Portfolio Manager | Prices | Returns | Study Stocks | Assess Stocks | Build Portfolio | Assess Portfolio

Historical Prices

Source

Yahoo!

Ticker Symbol

XOM .....Exxon Mobil Corporation

Prices

Monthly

Start Date

2007-01-01

End Date

2017-03-31

Chart Type

CandleSticks

Technical Indicator

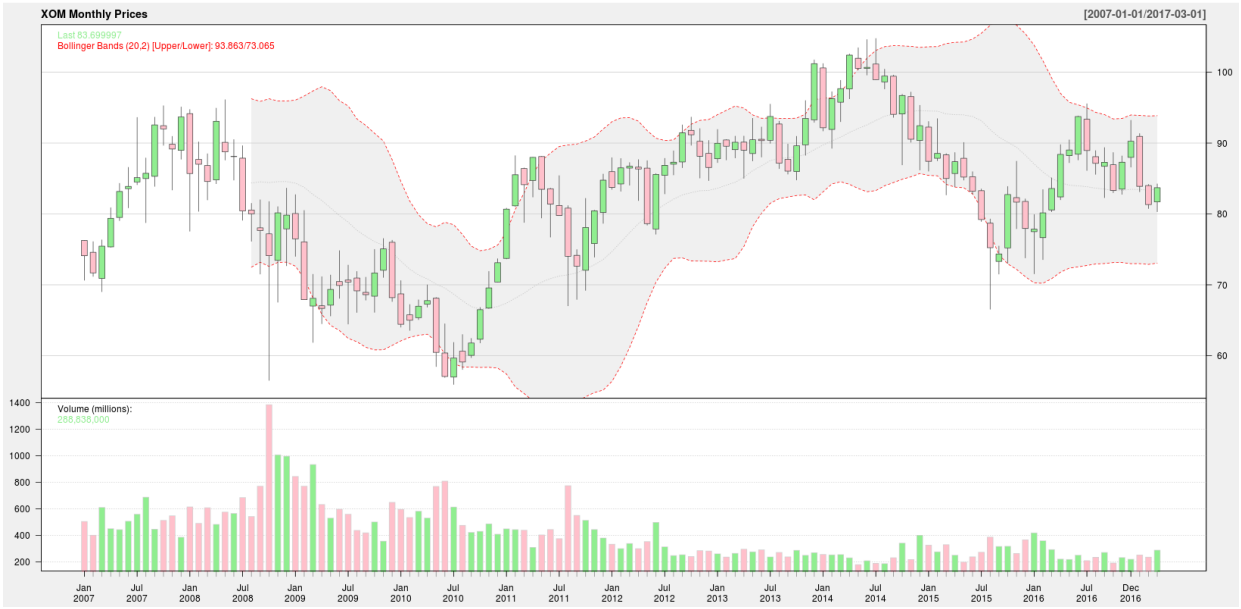
BBands

Show Volume

Go!

Export Prices

Download



Portfolio Manager | Prices | Returns | Study Stocks | Assess Stocks | Build Portfolio | Assess Portfolio

Historical Returns

Note: This section uses Yahoo! as the source.

Ticker Symbol(s)

XOM .....Exxon Mobil Corporation
BP .....BP p.l.c.
CVX .....Chevron Corporation cve.to cnq.to su.to

Prices

Monthly

Start Date

2007-01-01

End Date

2017-03-31

Chart Type

Lines

Plot historical returns

Go!

Plot growth of $1 invested

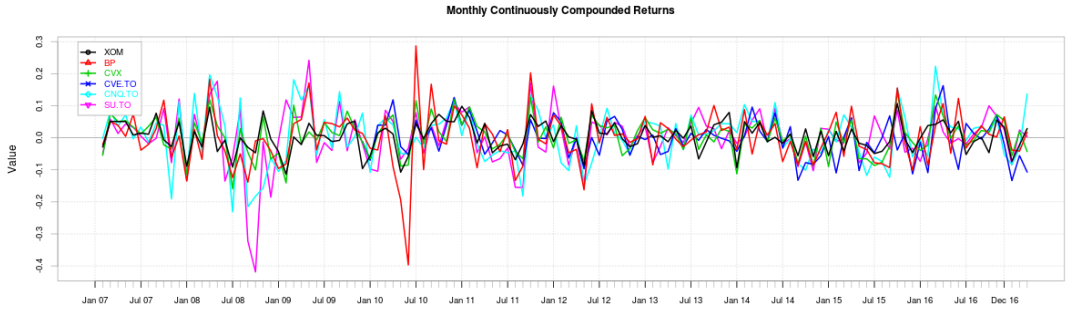
Go!

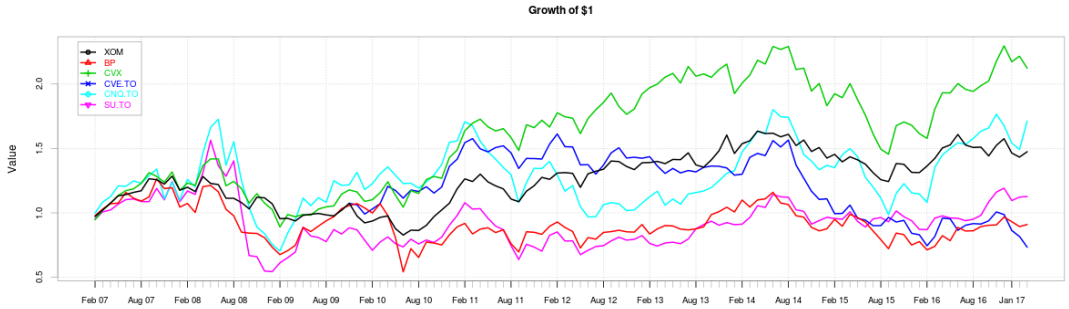
Plot drawdowns

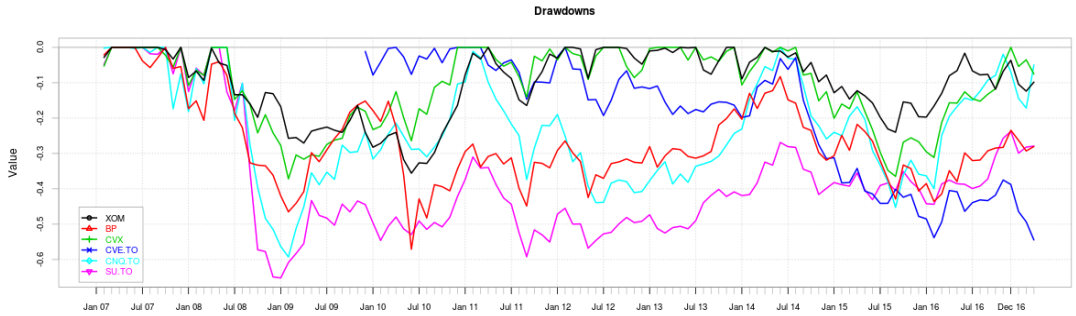
Go!

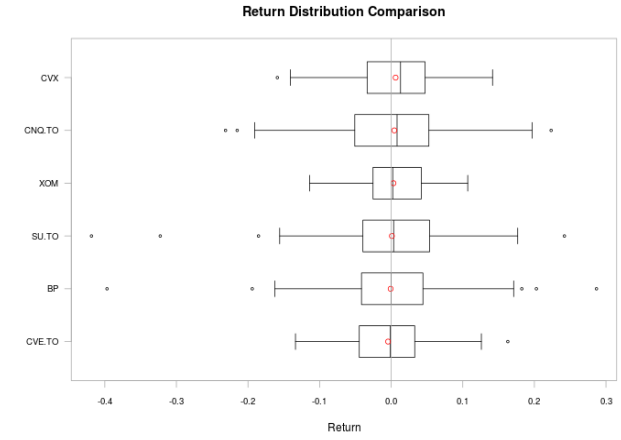
Compare return distributions

Go!









Portfolio Manager | Prices | Returns | Study Stocks | Assess Stocks | Build Portfolio | Assess Portfolio

Sample Statistics

Ticker Symbol(s)

XOM .....Exxon Mobil Corporation
BP .....BP p.l.c.
CVX .....Chevron Corporation cve.to cnq.to su.to

Start Date

2007-01-01

End Date

2017-03-31

Prices

Monthly

VaR Percent (may pick multiple)

5%

Describe selected assets

Go!

Plot sample pairwise correlation matrix

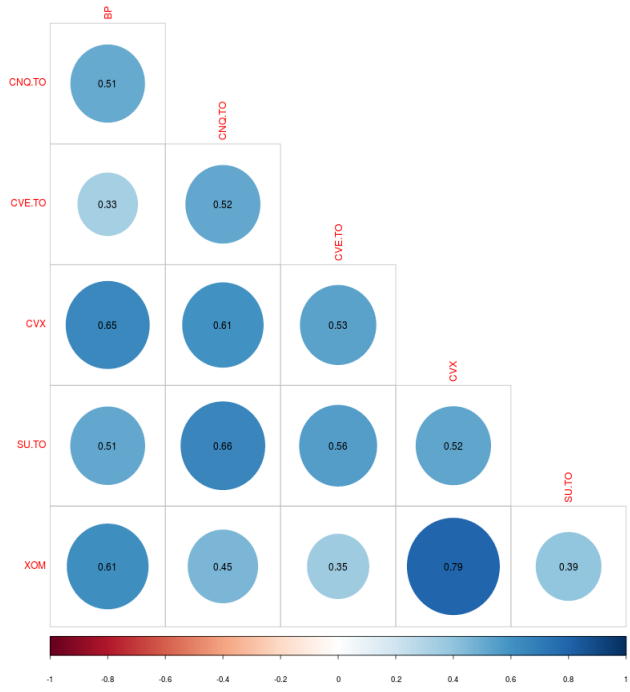
Go!

