Statistics

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Import data

Command to retrieve data from yahoo finance, returns a time series object.

```
getSymbols("AAPL", from = "2017-8-27", to = "2017-11-27", auto.assign = TRUE)
```

```
## 'getSymbols' currently uses auto.assign=TRUE by default, but will
## use auto.assign=FALSE in 0.5-0. You will still be able to use
## 'loadSymbols' to automatically load data. getOption("getSymbols.env")
## and getOption("getSymbols.auto.assign") will still be checked for
## alternate defaults.
##
## This message is shown once per session and may be disabled by setting
## options("getSymbols.warning4.0"=FALSE). See ?getSymbols for details.
```

```
## [1] "AAPL"
```

```
close <- AAPL$AAPL.Close
open <- AAPL$AAPL.Open
price <- AAPL$AAPL.Close
```

Normalizing

```
for (i in 0:length(close)){
  price[i] <- close[i]/open[i]
}
```

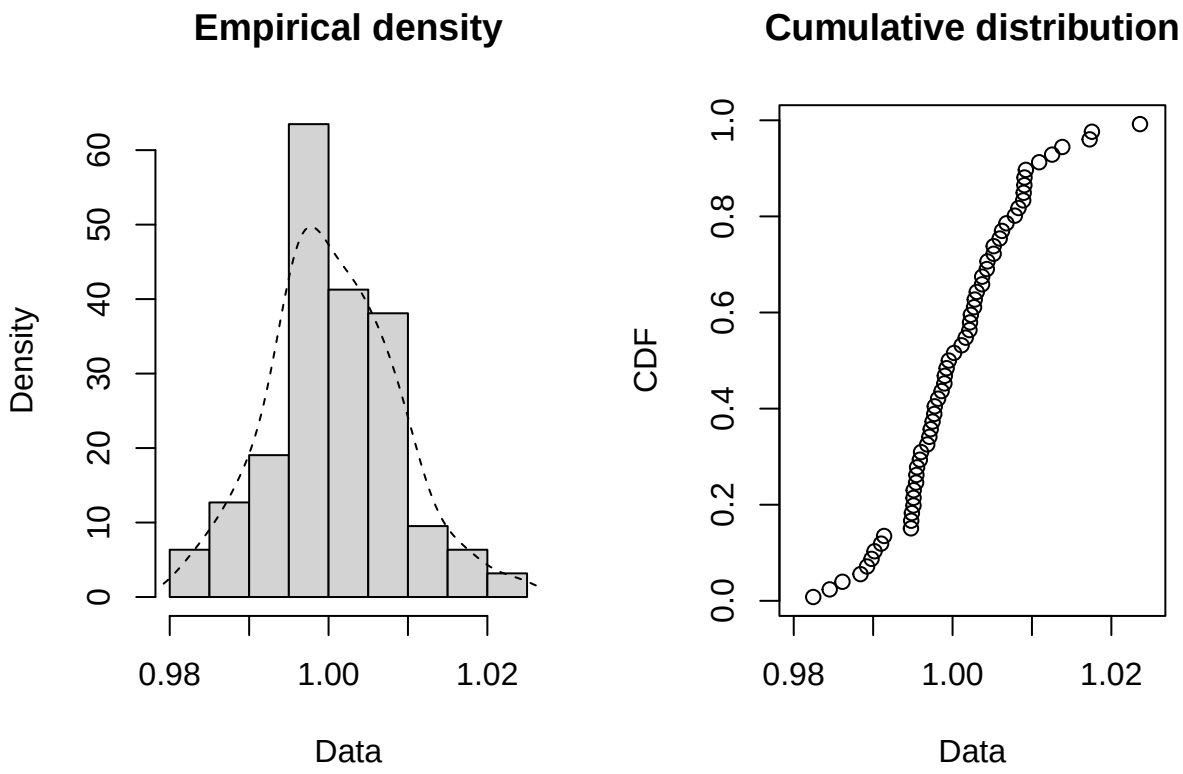
extracting a numeric vector.

```
x <- data.frame(coredata(price))
```

