Nathaniel Coulter - TidyQuant

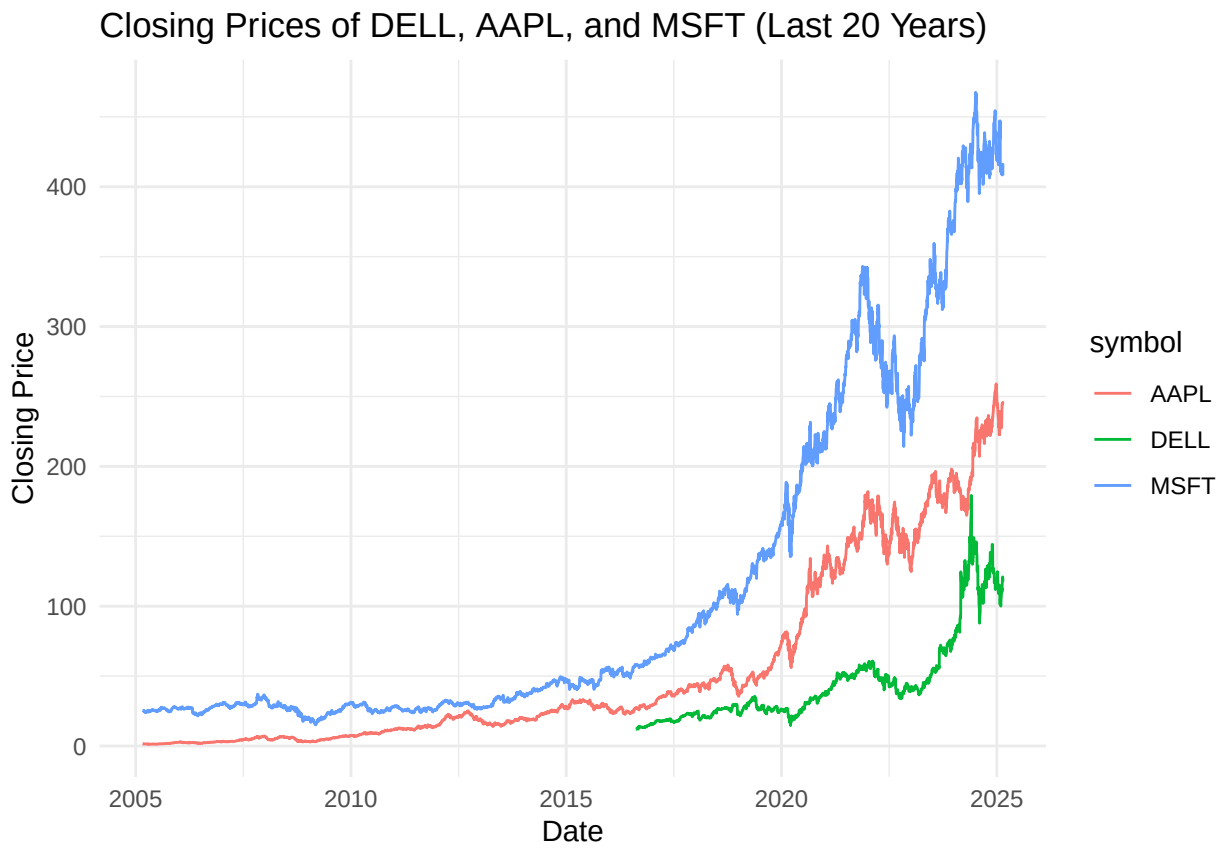
** Below I have used an R studio markdown file, that displays my code and compares MSFT to it's peers and sector using the TidyQuant library.**

```
library(tidyquant)
```

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

```
## -- Attaching core tidyquant packages ----------------------- tidyquant 1.0.10 --
## v PerformanceAnalytics 2.0.8      v TTR                0.24.4
## v quantmod             0.4.26     v xts                0.14.1
## -- Conflicts ------------------------------------------ tidyquant_conflicts() --
## x zoo::as.Date()                 masks base::as.Date()
## x zoo::as.Date.numeric()         masks base::as.Date.numeric()
## x PerformanceAnalytics::legend() masks graphics::legend()
## x quantmod::summary()            masks base::summary()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(ggplot2)

stocks <- c("DELL", "AAPL", "MSFT")

stock_data <- tq_get(stocks, get = "stock.prices", from = Sys.Date() - (20 * 365))

# Plot the closing prices
ggplot(stock_data, aes(x = date, y = close, color = symbol)) +
  geom_line() +
  labs(title = "Closing Prices of DELL, AAPL, and MSFT (Last 20 Years)",
       x = "Date", y = "Closing Price") +
  theme_minimal()
```