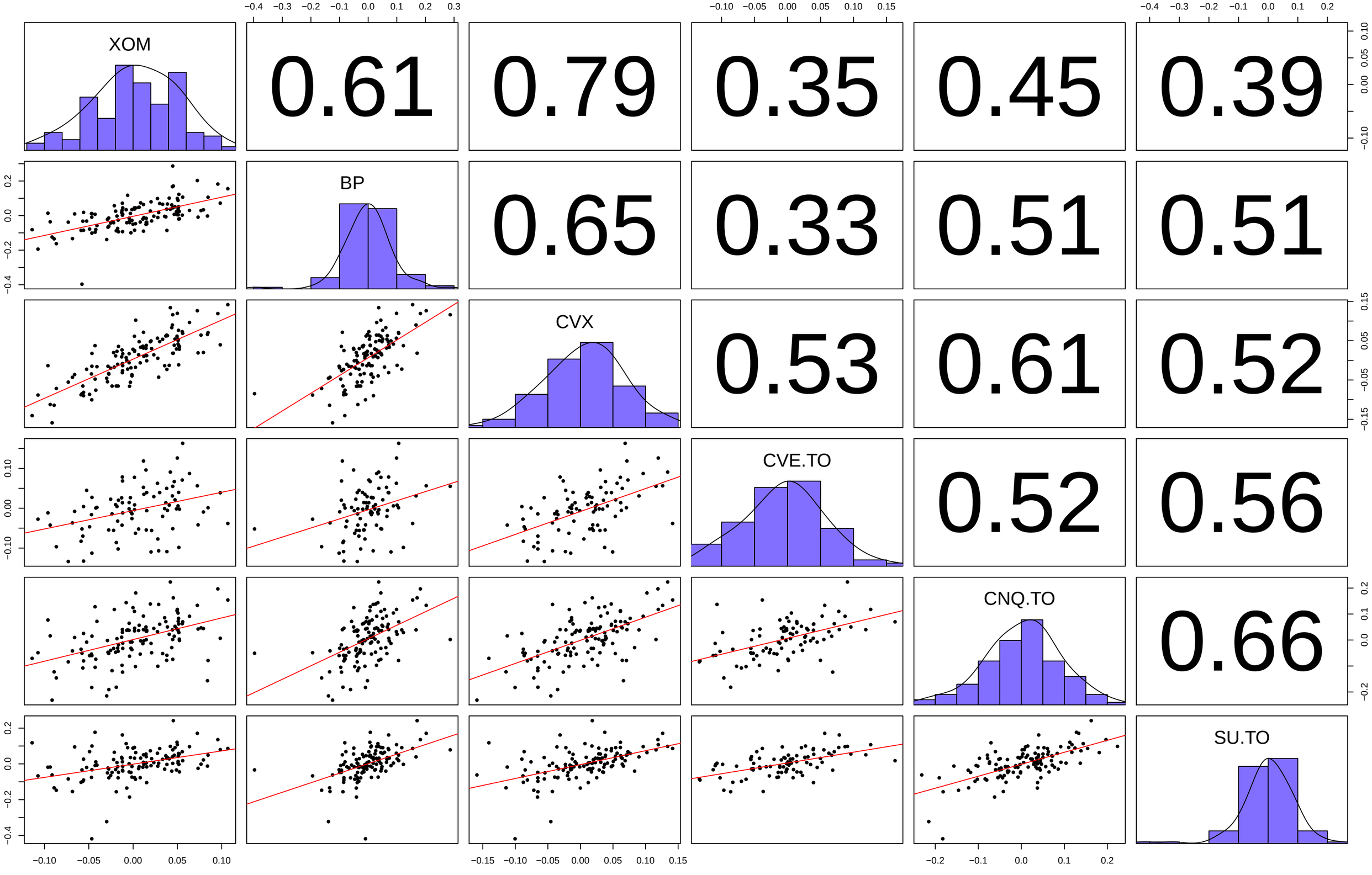
View pairwise scatter plots

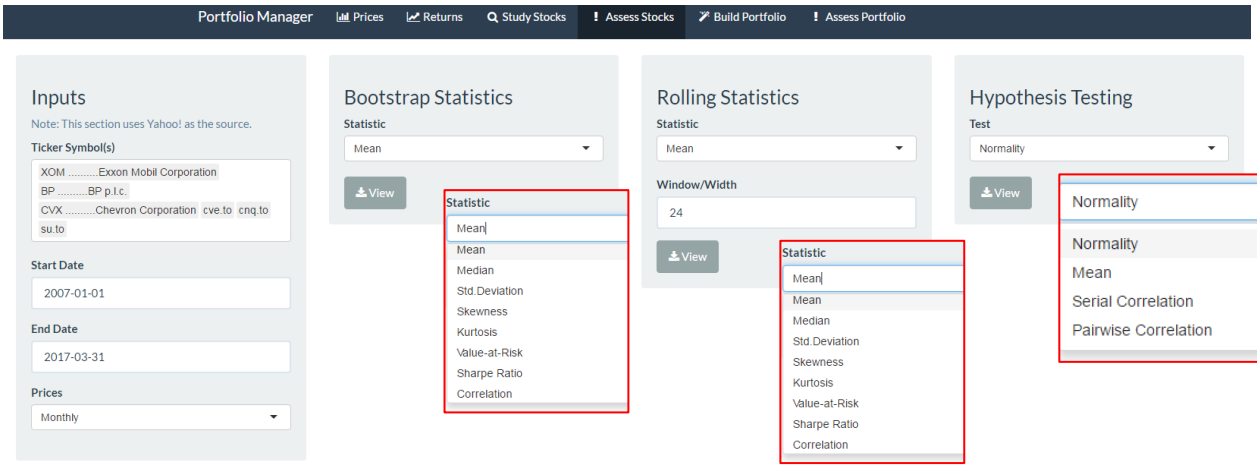
View

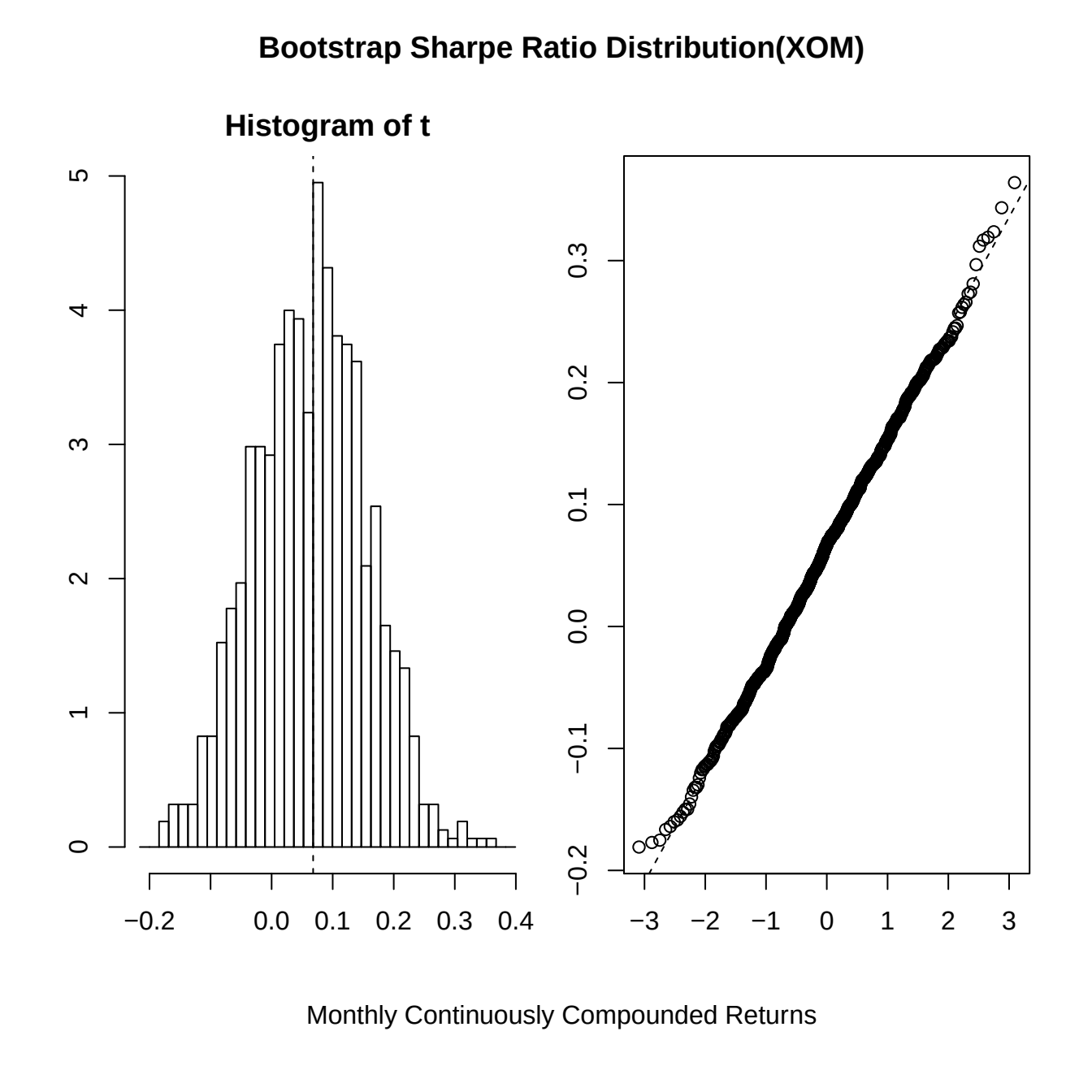
asset	n	mean	geometric mean	sd	median	min	max	range	skew	excess kurtosis	sharpe	5%
XOM	122	0.003	0.003	0.047	0.002	-0.114	0.107	0.221	-0.237	-0.313	0.068	-0.082
BP	122	-0.001	-0.001	0.084	0	-0.397	0.287	0.684	-0.392	3.936	-0.009	-0.116
CVX	122	0.006	0.006	0.059	0.013	-0.159	0.142	0.301	-0.194	-0.04	0.105	-0.084
CVE.TO	88	-0.004	-0.004	0.06	-0.002	-0.134	0.163	0.297	0.047	-0.048	-0.072	-0.103
CNQ.TO	122	0.004	0.004	0.086	0.008	-0.231	0.223	0.455	-0.192	0.181	0.051	-0.135
SU.TO	122	0.001	0.001	0.088	0.003	-0.419	0.242	0.661	-1.122	4.629	0.011	-0.126

Sample Pairwise Correlation Matrix
(Monthly Continuously Compounded Returns)




XOM
BP
CVX
CVE.TO
CNQ.TO
SU.TO
0.61
0.79
0.35
0.45
0.39
0.65
0.33
0.51
0.51
0.53
0.61
0.52
0.52
0.56
0.66


Portfolio Manager
Prices
Returns
Study Stocks
Assess Stocks
Build Portfolio
Assess Portfolio
Inputs
Note: This section uses Yahoo! as the source.
Ticker Symbol(s)
XOM .....Exxon Mobil Corporation
BP .....BP p.l.c.
CVX .....Chevron Corporation
cve.to
cnq.to
su.to
Start Date
2007-01-01
End Date
2017-03-31
Prices
Monthly
Bootstrap Statistics
Statistic
Mean
View
Statistic
Mean
Mean
Median
Std.Deviation
Skewness
Kurtosis
Value-at-Risk
Sharpe Ratio
Correlation
Rolling Statistics
Statistic
Mean
Window/Width
24
View
Statistic
Mean
Mean
Median
Std.Deviation
Skewness
Kurtosis
Value-at-Risk
Sharpe Ratio
Correlation
Hypothesis Testing
Test
Normality
View
Normality
Normality
Mean
Serial Correlation
Pairwise Correlation

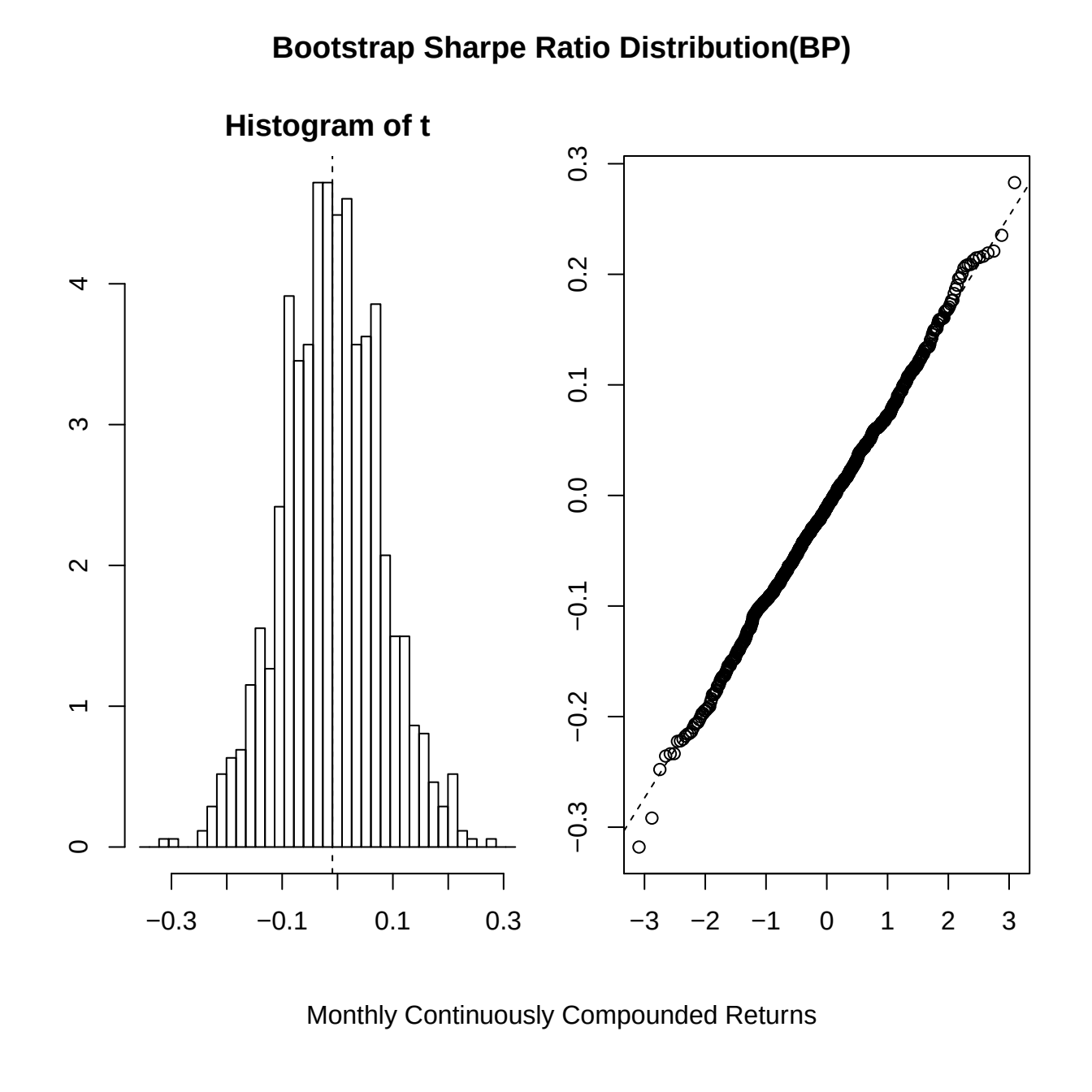

Bootstrap Sharpe Ratio Distribution(XOM)
Histogram of t
0
1
2
3
4
5
−0.2
0.0
0.1
0.2
0.3
0.4
−0.2
−0.1
0.0
0.1
0.2
0.3
−3
−2
−1
0
1
2
3
Monthly Continuously Compounded Returns

Bootstrap Summary and Confidence Interval(XOM)

```
$XOM

ORDINARY NONPARAMETRIC BOOTSTRAP


Call:
boot(data = x, statistic = sharpe.boot, R = R)


Bootstrap Statistics :
      original       bias    std. error
t1* 0.06801695 −0.004969103  0.09087015
```

```
$XOM
BOOTSTRAP CONFIDENCE INTERVAL CALCULATIONS
Based on 999 bootstrap replicates

CALL :
boot.ci(boot.out = x, conf = 0.95, type = c("norm", "perc"))

Intervals :
Level      Normal             Percentile
95%   (−0.1051,  0.2511 )   (−0.1130,  0.2326 )
Calculations and Intervals on Original Scale
```

