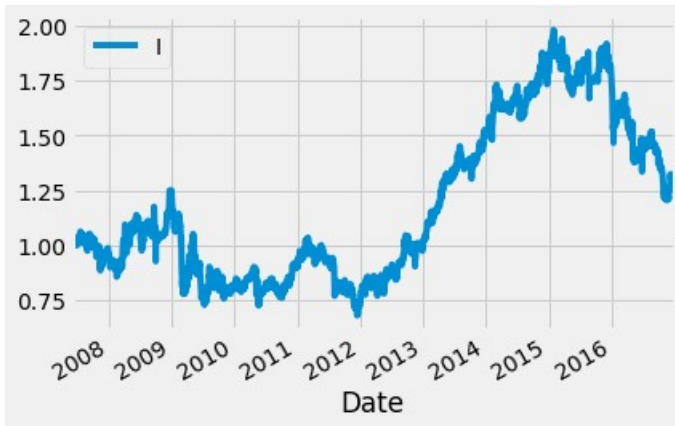```
p_value:
0.62124
```

```
=================== (20, '2W-FRI-100%', 5, 2, 1, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
```
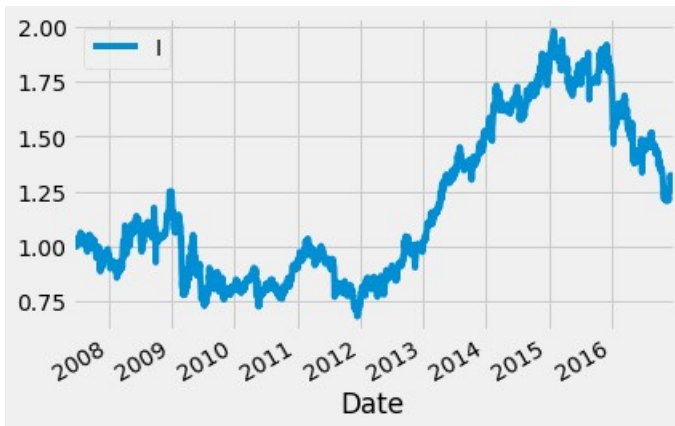
invalid value encountered in double_scalars
  vratio = t/(lag*b);



TotaAnnReturn = 3.082342
CAGR = 2.660000
Sharpe Ratio = 0.236000
Volatility= 0.263000
number of records for the series after dropping na: 1017
average return -0.000004
[-0.00271397  0.00273707]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.50232


=================== (20, '2W-FRI-100%', 5, 2, 2, 0, 0) ===================
E:\GitWorkSpace\v-ratio-momentum-and-ladder\computation_helper.py:278: RuntimeWarning:
invalid value encountered in double_scalars
  vratio = t/(lag*b);



TotaAnnReturn = 3.082342
CAGR = 2.660000
Sharpe Ratio = 0.236000
Volatility= 0.263000
number of records for the series after dropping na: 1017
average return -0.000004
[-0.0027312   0.00274938]
Do not reject Ho = The population distribution of rule returns has an expected value of zero
or less (because p_value is not small enough)
p_value:
0.50122

In [**18**]: