Trading

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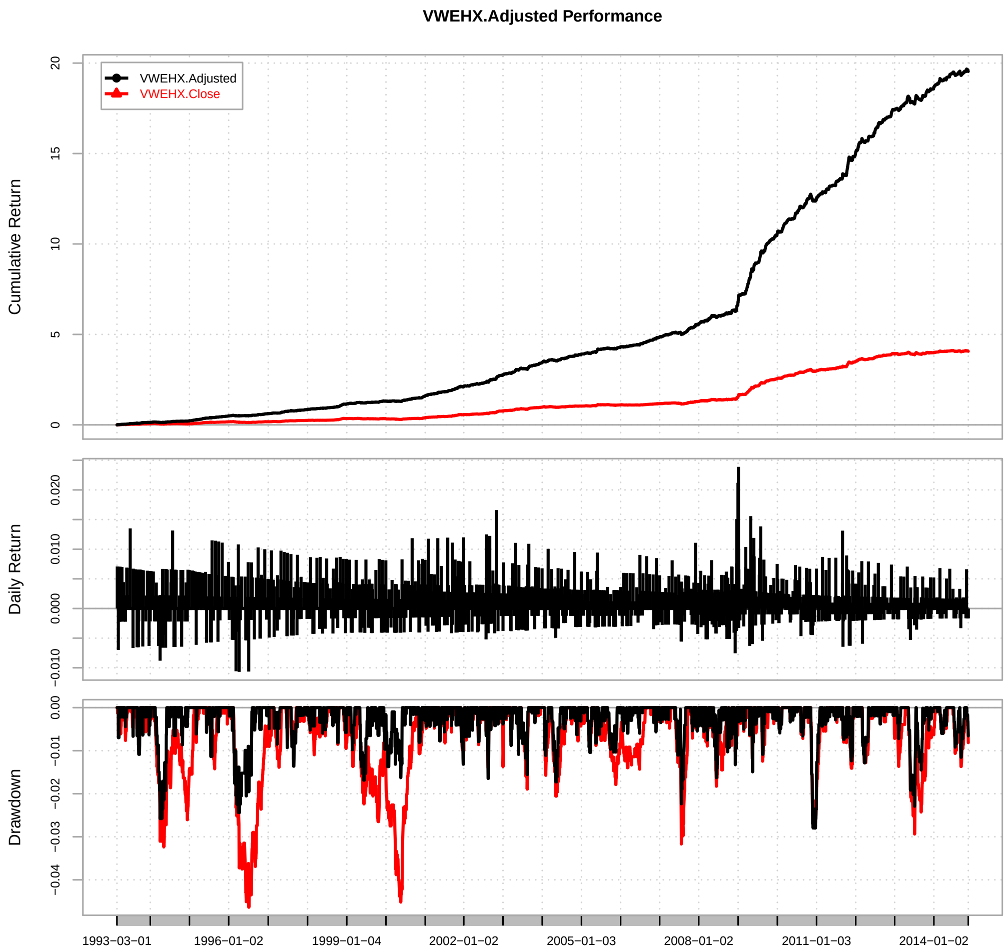
Introduction

Quant Strat Notes r http://www.r-bloggers.com/predicting-high-yield-with-spy-a-two-part-post/High yield strategy. b

```
library(quantmod)

## Loading required package:  xts
## Loading required package:  zoo
##
## Attaching package:  'zoo'
##
## The following objects are masked from 'package:base':
##
##     as.Date, as.Date.numeric
##
## Loading required package:  TTR
## Version 0.4-0 included new data defaults.  See ?getSymbols.

library(PerformanceAnalytics)

##
## Attaching package:  'PerformanceAnalytics'
##
## The following object is masked from 'package:graphics':
##
##     legend

library(quantstrat)

## Error in library(quantstrat):  there is no package called 'quantstrat'
```

```
getSymbols("VWEHX", from="1950-01-01")