Monthly Continuously Compounded Returns

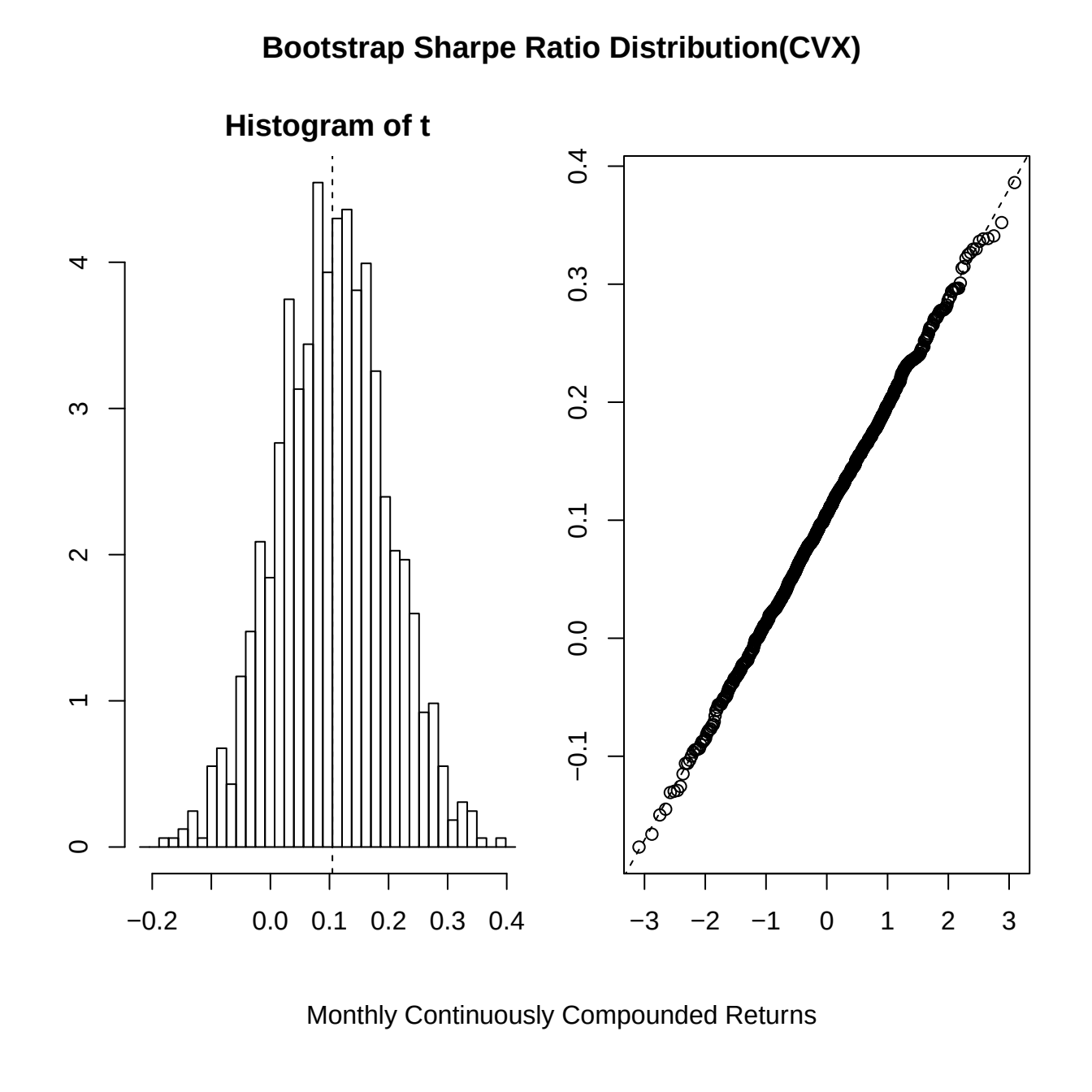

Bootstrap Sharpe Ratio Distribution(BP)
Histogram of t
0
1
2
3
4
−0.3
−0.1
0.1
0.3
−0.3
−0.2
−0.1
0.0
0.1
0.2
0.3
−3
−2
−1
0
1
2
3
Monthly Continuously Compounded Returns

Bootstrap Summary and Confidence Interval(BP)

```
$BP

ORDINARY NONPARAMETRIC BOOTSTRAP


Call:
boot(data = x, statistic = sharpe.boot, R = R)


Bootstrap Statistics :
        original      bias    std. error
t1* −0.009223651 −0.00123363   0.0877345
```

```
$BP
BOOTSTRAP CONFIDENCE INTERVAL CALCULATIONS
Based on 999 bootstrap replicates

CALL :
boot.ci(boot.out = x, conf = 0.95, type = c("norm", "perc"))

Intervals :
Level      Normal             Percentile
95%   (−0.1799,  0.1640 )   (−0.1926,  0.1671 )
Calculations and Intervals on Original Scale
```

Monthly Continuously Compounded Returns

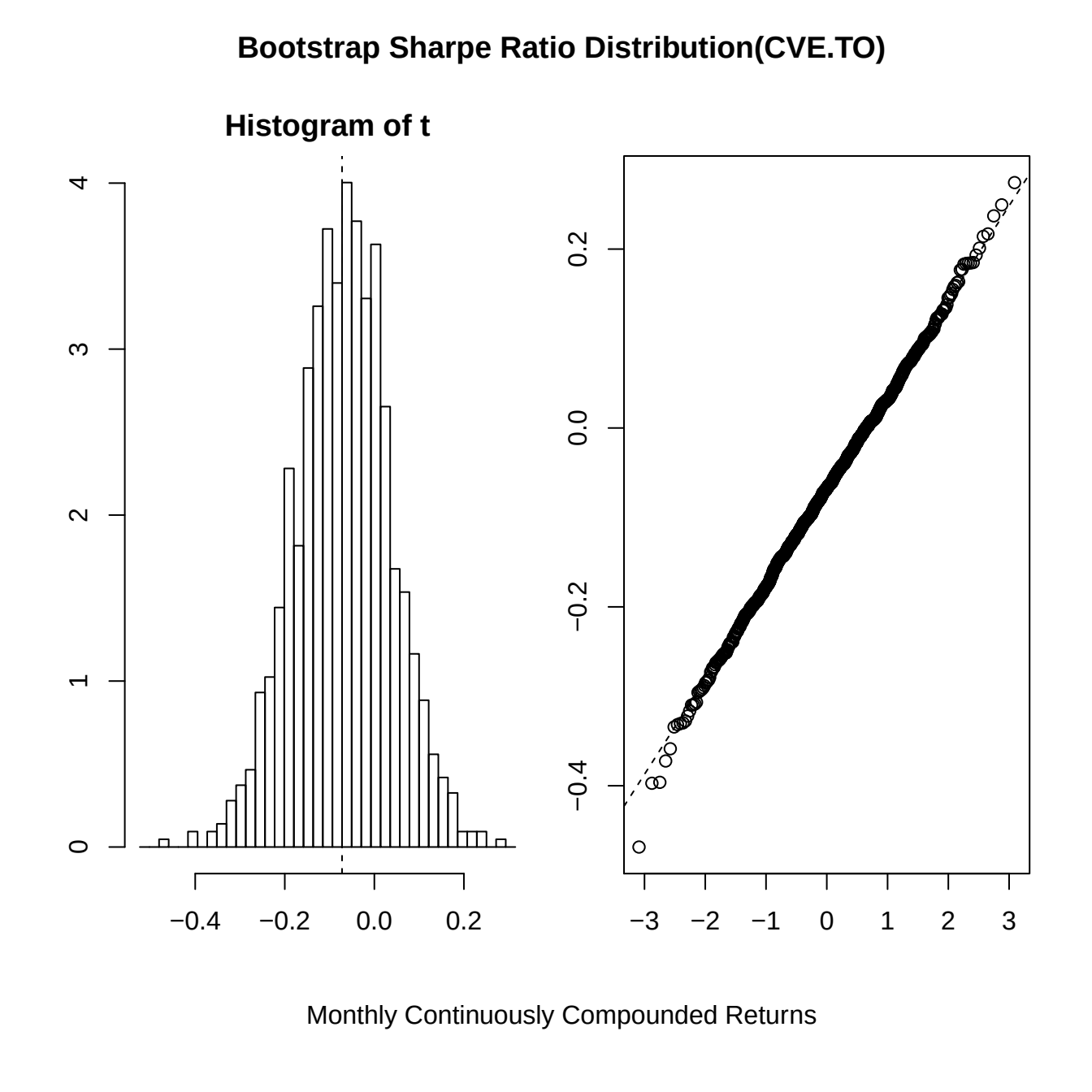

Bootstrap Sharpe Ratio Distribution(CVX)
Histogram of t
0
1
2
3
4
−0.2
0.0
0.1
0.2
0.3
0.4
−0.1
0.0
0.1
0.2
0.3
0.4
−3
−2
−1
0
1
2
3
Monthly Continuously Compounded Returns

Bootstrap Summary and Confidence Interval(CVX)

```
$CVX

ORDINARY NONPARAMETRIC BOOTSTRAP


Call:
boot(data = x, statistic = sharpe.boot, R = R)


Bootstrap Statistics :
    original        bias    std. error
t1* 0.104965 −7.533923e−05  0.09192288
```

```
$CVX
BOOTSTRAP CONFIDENCE INTERVAL CALCULATIONS
Based on 999 bootstrap replicates

CALL :
boot.ci(boot.out = x, conf = 0.95, type = c("norm", "perc"))

Intervals :
Level      Normal             Percentile
95%   (−0.0751,  0.2852 )   (−0.0793,  0.2799 )
Calculations and Intervals on Original Scale
```

Monthly Continuously Compounded Returns

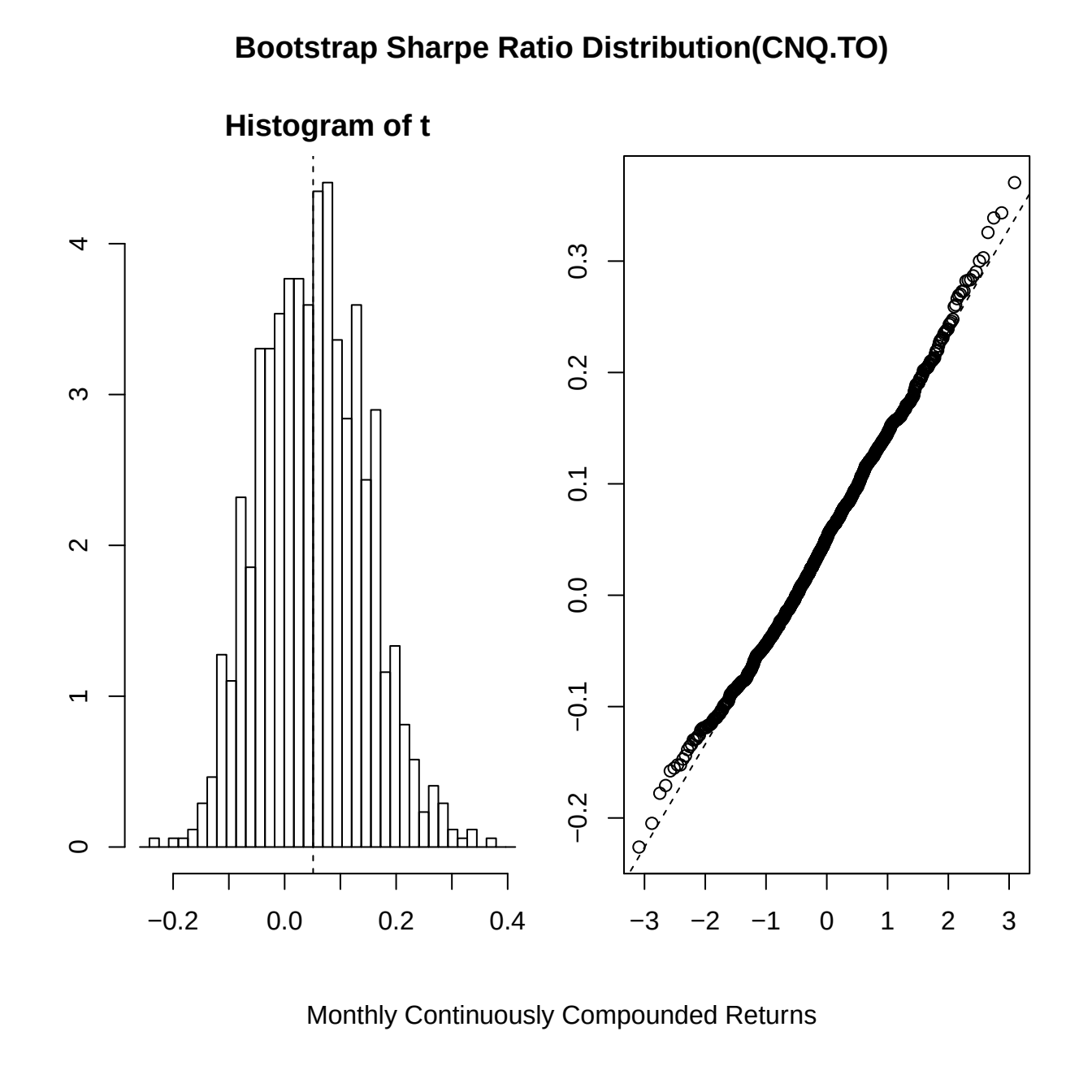

Bootstrap Sharpe Ratio Distribution(CVE.TO)
Histogram of t
0
1
2
3
4
−0.4
−0.2
0.0
0.2
0.2
0.0
−0.2
−0.4
−3
−2
−1
0
1
2
3
Monthly Continuously Compounded Returns

Bootstrap Summary and Confidence Interval(CVE.TO)

```
$CVE.TO

ORDINARY NONPARAMETRIC BOOTSTRAP


Call:
boot(data = x, statistic = sharpe.boot, R = R)


Bootstrap Statistics :
       original      bias    std. error
t1* −0.07213664 0.002720539   0.1059246
```

```
$CVE.TO
BOOTSTRAP CONFIDENCE INTERVAL CALCULATIONS
Based on 999 bootstrap replicates

CALL :
boot.ci(boot.out = x, conf = 0.95, type = c("norm", "perc"))

Intervals :
Level      Normal             Percentile
95%   (−0.2825,  0.1328 )   (−0.2822,  0.1345 )
Calculations and Intervals on Original Scale
```

