

test

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R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see [Markdown](#).

text

Take the following as sources of the data:

$1+1 = 2$

ret

Be carefull to work with annualized quantities.

1. return $\max\left(w_1 \cdot \frac{x^T \mu}{\mu_{target}}\right)$
2. volatility $\min\left(w_2 \cdot \frac{\sqrt{x^T C x}}{\sigma_{target}}\right)$
3. dispersion $\min\left(w_3 \cdot \frac{x^T d}{d_{target}}\right)$

Data - Import and Preparation

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Data Import

We import the sentiment data. We also import the prices of each index over the relevant time frame.

Sentix

Read the raw sentiment data and save it in the list *sentixRaw* with each list element containing the results of the survey for the different indices. As the number of rows (dates of observation) in data differ, we extract the unique dates (*datesSentix*) and reduce the data to it. We also determine *dateMin* and *dateMax*, which we use later on to get the stock data.

```
library(openxlsx)

folderSentix <- (file.path(getwd(), "Data", "Sentix"))

sheets <- c("DAX", "DAXm", "TEC", "TECm", "ESX50", "ESX50m", "SP5", "SP5m", "NASDAQ", "NASDAQm", "NIKKEI", "NIKKEIm", "BUND", "BUNDm", "TBOND", "TBONDm")
relevant_rows <- c("Datum", "P+", "Pn", "P-", "I+", "In", "I-", "G+", "Gn", "G-")

sentixRaw <- list()

for(i in sheets){
  sentixRaw[[i]] <- read.xlsx(file.path(folderSentix, "sentix_anzahlen_bis_02092016xlsx.xlsx"), sheet=i, colIndex=1, colIndexIs="byname")
  sentixRaw[[i]] <- sentixRaw[[i]][,relevant_rows]
  sentixRaw[[i]] <- sentixRaw[[i]][order(sentixRaw[[i]][,1]),]
}

unlist(lapply(sentixRaw, nrow))

##      DAX      DAXm      TEC      TECm      ESX50      ESX50m      SP5      SP5m      NASDAQ
##      803      803      803      803      803      803      803      803      803
## NASDAQm      NIKKEI      NIKKEIm      BUND      BUNDm      TBOND      TBONDm
##      803      803      803      802      802      802      802

datesSentix <- unique(sentixRaw[[1]]$Datum)
for(i in names(sentixRaw)[2:length(sentixRaw)]){
  if(!setequal(datesSentix, sentixRaw[[i]]$Datum)){
    stop("Sentix Data of different indices have not same dates. Handle manually.")
  }
}

for(i in names(sentixRaw)){
  sentixRaw[[i]] <- unique(sentixRaw[[i]])
}
unlist(lapply(sentixRaw, nrow))

##      DAX      DAXm      TEC      TECm      ESX50      ESX50m      SP5      SP5m      NASDAQ
##      802      802      802      802      802      802      802      802      802
## NASDAQm      NIKKEI      NIKKEIm      BUND      BUNDm      TBOND      TBONDm
##      802      802      802      802      802      802      802
```