##    As of 0.4-0, 'getSymbols' uses env=parent.frame() and
##  auto.assign=TRUE by default.
##
##  This  behavior  will be  phased out in 0.5-0  when the call
will
##  default to use auto.assign=FALSE. getOption("getSymbols.env")
and
##  getOptions("getSymbols.auto.assign") are now checked for alternate
defaults
##
##  This message is shown once per session and may be disabled
by setting
##  options("getSymbols.warning4.0"=FALSE). See ?getSymbol for
more details

## [1] "VWEHX"

getSymbols("SPY", from="1900-01-01")

## [1] "SPY"

getSymbols("HYG", from="1990-01-01")

## [1] "HYG"

getSymbols("SHY", from="1990-01-01")

## [1] "SHY"

getSymbols("VFISX", from="1990-01-01")

## [1] "VFISX"

spySma20Cl <- SMA(Cl(SPY), n=20)
clSig <- Cl(SPY) > spySma20Cl
clSig <- lag(clSig, 1)
vwehxCloseRets <- Return.calculate(Cl(VWEHX))
vfisxCloseRets <- Return.calculate(Cl(VFISX))
vwehxAdjustRets <- Return.calculate(Ad(VWEHX))
vfisxAdjustRets <- Return.calculate(Ad(VFISX))
```

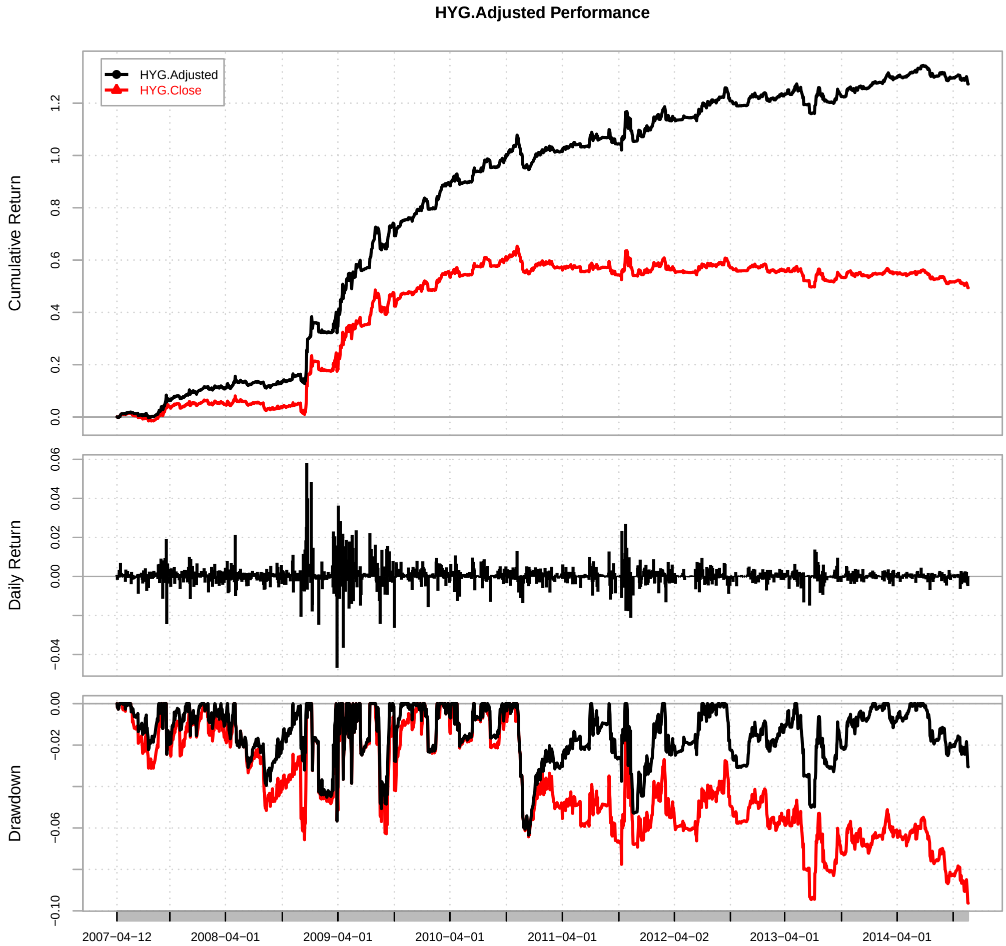
```
hygCloseRets <- Return.calculate(Cl(HYG))
shyCloseRets <- Return.calculate(Cl(SHY))
hygAdjustRets <- Return.calculate(Ad(HYG))
shyAdjustRets <- Return.calculate(Ad(SHY))
mutualAdRets <- vwehxAdjustRets*clSig + vfisxAdjustRets*(1-clSig)
mutualClRets <- vwehxCloseRets*clSig + vfisxCloseRets*(1-clSig)
etfAdRets <- hygAdjustRets*clSig + shyAdjustRets*(1-clSig)
etfClRets <- hygCloseRets*clSig + shyCloseRets*(1-clSig)
mutualFundBacktest <- merge(mutualAdRets, mutualClRets, join='inner')
charts.PerformanceSummary(mutualFundBacktest)
```



```r
data.frame(t(rbind(Return.annualized(mutualFundBacktest)*100,
                   maxDrawdown(mutualFundBacktest)*100,
                   SharpeRatio.annualized(mutualFundBacktest))))
```