Monthly Continuously Compounded Returns

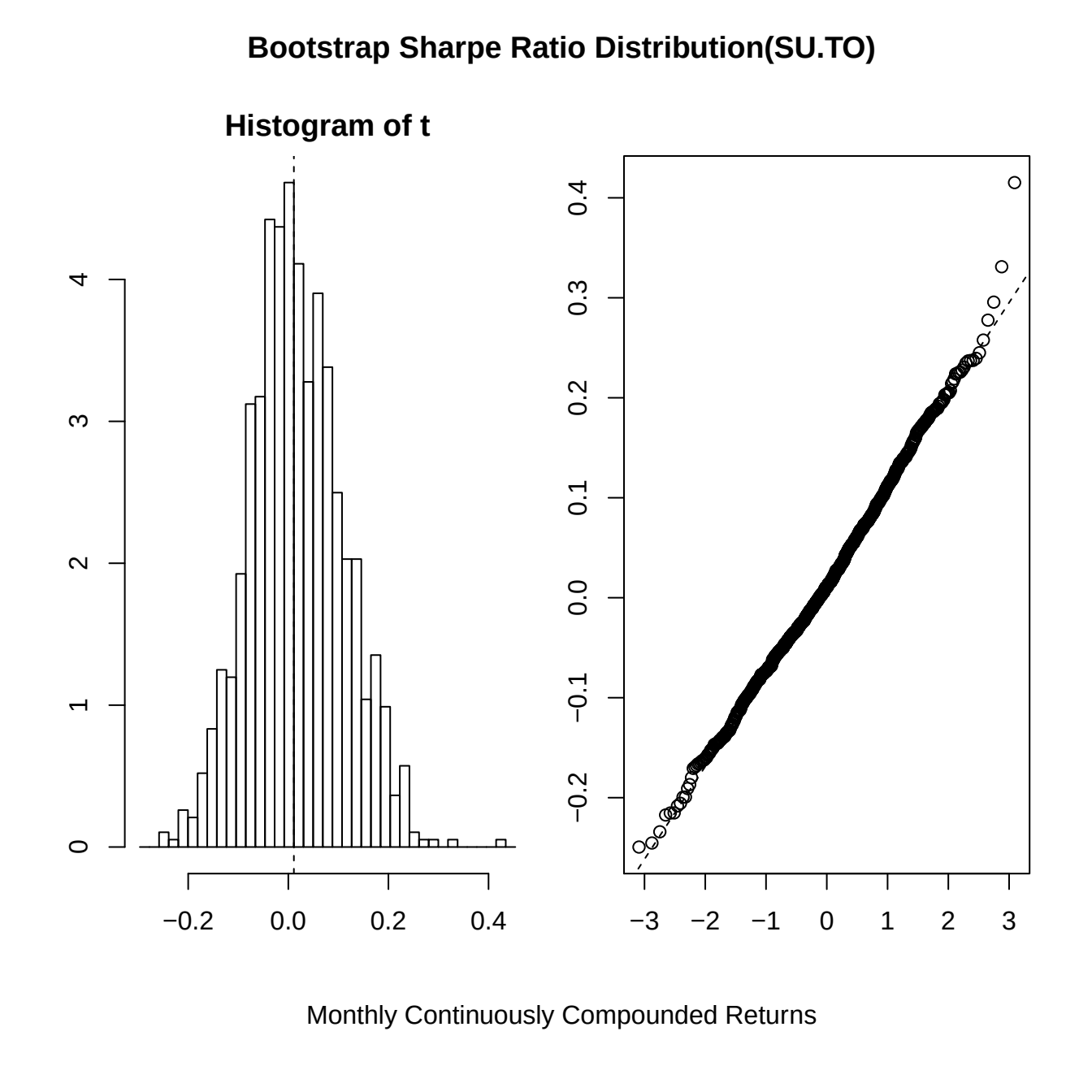

Bootstrap Sharpe Ratio Distribution(CNQ.TO)
Histogram of t
0
1
2
3
4
−0.2
0.0
0.2
0.4
−0.2
−0.1
0.0
0.1
0.2
0.3
−3
−2
−1
0
1
2
3
Monthly Continuously Compounded Returns

Bootstrap Summary and Confidence Interval(CNQ.TO)

```
$CNQ.TO

ORDINARY NONPARAMETRIC BOOTSTRAP


Call:
boot(data = x, statistic = sharpe.boot, R = R)


Bootstrap Statistics :
      original       bias    std. error
t1* 0.05116373 0.0002820426   0.0925779
```

```
$CNQ.TO
BOOTSTRAP CONFIDENCE INTERVAL CALCULATIONS
Based on 999 bootstrap replicates

CALL :
boot.ci(boot.out = x, conf = 0.95, type = c("norm", "perc"))

Intervals :
Level      Normal             Percentile
95%   (−0.1306,  0.2323 )   (−0.1171,  0.2372 )
Calculations and Intervals on Original Scale
```

Monthly Continuously Compounded Returns

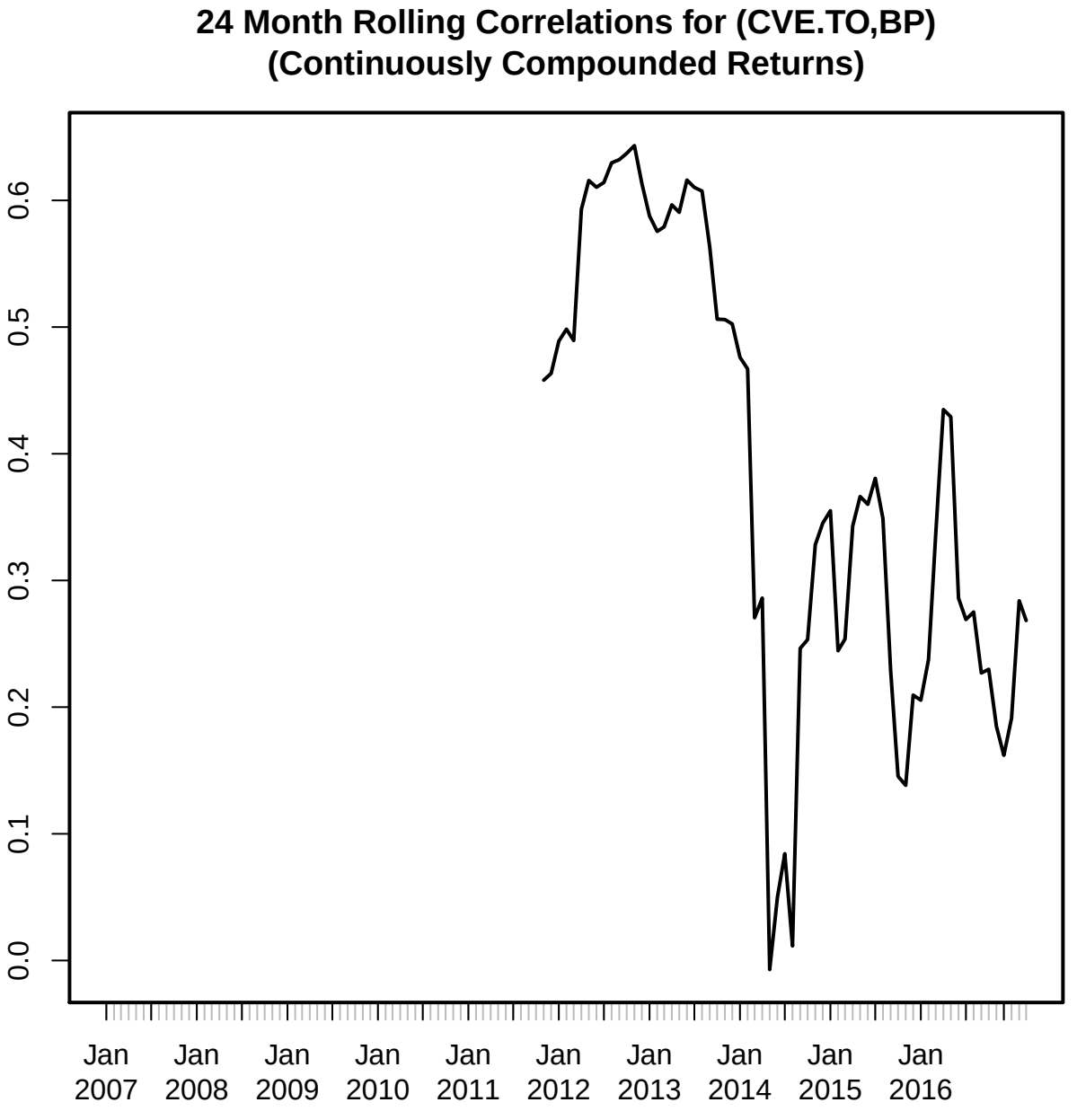

Bootstrap Sharpe Ratio Distribution(SU.TO)
Histogram of t
0
1
2
3
4
−0.2
0.0
0.2
0.4
−0.2
−0.1
0.0
0.1
0.2
0.3
0.4
−3
−2
−1
0
1
2
3
Monthly Continuously Compounded Returns

Bootstrap Summary and Confidence Interval(SU.TO)

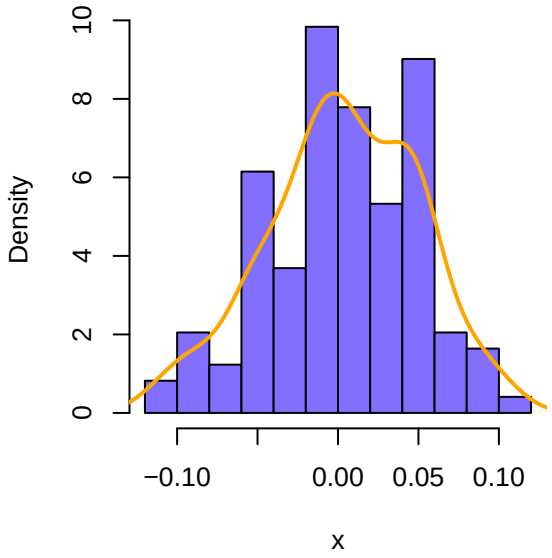
```
$SU.TO

ORDINARY NONPARAMETRIC BOOTSTRAP


Call:
boot(data = x, statistic = sharpe.boot, R = R)


Bootstrap Statistics :
      original      bias    std. error
t1* 0.01115648 0.005659694  0.09278012
```

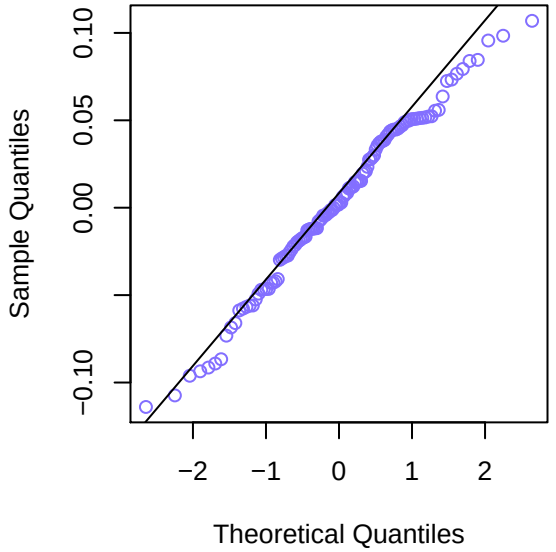
```
$SU.TO
BOOTSTRAP CONFIDENCE INTERVAL CALCULATIONS
Based on 999 bootstrap replicates

CALL :
boot.ci(boot.out = x, conf = 0.95, type = c("norm", "perc"))

Intervals :
Level      Normal             Percentile
95%   (−0.1763,  0.1873 )   (−0.1572,  0.2034 )
Calculations and Intervals on Original Scale
```

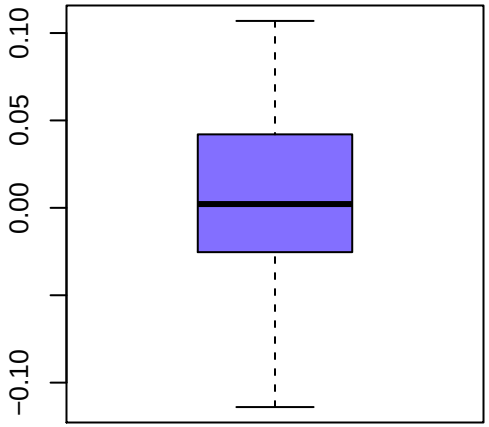
Monthly Continuously Compounded Returns


24 Month Rolling Correlations for (CVE.TO,BP)
(Continuously Compounded Returns)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Jan 2007
Jan 2008
Jan 2009
Jan 2010
Jan 2011
Jan 2012
Jan 2013
Jan 2014
Jan 2015
Jan 2016

Normality Test for XOM
(Monthly Continuously Compounded Returns)

