

PerformanceAnalytics Changed by Kirk Li

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February 24, 2014

Contents

1	Changes on chart.Boxplot	1
2	Changes on chart.QQplot	6

1 Changes on chart.Boxplot

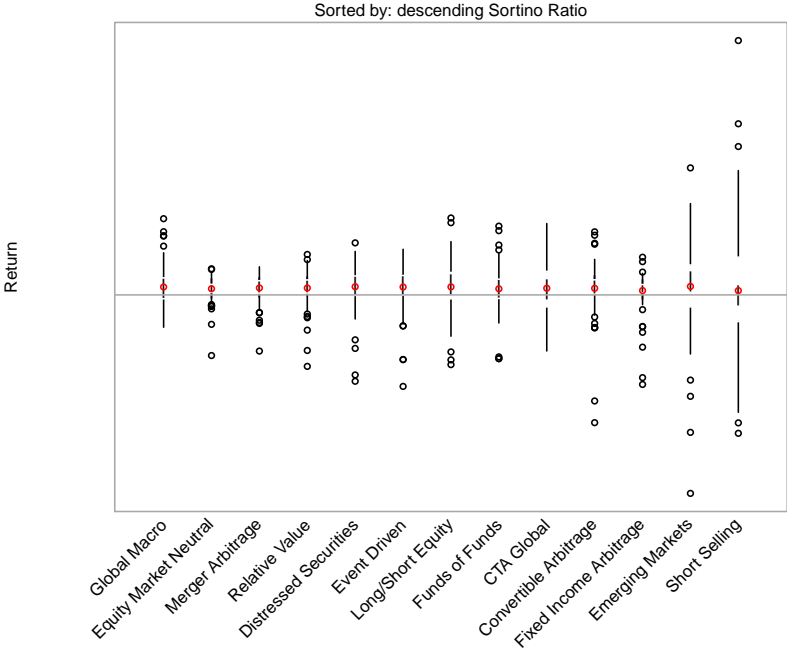
Remarks:

- Sorting boxplot by different risk measure
 - Enable the ascending sorting and descending sorting
 - Enable one of 18 measures that adopted from table.Distributions, table.DrawdownsRatio, table.DownsideRiskRatio, table.AnualizedReturns.
- Fix the horizontal and vertical display of boxplot
 - Adjust the par value per horizontal=TRUE or FALSE
 - Adjust the labeling per horizontal=TRUE or FALSE
 - Modify the angle of axis label to reduce the space
- Add base measure that records the base ordering, relative to the specified ordering.
 - vertical
 - horizontal

```
# read data
data(edhec)

# vertical box, sort by Sortino ratio,
chart.Boxplot(R=edhec, sort.by="Sortino ratio",
              horizontal=FALSE, as.Tufte=TRUE)
```

