Ex post risk analysis: How the GSoC contributed to PerformanceAnalytics

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Lightning Talk

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```
library(PerformanceAnalytics)
data(managers)
table.AnnualizedReturns(managers[, 1:8])

##                             HAM1   HAM2   HAM3   HAM4   HAM5   HAM6
## Annualized Return         0.1375 0.1747 0.1512 0.1215 0.0373 0.1373
## Annualized Std Dev        0.0888 0.1272 0.1265 0.1843 0.1584 0.0825
## Annualized Sharpe (Rf=0%) 1.5491 1.3732 1.1955 0.6592 0.2356 1.6642
##                           EDHEC LS EQ SP500 TR
## Annualized Return              0.1180   0.0967
## Annualized Std Dev             0.0708   0.1500
## Annualized Sharpe (Rf=0%)      1.6657   0.6449
```

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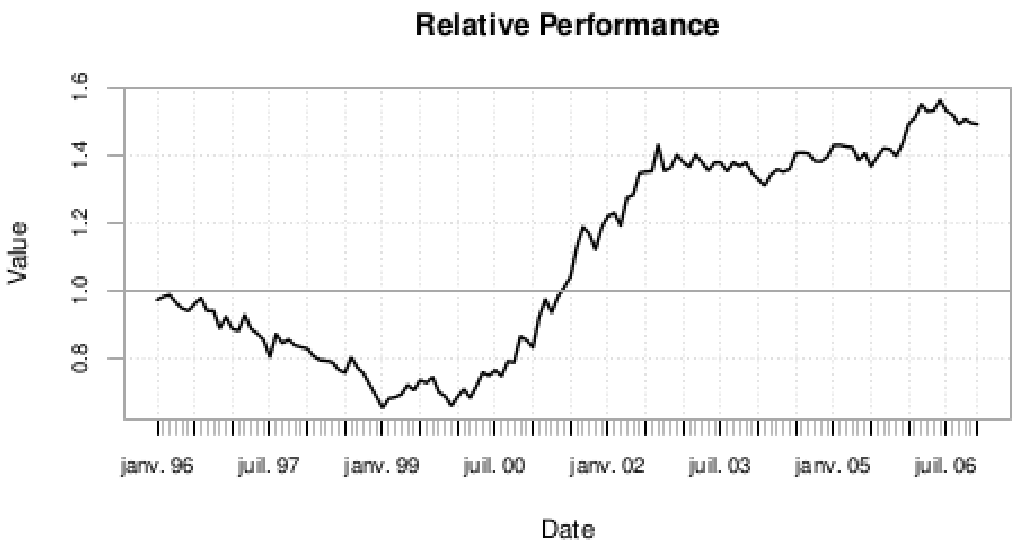
```
library(PerformanceAnalytics)
data(managers)
chart.RelativePerformance(managers[, 1], managers[, 8])
```



```r
library(PerformanceAnalytics)
data(managers)
table.CAPM(managers[, 1], managers[, 8], scale = NA, Rf = 0, digits = 4)
```

```
##                        HAM1 to SP500 TR
## Alpha                            0.0077
## Beta                             0.3906
## Beta+                            0.3010
## Beta-                            0.4257
## R-squared                        0.4357
## Annualized Alpha                 0.0969
## Correlation                      0.6601
## Correlation p-value              0.0000
## Tracking Error                   0.1132
## Active Premium                   0.0408
## Information Ratio                0.3604
## Treynor Ratio                    0.3521
```

Ex post risk analysis: How the GSoC contributed to PerformanceAnalytics

```
library(PerformanceAnalytics)
data(managers)
table.Distributions(managers[, 1:8])

##                               HAM1    HAM2    HAM3    HAM4    HAM5    HAM6
## Monthly Std Dev             0.0256  0.0367  0.0365  0.0532  0.0457  0.0238
## Skewness                   -0.6588  1.4580  0.7908 -0.4311  0.0738 -0.2800
## Kurtosis                    5.3616  5.3794  5.6829  3.8632  5.3143  2.6511
## Excess kurtosis             2.3616  2.3794  2.6829  0.8632  2.3143 -0.3489
## Sample skewness            -0.6741  1.4937  0.8091 -0.4410  0.0768 -0.2936
## Sample excess kurtosis      2.5004  2.5270  2.8343  0.9437  2.5541 -0.2778
##                            EDHEC LS EQ SP500 TR
## Monthly Std Dev                 0.0205   0.0433
## Skewness                        0.0177  -0.5531
## Kurtosis                        3.9105   3.5598
## Excess kurtosis                 0.9105   0.5598
## Sample skewness                 0.0182  -0.5659
## Sample excess kurtosis          1.0013   0.6285
```

Ex post risk analysis: How the GSoC contributed to PerformanceAnalytics

```
library(PerformanceAnalytics)
data(managers)
table.DrawdownsRatio(managers[, 1:8])

##                  HAM1   HAM2   HAM3   HAM4   HAM5   HAM6 EDHEC LS EQ
## Sterling ratio 0.5463 0.5139 0.3884 0.3136 0.0847 0.7678      0.5688
## Calmar ratio   0.9062 0.7281 0.5226 0.4227 0.1096 1.7425      1.0982
## Burke ratio    0.6593 0.8970 0.6079 0.1998 0.1008 1.0788      0.8452
## Pain index     0.0157 0.0642 0.0674 0.0739 0.1452 0.0183      0.0178
## Ulcer index    0.0362 0.1000 0.1114 0.1125 0.1828 0.0299      0.0325
## Pain ratio     8.7789 2.7187 2.2438 1.6443 0.2570 7.4837      6.6466
## Martin ratio   3.7992 1.7473 1.3572 1.0798 0.2042 4.5928      3.6345
##                SP500 TR
## Sterling ratio   0.1768
## Calmar ratio     0.2163
## Burke ratio      0.2191
## Pain index       0.1226
## Ulcer index      0.1893
## Pain ratio       0.7891
## Martin ratio     0.5112
```

Ex post risk analysis: How the GSoC contributed to PerformanceAnalytics

```r
library(PerformanceAnalytics)
data(managers)
table.DownsideRiskRatio(managers[, 1:8])
```

```
##                               HAM1   HAM2   HAM3   HAM4   HAM5   HAM6
## Monthly downside risk       0.0145 0.0116 0.0174 0.0341 0.0304 0.0121
## Annualised downside risk    0.0504 0.0401 0.0601 0.1180 0.1054 0.0421
## Downside potential          0.0051 0.0061 0.0079 0.0159 0.0145 0.0054
## Omega                       3.1907 3.3041 2.5803 1.6920 1.2816 3.0436
## Sortino ratio               0.7649 1.2220 0.7172 0.3234 0.1343 0.9102
## Upside potential            0.0162 0.0203 0.0203 0.0269 0.0186 0.0165
## Upside potential ratio      0.7503 2.2078 1.0852 0.8009 0.7557 1.0003
## Omega-sharpe ratio          2.1907 2.3041 1.5803 0.6920 0.2816 2.0436
##                           EDHEC LS EQ SP500 TR
## Monthly downside risk          0.0098   0.0283
## Annualised downside risk       0.0341   0.0980
## Downside potential             0.0041   0.0132
## Omega                          3.3186   1.6581
## Sortino ratio                  0.9691   0.3064
## Upside potential               0.0137   0.0218
## Upside potential ratio         1.1136   0.7153
## Omega-sharpe ratio             2.3186   0.6581
```

Ex post risk analysis: How the GSoC contributed to PerformanceAnalytics

All information on PerformanceAnalytics are available on the CRAN : http://cran.r-project.org/

Thank you for your attention !