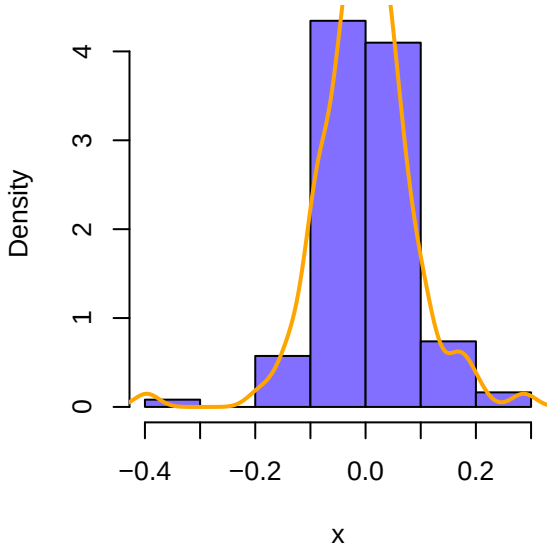


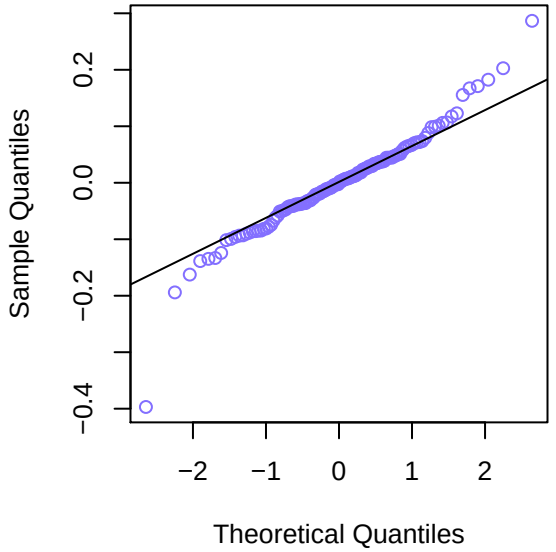


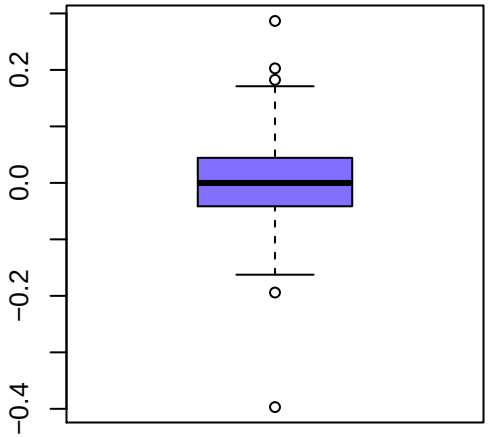



```
Jarque Bera Test

X-squared = 1.6353, df = 2, p-value = 0.441
```

Normality Test for BP
(Monthly Continuously Compounded Returns)

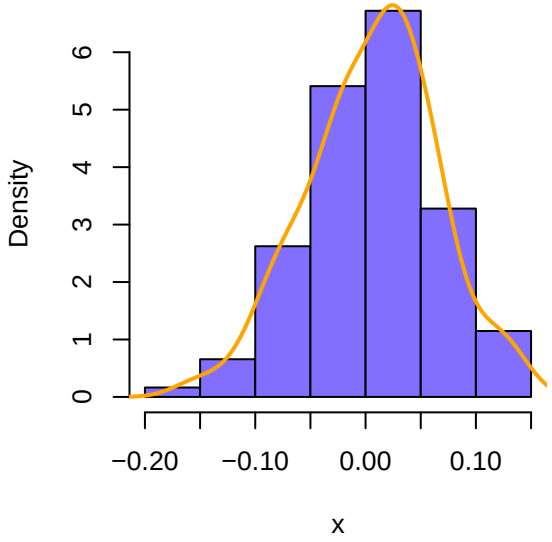


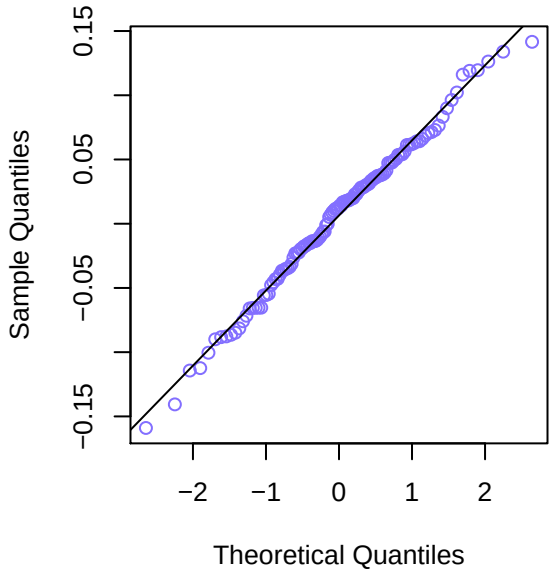


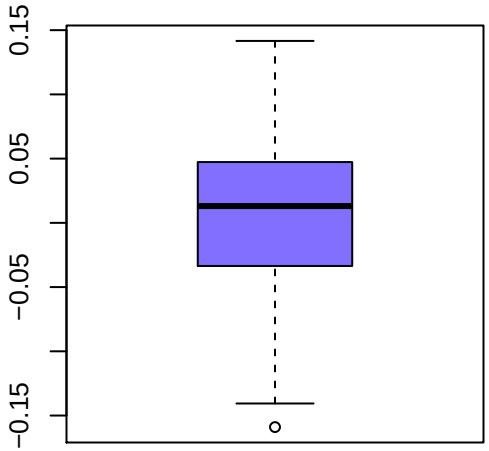



```
Jarque Bera Test

X-squared = 81.8839, df = 2, p-value < 2.2e-
```

Normality Test for CVX
(Monthly Continuously Compounded Returns)

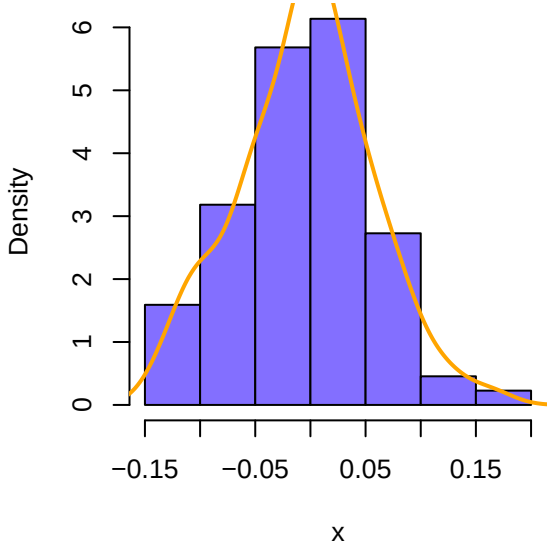


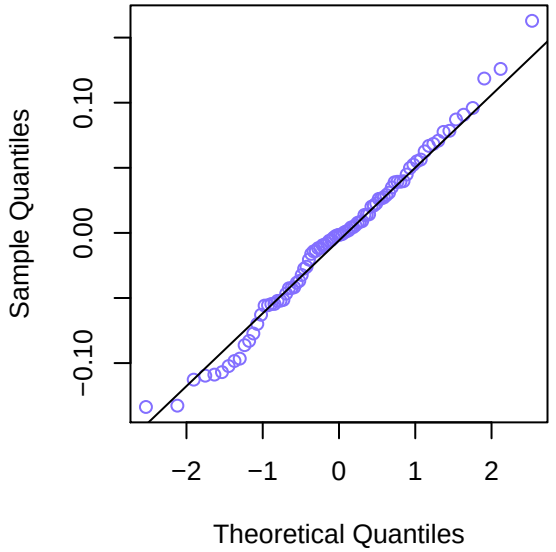


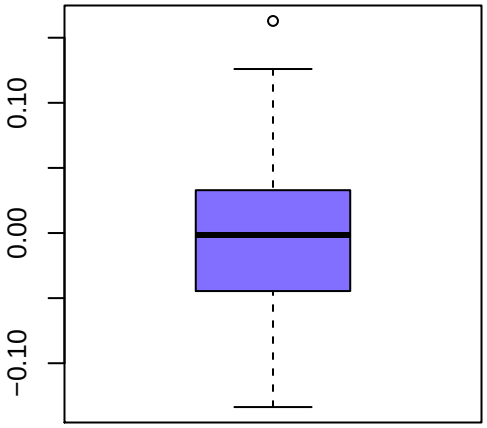



```
Jarque Bera Test

X-squared = 0.7743, df = 2, p-value = 0.679
```

Normality Test for CVE.TO
(Monthly Continuously Compounded Returns)

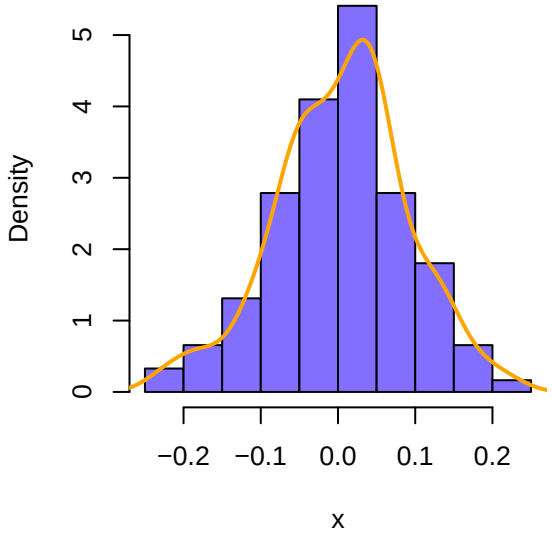


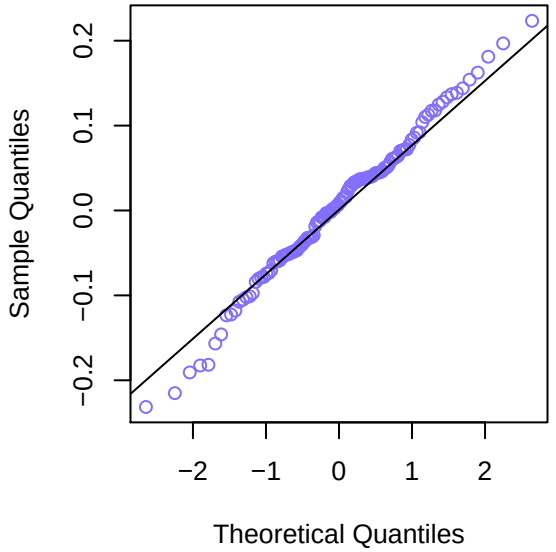


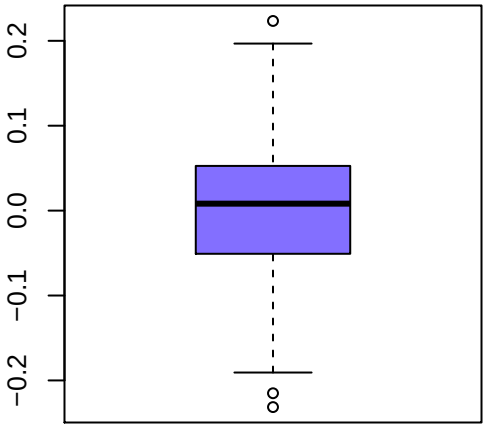



```
Jarque Bera Test

X-squared = 0.0413, df = 2, p-value = 0.979
```

Normality Test for CNQ.TO
(Monthly Continuously Compounded Returns)

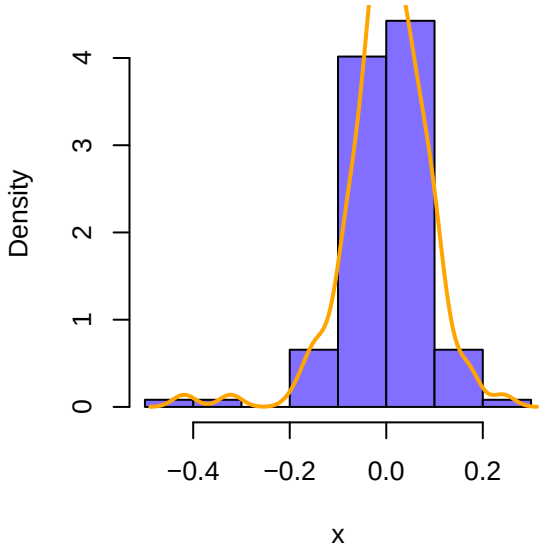


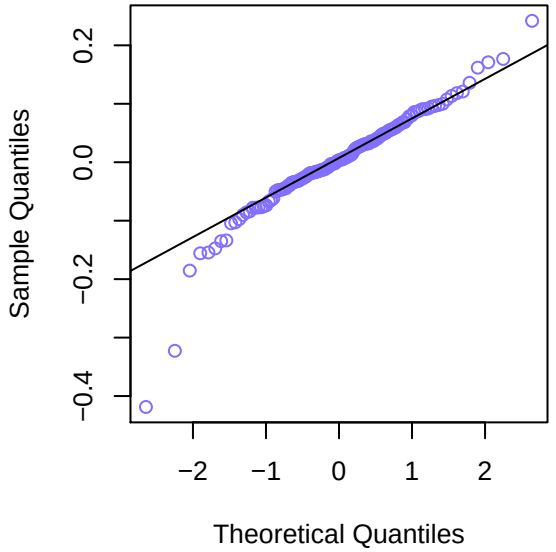


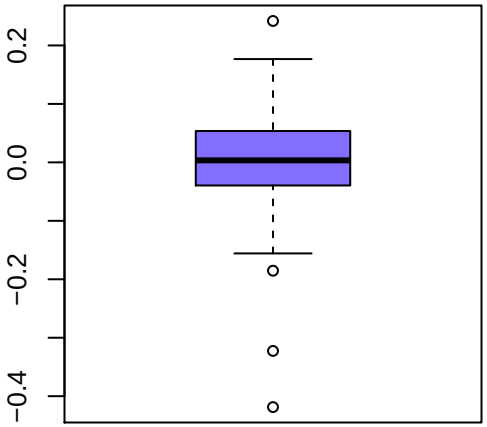



```
Jarque Bera Test

X-squared = 0.916, df = 2, p-value = 0.6325
```