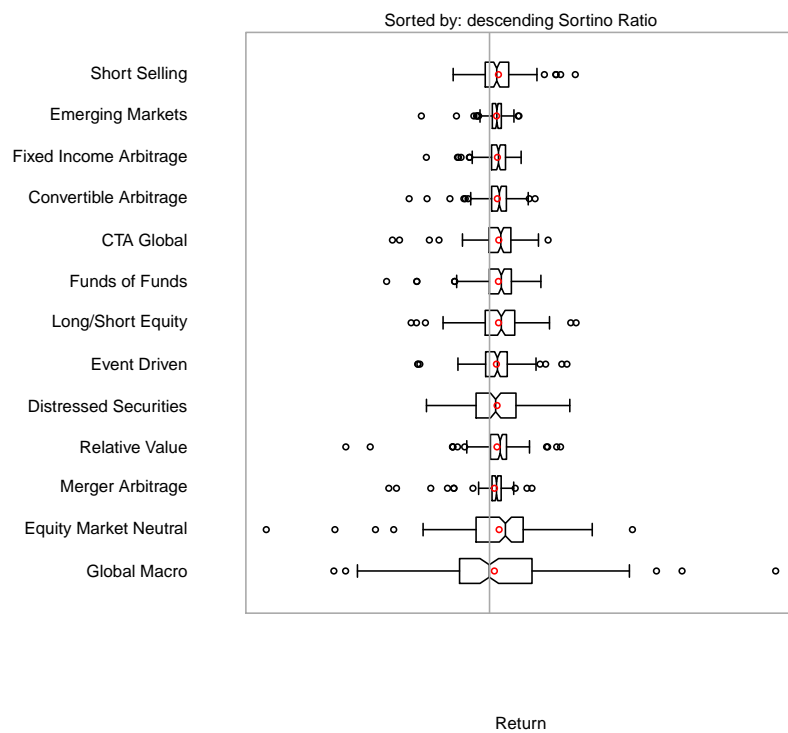
Return Distribution Comparison



```
# horizontal box, sort by Sortino ratio,

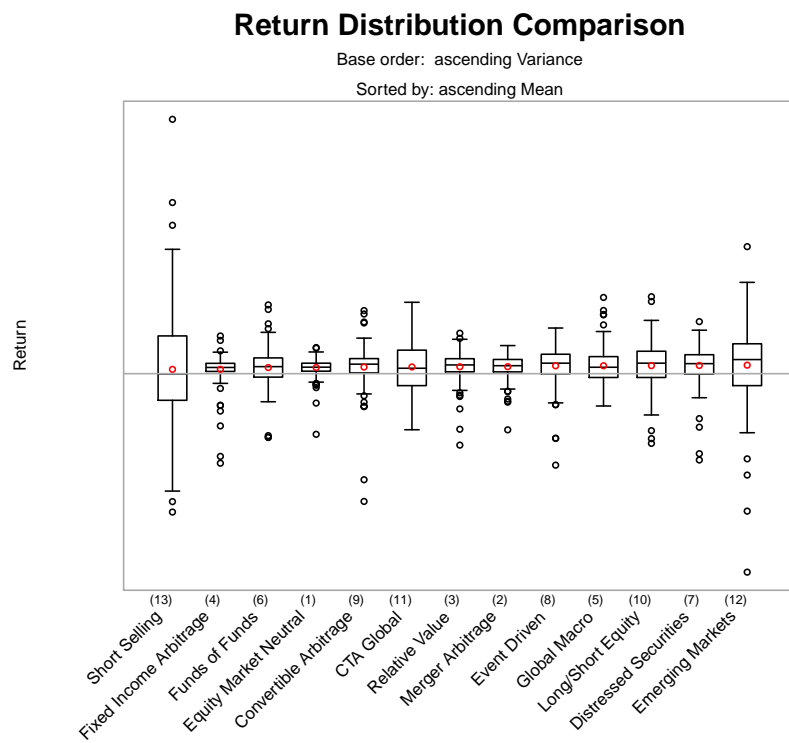
chart.Boxplot(R=edhec,sort.by="Sortino ratio",
             horizontal=TRUE, as.Notch=TRUE)
```

