Group-Submission-I-Basic-Statistics-code.R

USER

2020-06-28

```
#(20/06) MScFE 610 Econometrics (C20-S2) Timezone Group 3 - A Submission (Basic Statistics)
#The calculation of JP Morgan average stock value, stock volatility and return.


#Importing the JP Morgan data downloaded
library(readr) #Import the library to read file downloaded
library(tseries)
```

```
## Registered S3 method overwritten by 'quantmod':
##   method            from
##   as.zoo.data.frame zoo
```

```
JPM_sheet <- read_csv("JPM.csv",
                      col_types = cols(Date = col_date(format = "%m/%d/%Y")))


#The average value of the JP Morgan Stock
average_stock <- mean(JPM_sheet$`Adj Close`)
average_stock
```

```
## [1] 104.5844
```

```
#Get the Adjusted Close Price
price<-JPM_sheet$`Adj Close`
n<- length(price)

#Calculate the daily return of the JPM Adjusted Closed Price
daily_return_log<-log(price[-n]/price[-1])
daily_return_log
```

```
##   [1]  2.241076e-02  4.914034e-02 -2.996931e-02 -6.756147e-03  4.521726e-02
##   [6] -1.982452e-02 -1.533076e-02 -6.156187e-03 -2.286190e-02 -4.164370e-03
##  [11]  7.211563e-03 -2.616398e-04 -4.175749e-03  1.824781e-03 -2.006173e-02
##  [16] -1.236897e-02  1.194274e-02  1.597563e-02  1.808454e-02  9.702707e-04
##  [21] -1.523792e-02 -8.688031e-04  3.740904e-03 -8.721076e-05 -2.835477e-02
##  [26]  3.224460e-03  1.205602e-02  1.124585e-02 -2.519664e-03 -1.734058e-03
##  [31]  7.914103e-03 -9.599596e-04 -8.719846e-04  4.264311e-02  2.710336e-02
##  [36] -3.037229e-02  1.959059e-02  1.572734e-03 -1.807644e-02  1.946633e-02
##  [41] -1.362954e-02 -1.506918e-02 -1.304502e-02  2.525369e-02 -1.193693e-02
##  [46] -1.893200e-02  1.694122e-02 -2.455597e-02  2.745293e-02  8.163086e-04
##  [51]  0.000000e+00  8.108281e-03 -2.171644e-02  2.240211e-03  4.856266e-03
##  [56]  4.698589e-03  3.811288e-03 -9.996723e-04  6.378176e-03  5.683519e-03
##  [61]  0.000000e+00  7.937183e-03  6.320927e-03 -1.103548e-02 -8.631851e-03
##  [66] -1.470340e-02 -2.156965e-02 -7.729407e-03  3.769440e-03 -3.513017e-04
```

```
##  [71]  7.667751e-03 -2.738832e-03  3.358202e-03  1.633312e-02 -9.136501e-03
##  [76] -7.639105e-03  4.612051e-03  1.126407e-02  5.137716e-03  4.368403e-02
##  [81] -2.258828e-02  1.244442e-02 -1.290581e-02 -4.610219e-04  5.640525e-03
##  [86] -2.309920e-02 -3.978973e-03 -2.794021e-03  2.523274e-03  5.791232e-03
##  [91]  1.998632e-03  1.779876e-02  1.204014e-03 -2.591626e-03  5.840659e-03
##  [96]  9.309510e-05  2.788830e-04  1.650606e-02  9.119491e-03 -6.677952e-04
## [101]  1.556974e-02 -1.623709e-02  6.981464e-03 -8.409890e-03  1.408811e-02
## [106] -6.480688e-03 -3.272738e-03 -3.047455e-02  6.171111e-03  2.159472e-03
## [111] -4.314222e-03  4.596264e-03 -3.890973e-02  7.237226e-04 -9.277984e-03
## [116]  1.481363e-02 -1.256951e-02 -1.843095e-02 -7.032948e-03 -8.982856e-03
## [121]  2.869258e-03 -1.022184e-02 -6.014774e-03  1.536639e-02 -6.157634e-03
## [126] -4.227595e-03 -8.060468e-03 -2.562624e-04 -3.664612e-03 -2.039745e-03
## [131]  7.755846e-03  9.887713e-03  1.602693e-02 -6.651093e-03  8.320713e-03
## [136] -9.366695e-03  0.000000e+00  1.307766e-03 -6.088540e-03  3.039604e-03
## [141]  2.089755e-03  4.358840e-04 -1.754650e-02  4.895793e-03  3.277253e-03
## [146]  4.936134e-03  5.309662e-03 -4.962348e-03  4.875095e-03  4.285207e-03
## [151] -1.926247e-03  5.350252e-03 -6.312023e-03  1.186773e-02 -3.883365e-03
## [156]  1.761594e-04 -2.991091e-03 -4.032660e-03 -2.863259e-02 -8.550250e-03
## [161]  6.596828e-03  9.634798e-03  2.831203e-03  1.184060e-02  4.356599e-03
## [166]  1.477856e-02 -5.832001e-03 -4.132379e-03 -9.344747e-03 -8.975586e-03
## [171]  5.654891e-03 -6.088649e-03  6.961452e-03  2.699395e-02  3.042130e-02
## [176]  1.097286e-02  5.719907e-03 -2.121403e-02 -1.107827e-02  1.596962e-02
## [181]  1.666531e-03  1.446800e-02  1.049115e-02  1.879790e-02 -1.508560e-02
## [186]  1.382773e-02 -1.373229e-02 -1.749041e-02 -2.151020e-02  3.669136e-04
## [191]  5.520859e-03 -6.529679e-03 -4.664084e-03 -1.700785e-02 -8.040818e-03
## [196]  9.746554e-03  2.125036e-02 -5.856915e-03  2.083776e-02 -2.520830e-02
## [201]  7.271103e-04 -7.608057e-03  2.170830e-02  7.496827e-03  9.239804e-03
## [206] -2.417790e-02 -4.201208e-03 -1.105781e-02  7.963799e-03 -1.021485e-02
## [211] -9.398869e-03  4.566333e-02  1.920778e-02  1.822771e-02  1.886192e-02
## [216]  9.815263e-03 -6.455084e-03 -9.895398e-04  8.242021e-03  1.284504e-02
## [221]  4.758445e-03  1.276632e-02  8.671474e-03  2.392307e-02  2.179244e-02
## [226] -4.062212e-02 -1.119197e-02  2.166424e-03
```

```
# JPM_sheet$`daily return`<-log(price[-n]/price[-1])
# View(JPM_sheet$`daily return`)

#Calculate the Volatility of Stock
volatility<- sd(daily_return_log)*sqrt(252)*100
volatility
```

```
## [1] 22.88891
```