Normality Test for SU.TO
(Monthly Continuously Compounded Returns)

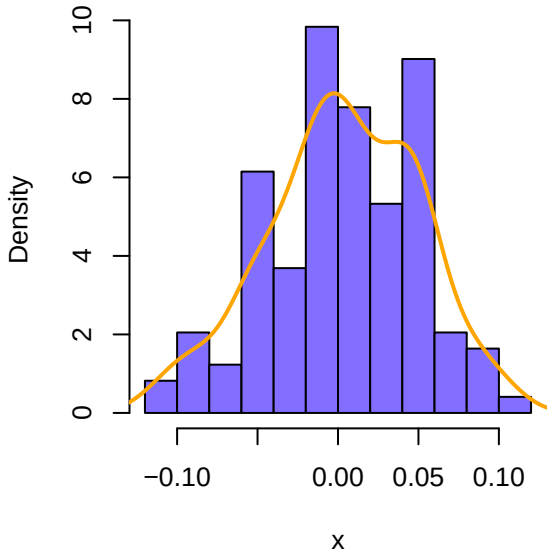


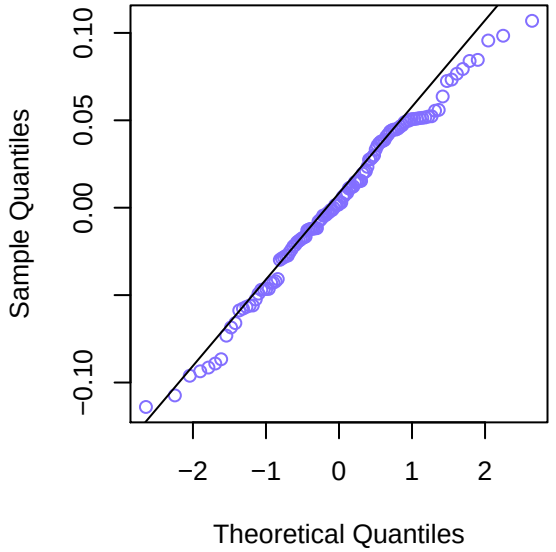


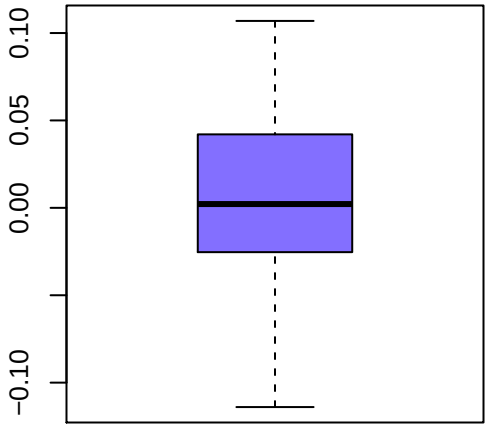



```
Jarque Bera Test

X-squared = 134.4916, df = 2, p-value < 2.2e-16
```

Normality Test for XOM
(Monthly Continuously Compounded Returns)

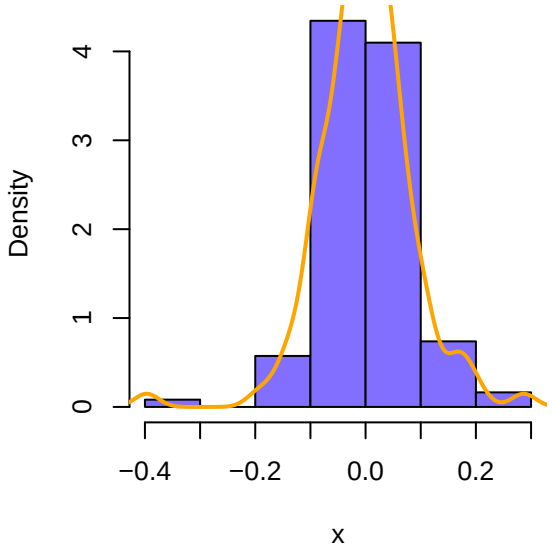


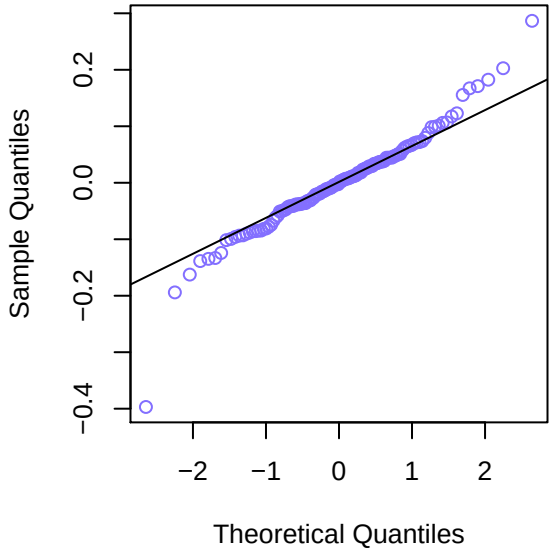


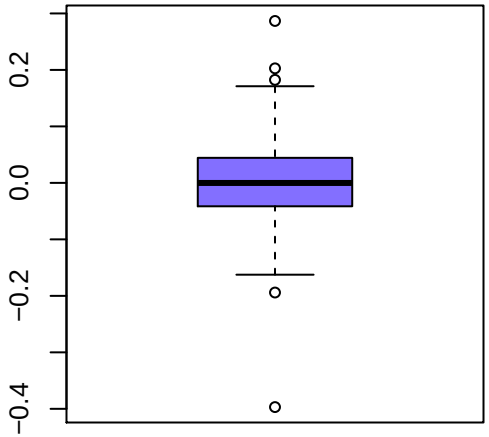



```
Jarque Bera Test

X-squared = 1.6353, df = 2, p-value = 0.441
```

Normality Test for BP
(Monthly Continuously Compounded Returns)

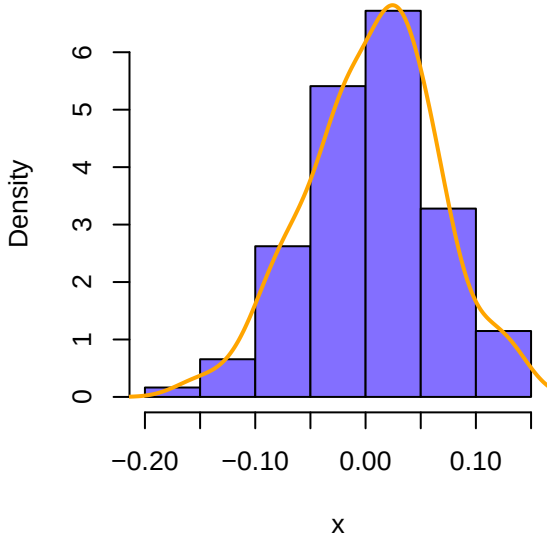


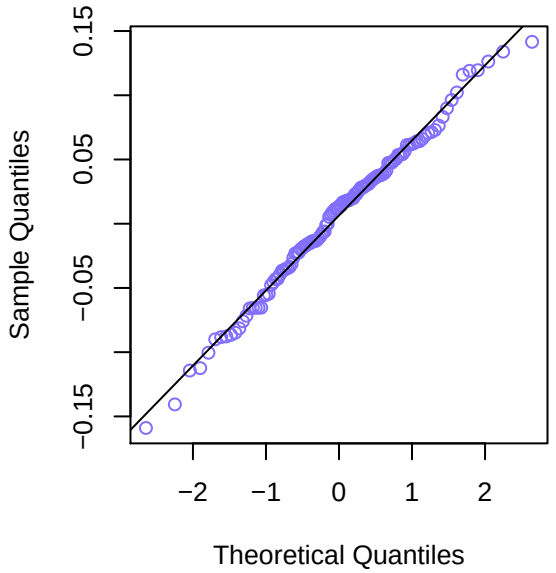


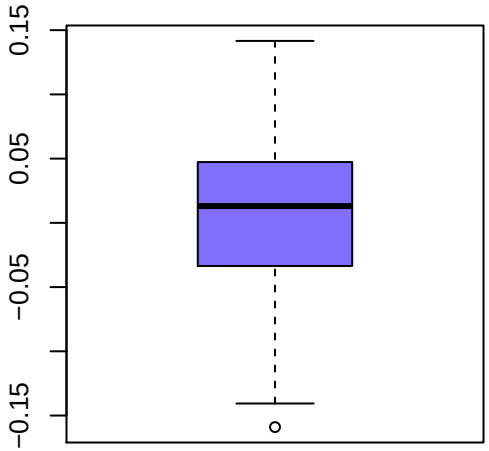



```
Jarque Bera Test

X-squared = 81.8839, df = 2, p-value < 2.2e-
```

Normality Test for CVX
(Monthly Continuously Compounded Returns)

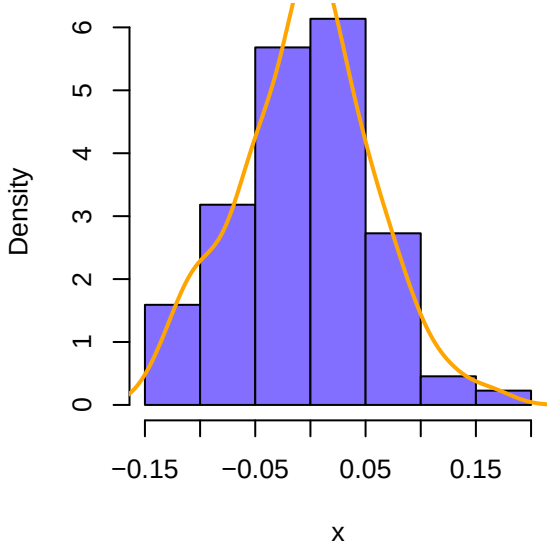


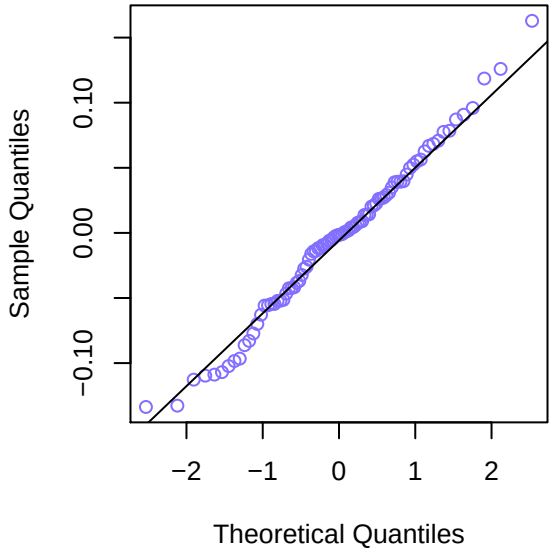


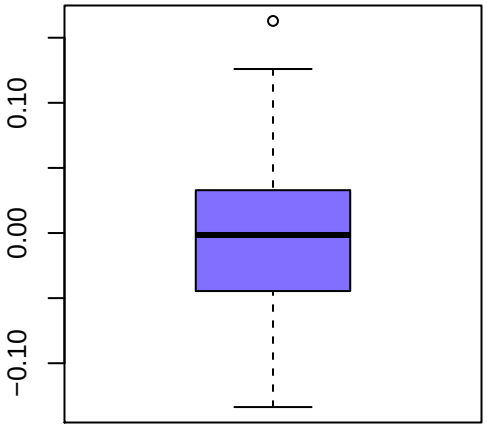



```
Jarque Bera Test

X-squared = 0.7743, df = 2, p-value = 0.679
```

Normality Test for CVE.TO
(Monthly Continuously Compounded Returns)