Return Distribution Comparison



```
# vertical box, sort by mean, with base order variance
# ascending sort

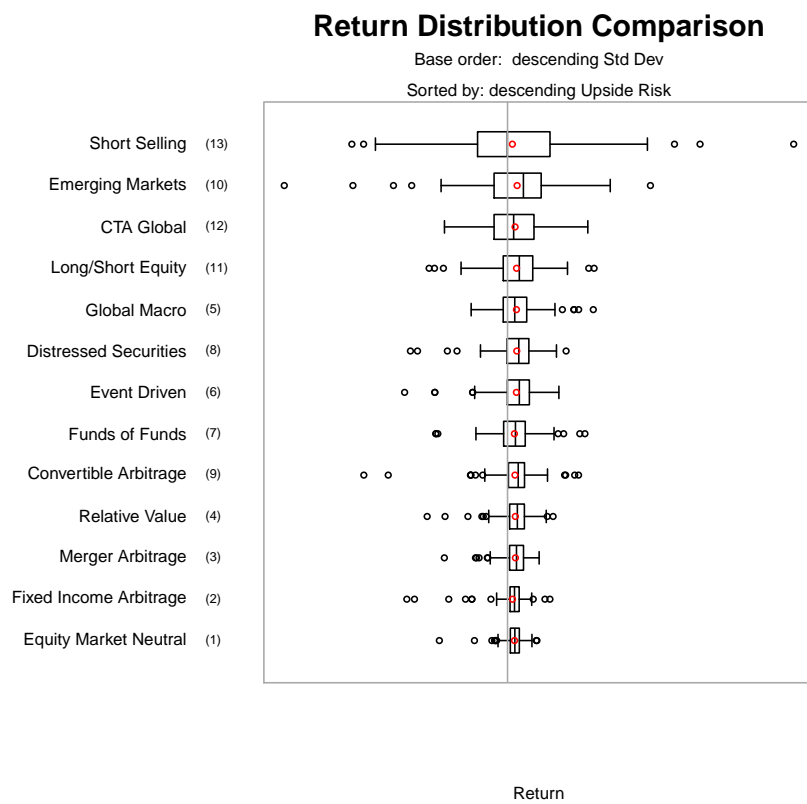
chart.Boxplot(R=edhec, sort.by="mean", horizontal=FALSE
, sort.base="variance", sort.ascending=TRUE)
```



```
# horizontal box, sort by mean, with base order
  variance

# descending sort

chart.Boxplot(R=edhec, sort.by="upside risk",
  horizontal=TRUE, sort.base="std dev", sort.
  ascending=FALSE)
```



```

# horizontal box, sort by mean, with base order
  variance

# descending sort

measure_set <- c("NULL", "mean", "median", "variance",
  "sharp ratio",

  "mean absolute deviation", "std dev",
  "sterling ratio", "calmar ratio", "
  burke ratio", "pain index", "ulcer
  index", "martin ratio", "downside
  risk", "omega ratio", "sortino
  ratio", "upside risk", "upside
  potential ratio", "omega sharpe
  ratio")

try(

  sapply(measure_set, function(x){

    cat(x, "\n")

    chart.Boxplot(
      R=edhec,
      sort.by=x)

  })

)

```

2 Changes on chart.QQplot

Remarks:

- add normal mixture distribution

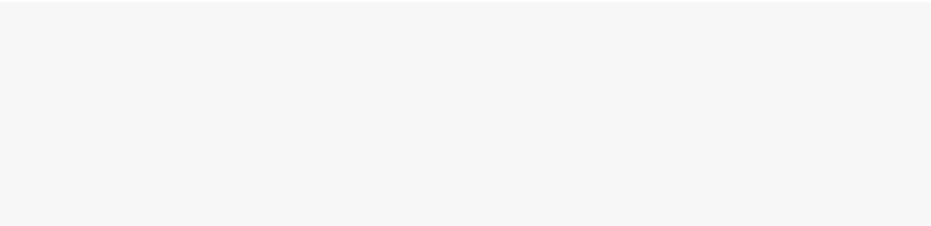
```

data(managers)

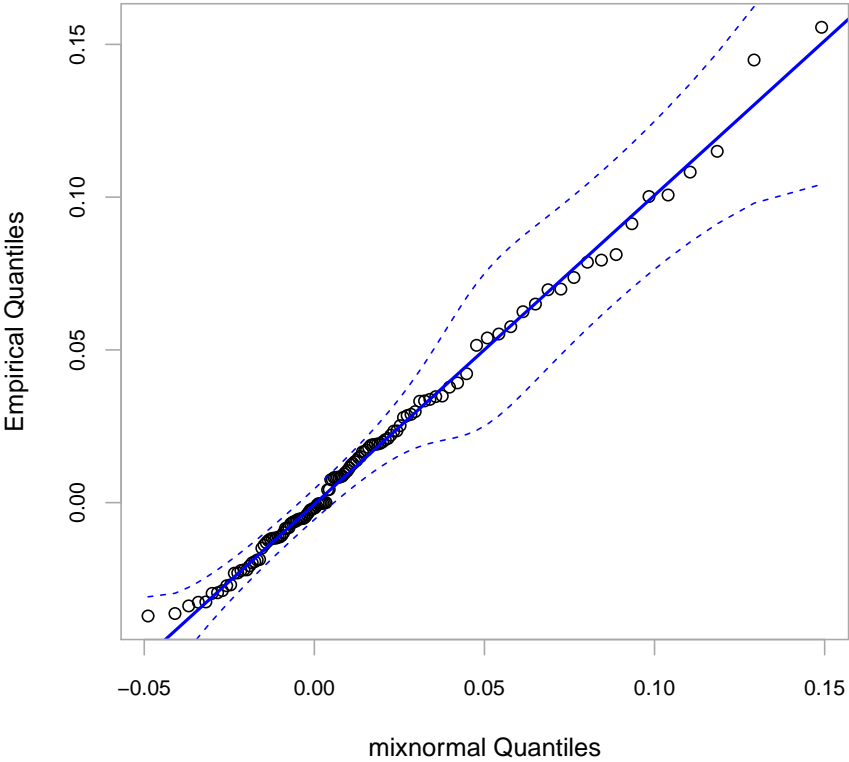
# fit with real data, using fitted distribution as
  theoretical quantiles

chart.QQPlot( checkData(managers[,2, drop = FALSE], na
  .rm = TRUE, method = "vector"), main = "Normal
  Mixture Distribution",
  line=c("quartiles"), para=list(m=2),
  distribution = 'mixnormal',
  envelope=0.95)