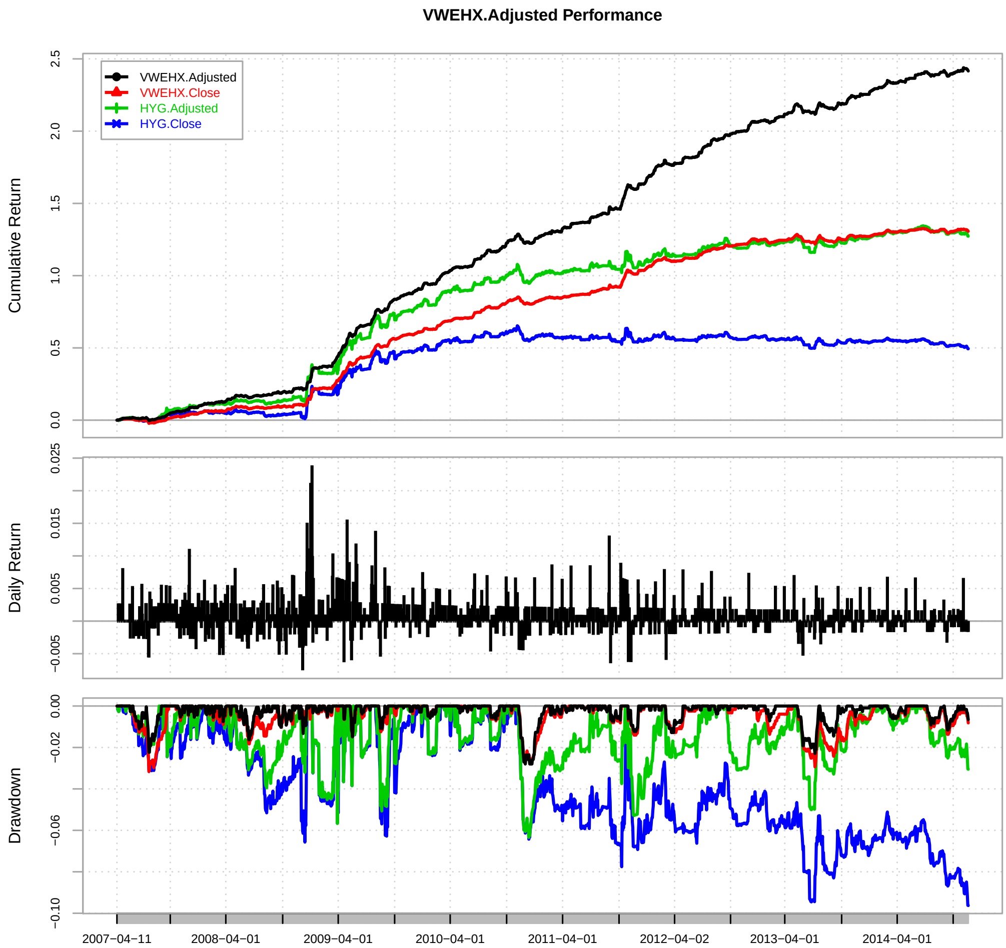
```
##                  Annualized.Return Worst.Drawdown
## VWEHX.Adjusted           14.933098       2.798475
## VWEHX.Close               7.757669       4.637520
##                  Annualized.Sharpe.Ratio..Rf.0..
## VWEHX.Adjusted                          4.113605
## VWEHX.Close                             3.021008
```

```r
etfBacktest <- merge(etfAdRets, etfClRets, join='inner')
charts.PerformanceSummary(etfBacktest)
```




```
data.frame(t(rbind(Return.annualized(etfBacktest)*100,
                    maxDrawdown(etfBacktest)*100,
                    SharpeRatio.annualized(etfBacktest))))

##                Annualized.Return Worst.Drawdown
## HYG.Adjusted           11.404035       6.344801
## HYG.Close               5.421035       9.628868
##                Annualized.Sharpe.Ratio..Rf.0..
## HYG.Adjusted                         1.4512983
## HYG.Close                            0.6713509
```

```r
fundsAndETFs <- merge(mutualFundBacktest, etfBacktest, join='inner')
charts.PerformanceSummary(fundsAndETFs)
```




```r
data.frame(t(rbind(Return.annualized(fundsAndETFs)*100,
                   maxDrawdown(fundsAndETFs)*100,
                   SharpeRatio.annualized(fundsAndETFs))))

##                  Annualized.Return Worst.Drawdown
## VWEHX.Adjusted           17.526454       2.798475
## VWEHX.Close              11.615379       3.169040
## HYG.Adjusted             11.404035       6.344801
## HYG.Close                 5.421035       9.628868
```

```
##                 Annualized.Sharpe.Ratio..Rf.0..
## VWEHX.Adjusted                        4.8263444
## VWEHX.Close                           3.8346914
## HYG.Adjusted                          1.4512983
## HYG.Close                             0.6713509
```

```
###### BOILERPLATE FROM HERE
require(quantstrat)

## Loading required package:  quantstrat
## Warning in library(package, lib.loc = lib.loc, character.only
= TRUE, logical.return = TRUE, :  there is no package called 'quantstrat'

currency('USD')

## Error in eval(expr, envir, enclos):  could not find function "currency"

Sys.setenv(TZ="UTC")
symbols <- "HYG"
stock(symbols, currency="USD", multiplier=1)