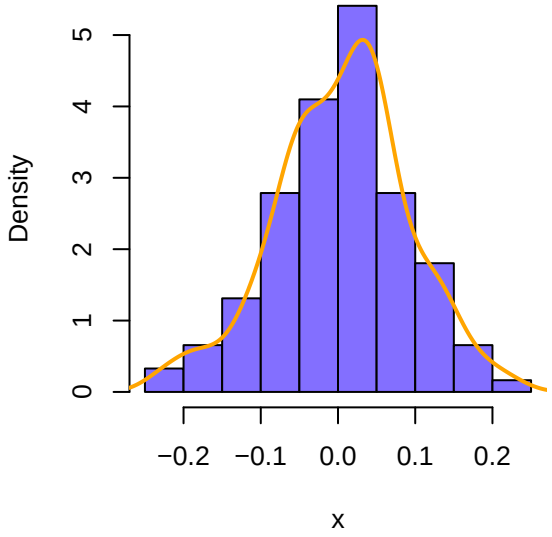


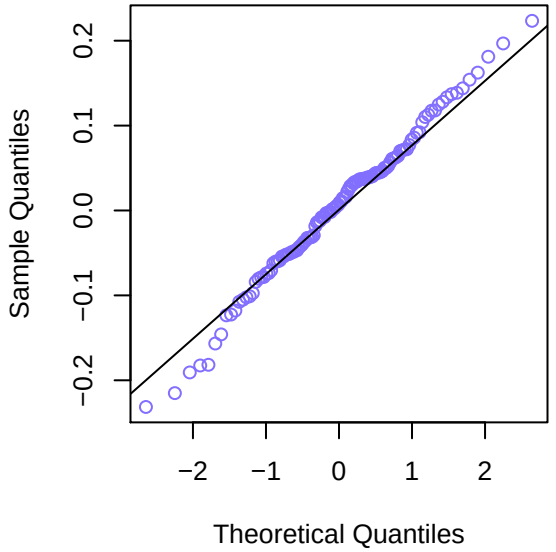


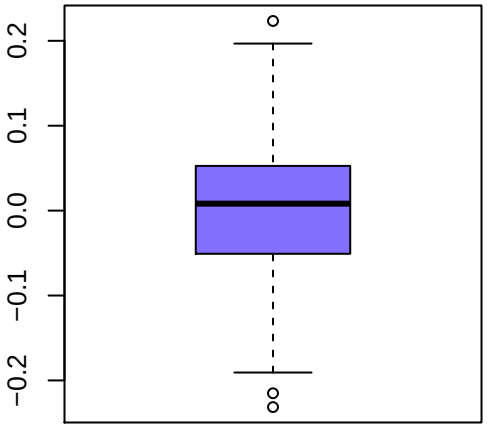



```
Jarque Bera Test

X-squared = 0.0413, df = 2, p-value = 0.979
```

Normality Test for CNQ.TO
(Monthly Continuously Compounded Returns)

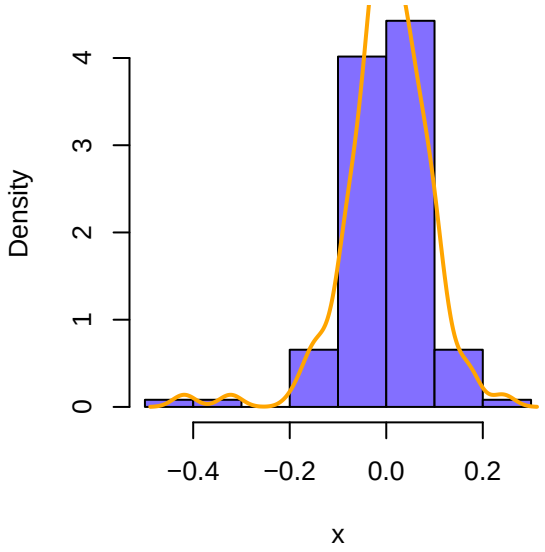


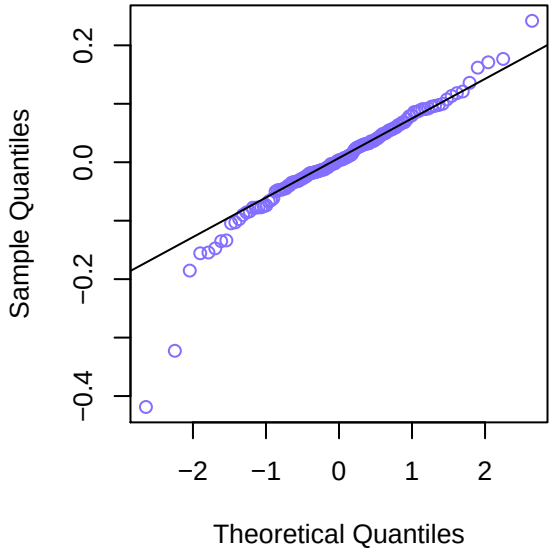


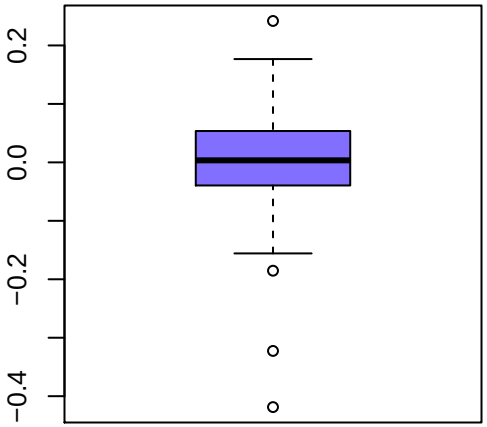



```
Jarque Bera Test

X-squared = 0.916, df = 2, p-value = 0.6325
```

Normality Test for SU.TO
(Monthly Continuously Compounded Returns)








```
Jarque Bera Test

X-squared = 134.4916, df = 2, p-value < 2.2e-16
```

Portfolio Manager | Prices | Returns | Study Stocks | Assess Stocks | Build Portfolio | Assess Portfolio

Portfolio Inputs

Note: This section uses Yahoo! as the source.

Ticker Symbol(s)

XOM .....Exxon Mobil Corporation
BP .....BP p.l.c.
CVX .....Chevron Corporation cve.to cnq.to su.to

Index Symbol

^GSPC

Start Date

2007-01-01

End Date

2017-03-31

Prices

Monthly

Period risk-free interest rate

0.0002

- [ ] Allow short sales
- [x] Annualize portfolio performance
- [x] Estimate covariances via SIM

View Risk/Reward plot and portfolio data

Go!

Portfolio Optimizer

Objective

Target period expected return

Enter period expected value

0.004

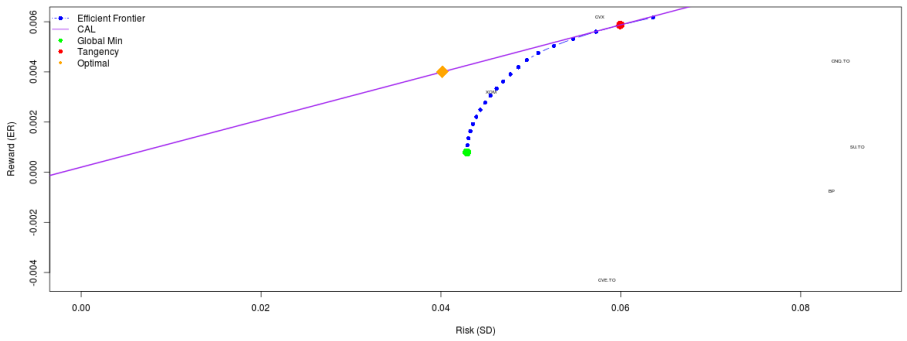
Construct portfolio on the

Capital Allocation Line

Update Risk/Reward plot and portfolio data

Go!

Risk/Reward Plot

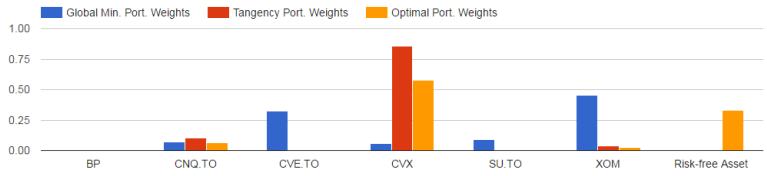


Annualized Portfolio Performance

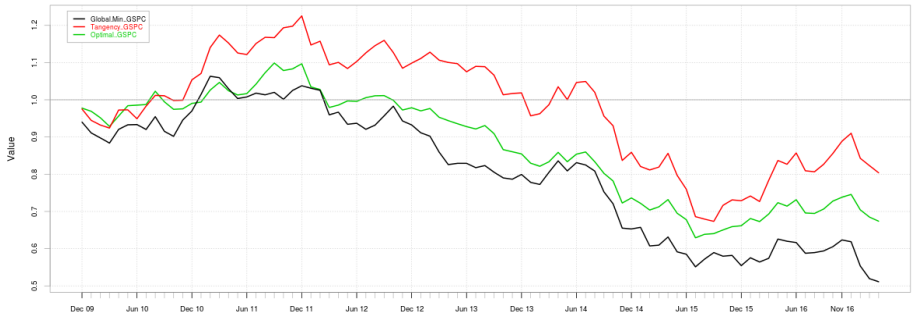
Portfolio	ER	Geom.ER	SD	1% VaR	5% VaR	alpha	beta	SE.beta	R2	Sigma.e	Sharpe	MarketSharpe	Treynor	M2
Global Min	0.01	0.01	0.15	-0.34	-0.23	-0.07	0.77	0.35	0.4	0.12	0.05	0.3	0.01	-0.04
Tangency	0.07	0.07	0.21	-0.41	-0.27	-0.04	1.12	0.38	0.56	0.13	0.33	0.3	0.06	0
Optimal	0.05	0.05	0.14	-0.28	-0.18	-0.03	0.75	0.25	0.56	0.08	0.33	0.3	0.06	0

Asset Allocation

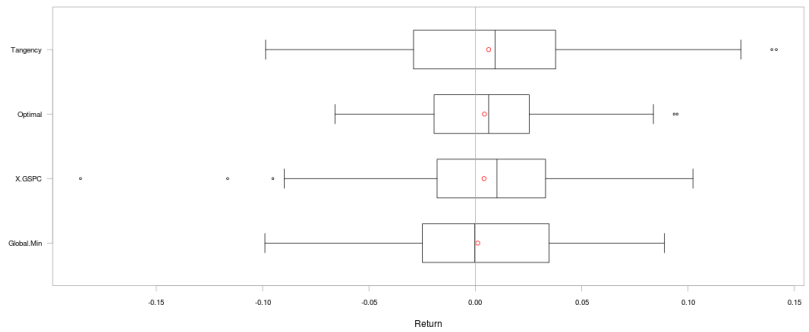
Asset	Last Price	beta	SE.beta	R2	Global Min. Port. Weights	Tangency Port. Weights	Optimal Port. Weights
BP	34.52	1.676	0.195	0.464	0	0	0
CNQ.TO	43.54	1.028	0.185	0.265	0.07	0.1	0.07
CVE.TO	15.05	0.504	0.173	0.09	0.33	0	0
CVX	107.37	1.148	0.114	0.539	0.06	0.86	0.58
SU.TO	40.83	1.024	0.163	0.316	0.09	0	0
XOM	82.01	0.828	0.107	0.409	0.45	0.04	0.03
Risk-free Asset							0.33