```



Normal Mixture Distribution



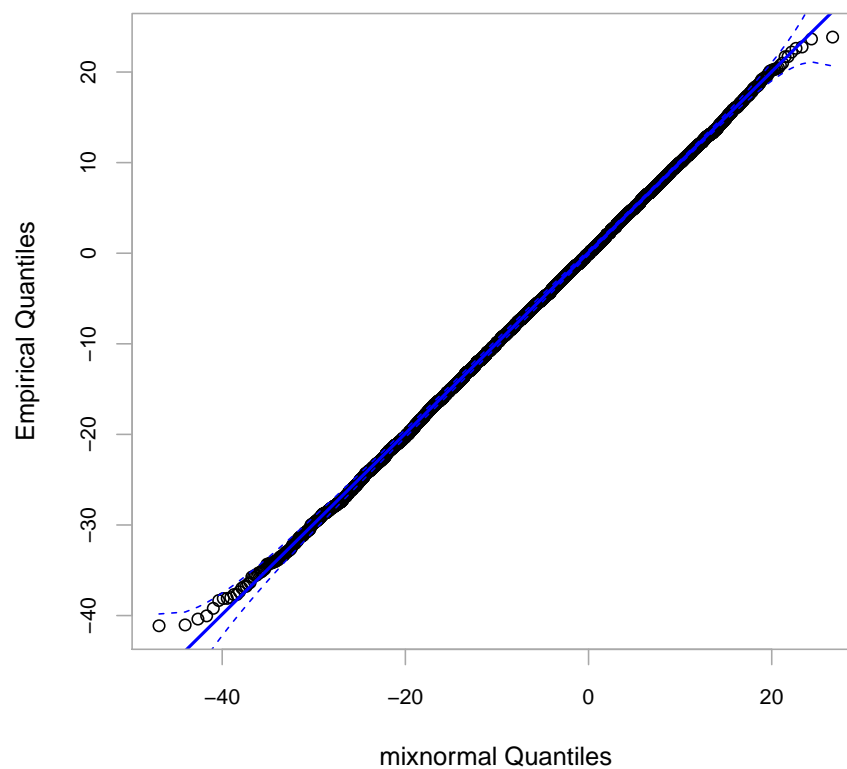
```
# fit with simulated data, using fitted distribution
  as theoretical quantiles

x <- replicate(10000,ifelse(runif(1)>0.5,rnorm(1,5,5),
  rnorm(1,-10,10)))

chart.QQPlot(x, main = "Normal Mixture Distribution",
  line=c("quartiles"), para=list(m=2),
  distribution = 'mixnormal',
  envelope=0.95)

## [1] "fitted model:"
##      mu sig2      w
## [1,] -10.29 97.5 0.476
## [2,]   4.89 26.5 0.524
## [1] "using fitted model as theoretical distribution
"
```