## Error in eval(expr, envir, enclos):  could not find function "stock"

initDate="1990-01-01"

strategy.st <- portfolio.st <- account.st <- "preCalc"
rm.strat(portfolio.st)

## Error in eval(expr, envir, enclos):  could not find function "rm.strat"

rm.strat(strategy.st)

## Error in eval(expr, envir, enclos):  could not find function "rm.strat"

initPortf(portfolio.st, symbols=symbols, initDate=initDate, currency='USD')

## Error in eval(expr, envir, enclos):  could not find function "initPortf"

initAcct(account.st, portfolios=portfolio.st, initDate=initDate, currency='USD')

## Error in eval(expr, envir, enclos):  could not find function "initAcct"

initOrders(portfolio.st, initDate=initDate)

## Error in eval(expr, envir, enclos):  could not find function "initOrders"
```

```
strategy(strategy.st, store=TRUE)

## Error in eval(expr, envir, enclos):  could not find function "strategy"

######### TO HERE

clSig <- Cl(SPY) > SMA(Cl(SPY), n=20)

HYG <- merge(HYG, clSig, join='inner')
names(HYG)[7] <- "precomputed_signal"
```

These functions do not exist in these two packages. add.signal and add.rule

```
add.signal(strategy.st, name="sigThreshold",
           arguments=list(column="precomputed_signal", threshold=.5,
                          relationship="gt", cross=TRUE),
           label="longEntry")

## Error in eval(expr, envir, enclos):  could not find function "add.signal"

add.signal(strategy.st, name="sigThreshold",
           arguments=list(column="precomputed_signal", threshold=.5,
                          relationship="lt", cross=TRUE),
           label="longExit")

## Error in eval(expr, envir, enclos):  could not find function "add.signal"

add.rule(strategy.st, name="ruleSignal",
         arguments=list(sigcol="longEntry", sigval=TRUE, orderqty=1, ordertype="
                        orderside="long", replace=FALSE, prefer="Open"),
         type="exit", path.dep=TRUE)

## Error in eval(expr, envir, enclos):  could not find function "add.rule"

add.rule(strategy.st, name="ruleSignal",
         arguments=list(sigcol="longExit", sigval=TRUE, orderqty="all", ordertyp
         type="exit", path.dep=TRUE)

## Error in eval(expr, envir, enclos):  could not find function "add.rule"
```