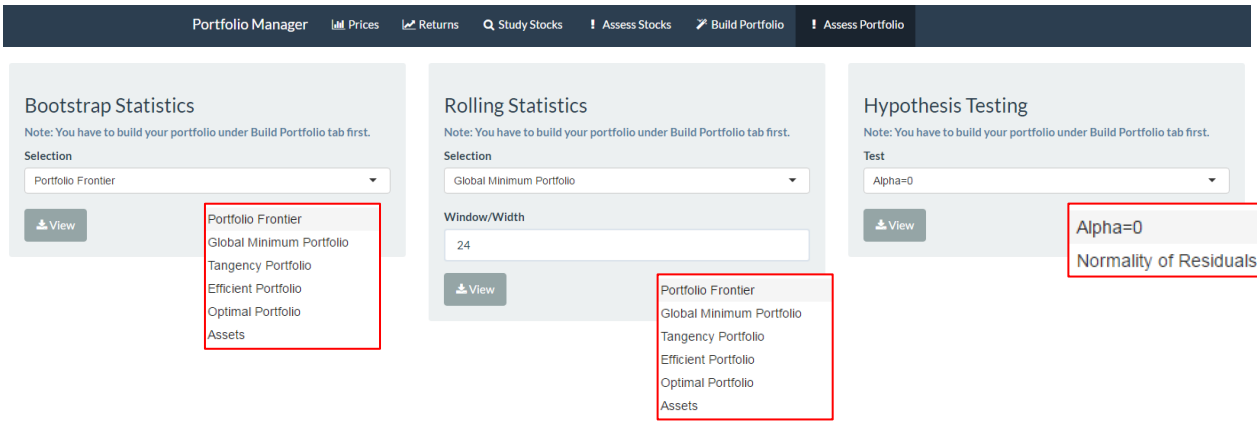


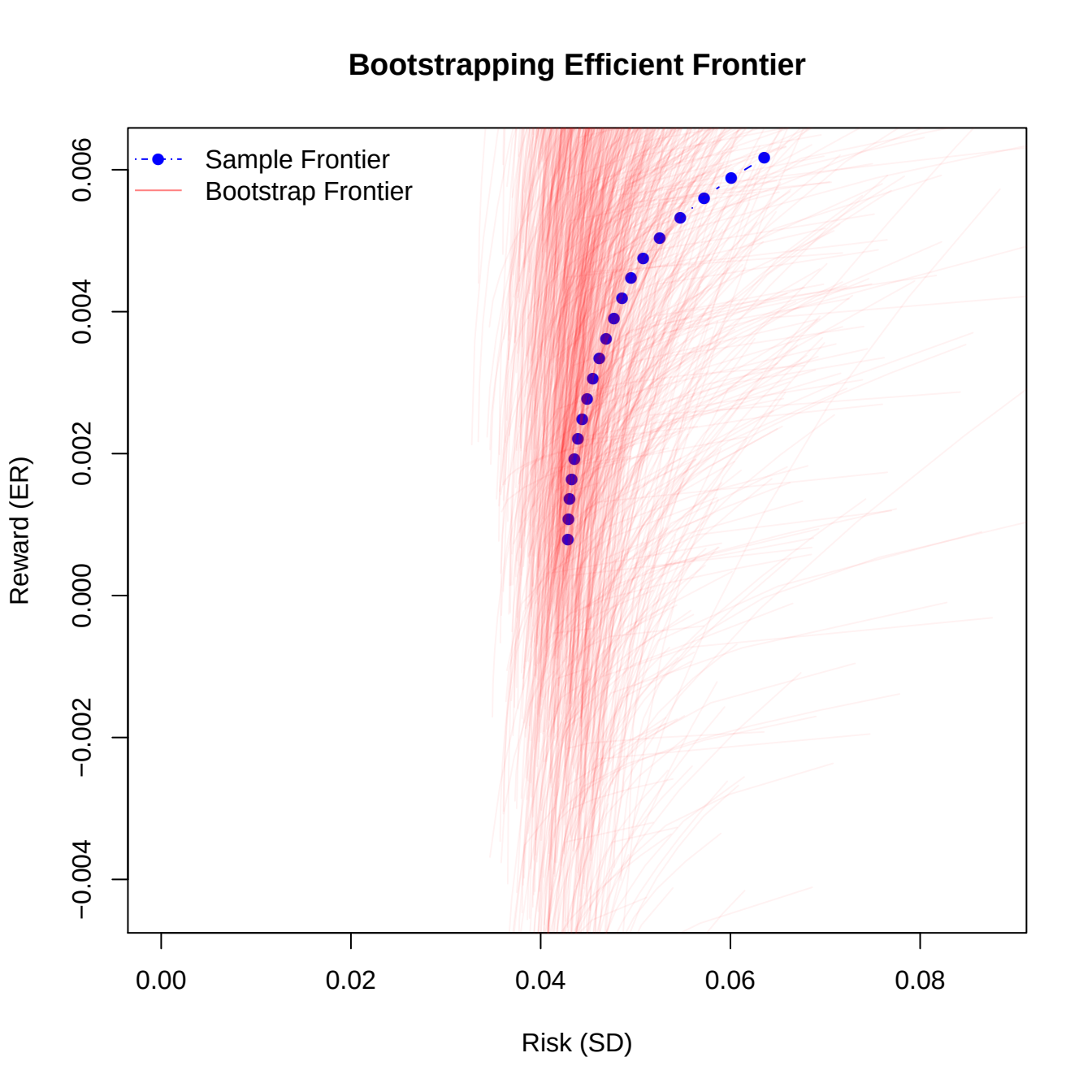
Growth of $1



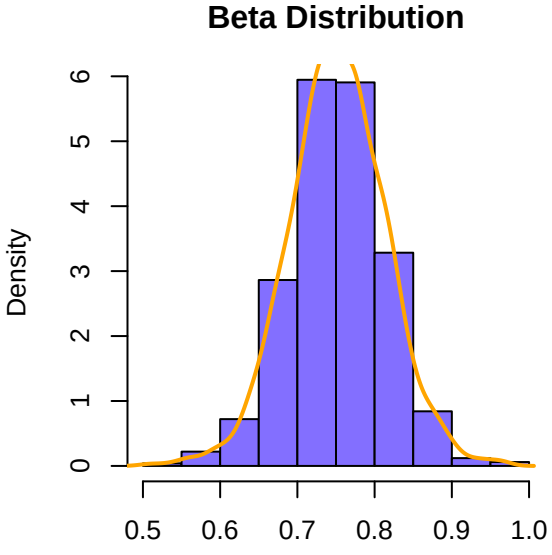
Return Distribution Comparison

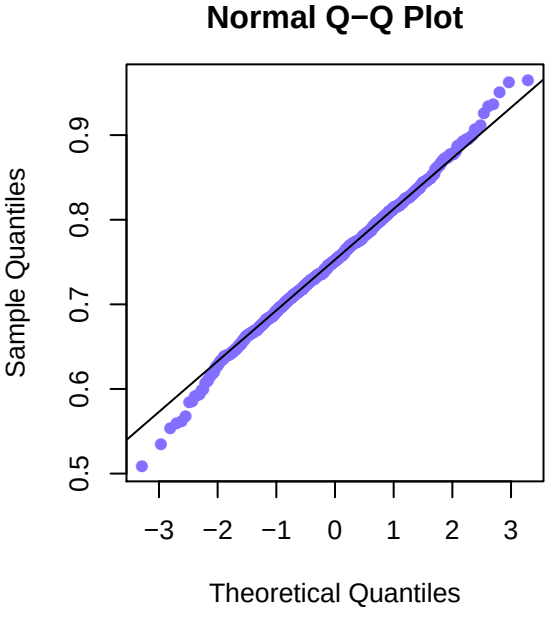



Portfolio Manager
Prices
Returns
Study Stocks
Assess Stocks
Build Portfolio
Assess Portfolio
Bootstrap Statistics
Note: You have to build your portfolio under Build Portfolio tab first.
Selection
Portfolio Frontier
View
Portfolio Frontier
Global Minimum Portfolio
Tangency Portfolio
Efficient Portfolio
Optimal Portfolio
Assets
Rolling Statistics
Note: You have to build your portfolio under Build Portfolio tab first.
Selection
Global Minimum Portfolio
Window/Width
24
View
Portfolio Frontier
Global Minimum Portfolio
Tangency Portfolio
Efficient Portfolio
Optimal Portfolio
Assets
Hypothesis Testing
Note: You have to build your portfolio under Build Portfolio tab first.
Test
Alpha=0
View
Alpha=0
Normality of Residuals


Bootstrapping Efficient Frontier
Sample Frontier
Bootstrap Frontier
Reward (ER)
0.006
0.004
0.002
0.000
−0.002
−0.004
0.00
0.02
0.04
0.06
0.08
Risk (SD)

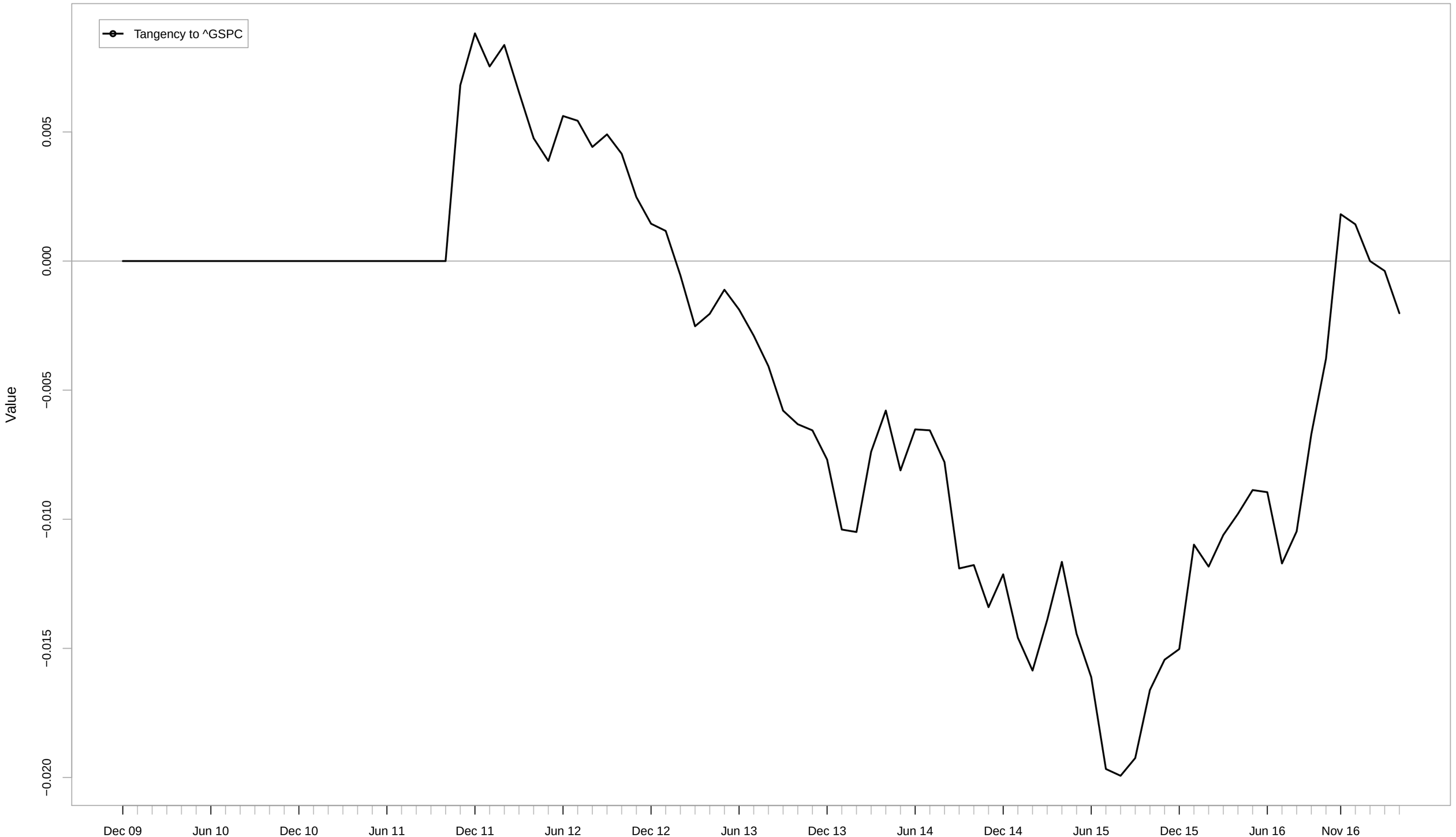
Bootstrapping Beta of Optimal Portfolio



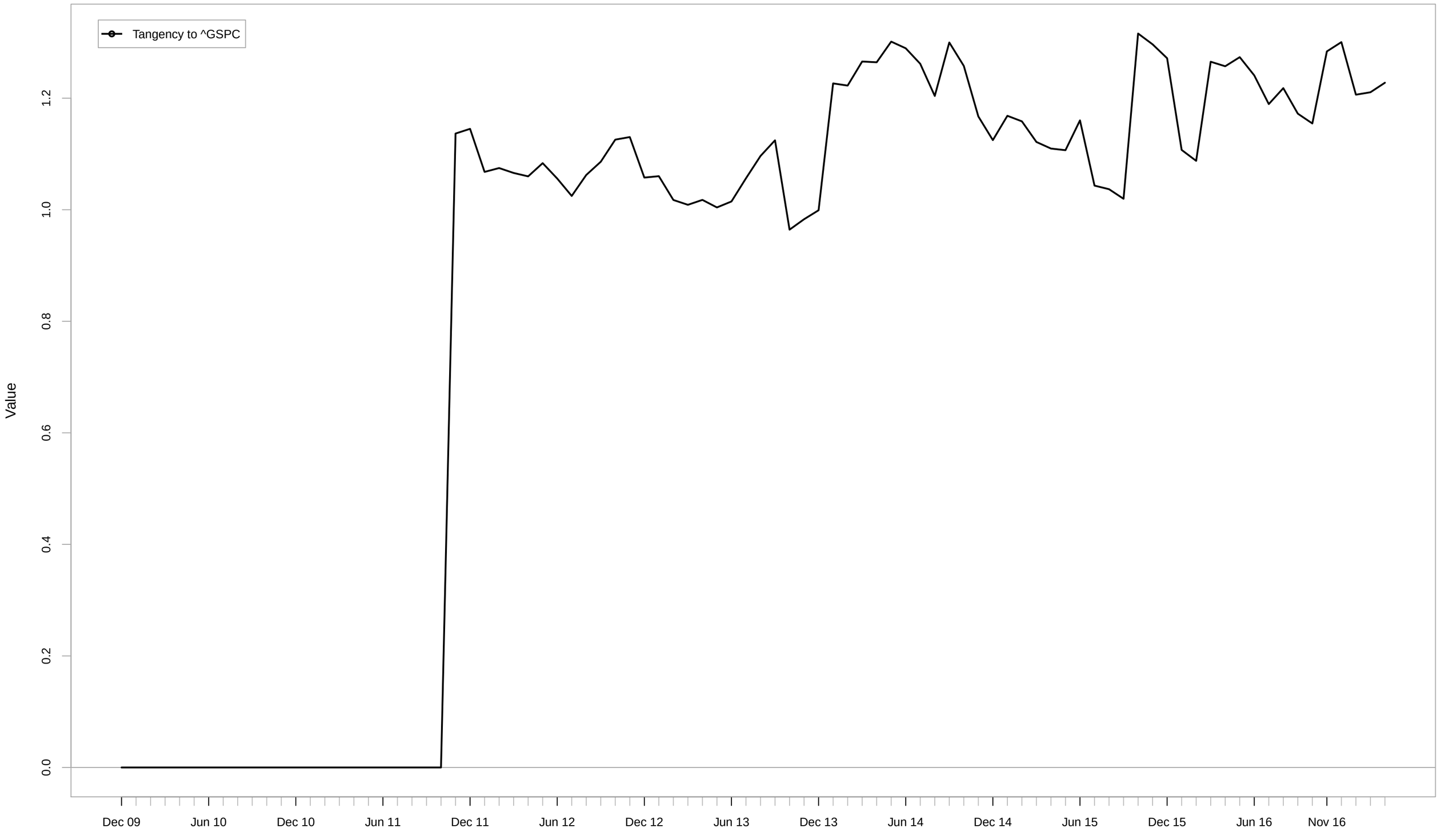


Original	Bias	SE	Lower 95%	Upper 95%
0.75240	−0.00062	0.06249	0.62743	0.87737

Rolling 24−month Alpha



Rolling 24−month Beta



Rolling 24−month R−Squared