Normal Mixture Distribution



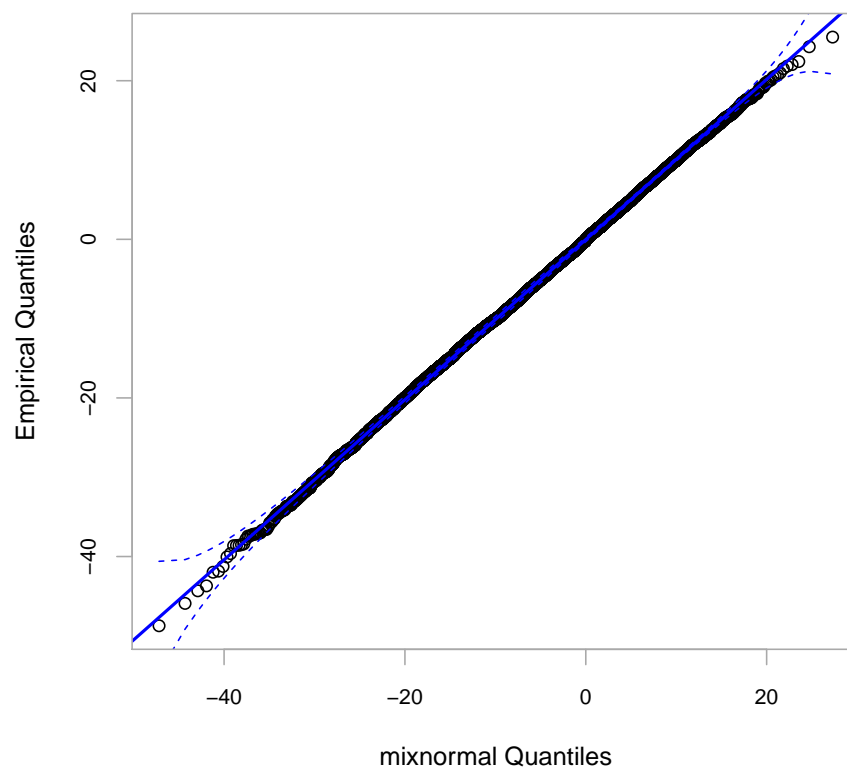

```
# fit with simulated data, using true distribution as
  theoretical quantiles

x <- replicate(10000,ifelse(runif(1)>0.5,rnorm(1,5,5),
  rnorm(1,-10,10)))

chart.QQPlot(x, main = "Normal Mixture Distribution",
  line=c("quartiles"), para=list(m=2,mu=
    c(5,-10),sig2=c(25,100),w=c
    (0.5,0.5)), distribution = '
    mixnormal',
    envelope=0.95)

## [1] "fitted model:"
##      mu  sig2    w
## [1,] -9.77 102.3 0.514
## [2,]  5.08  24.3 0.486
```

Normal Mixture Distribution



```
# fit with simulated data, using wrong distribution as
  theoretical quantiles

x <- replicate(10000,ifelse(runif(1)>0.5,rnorm(1,5,5),
  rnorm(1,-10,10)))

chart.QQPlot(x, main = "Normal Mixture Distribution",
  line=c("quartiles"), para=list(m=2,mu=
    c(0,20),sig2=c(25,100),w=c(0.5,0.5)
  ), distribution = 'mixnormal',
  envelope=0.95)

## [1] "fitted model:"
##      mu sig2  w
## [1,] -10.05 99.5 0.49
## [2,]  4.81 25.8 0.51
```

Normal Mixture Distribution