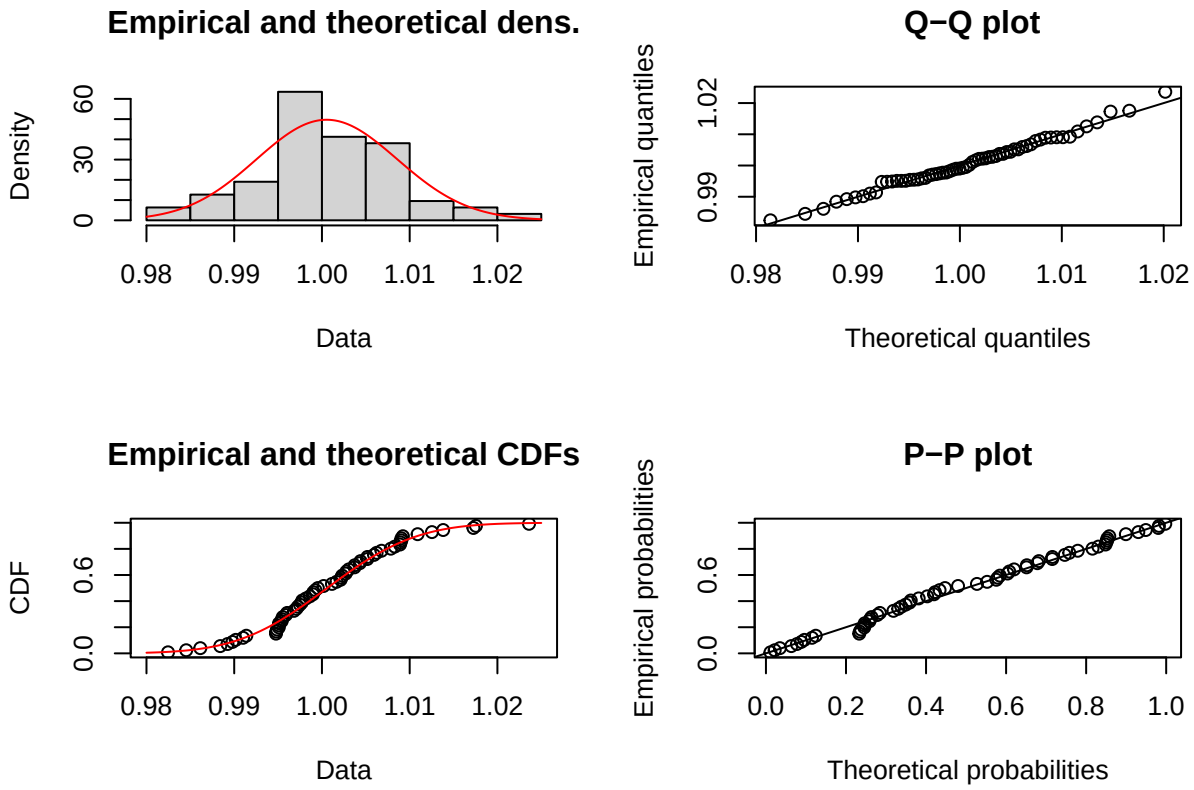
Statistics.

Looking at empirical data and fitting a lnorm density curve to it. It uses the MLE.

```
plotdist(x$AAPL.Close, histo=TRUE, demp = TRUE)
```




```
fun1 <- fitdist(x$AAPL.Close, "lnorm")
plot(fun1)
```



Note : I expect these kind of figures to appear in the presentation, aswell as a table with the test results from the next command

testing log normality

(let's say we want p>0.1), if p is smaller we reject the Lognormal hyp.

```
lnorm_test(x$AAPL.Close)
```

```
##
##  Test for the lognormal distribution based on a transformation to
##  normality
##
## data:  x$AAPL.Close
## p-value = 0.8254
```

things to do and discuss

Selecting the stocks (as we are considering growth stocks I think taking the top stocks from the nasdaq, maybe we can also check how indexes behave), also we need to choose a number of stocks to work on

Here we deal with day to day data, it would be nice to do the same with weekly and or monthly data (either find a way to directly get the data from quantmod or play with the indices from the day to day data.)

in the fitdistrplus package there's a goodness of fit command that would be interesting to use, we shall have a look into it

Still some blabla to do for the introduction and structure of the presentation we will discuss it in person.

priority is to check the fitdistrplus package and the last paper from section 4 till the end so you know what to expect. Also Im not even sure if the way i normalize is correct, it seems natural but if you have anything against or to add please do.