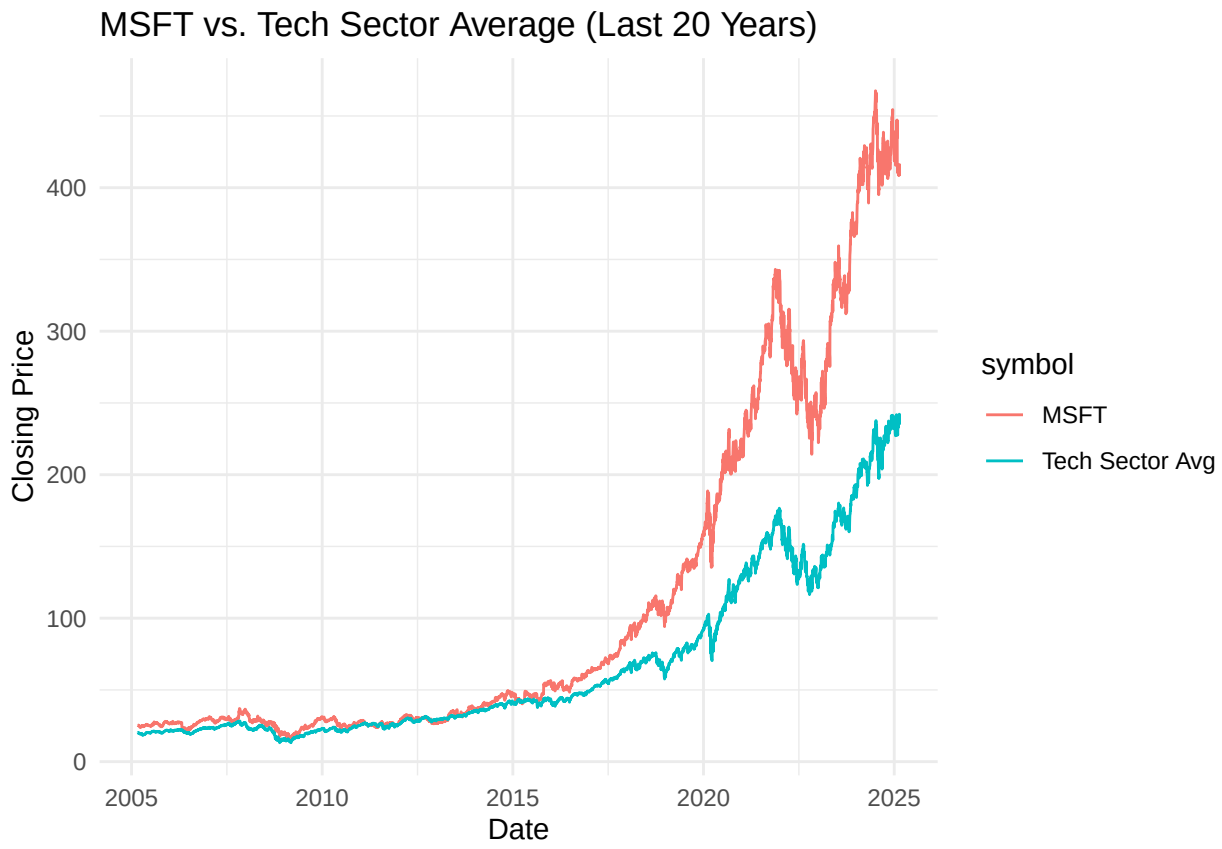



```
library(tidyquant)
library(ggplot2)
library(dplyr)
```

```
##
## ########################## Warning from 'xts' package ##########################
## #                                                                              #
## # The dplyr lag() function breaks how base R's lag() function is supposed to  #
## # work, which breaks lag(my_xts). Calls to lag(my_xts) that you type or       #
## # source() into this session won't work correctly.                            #
## #                                                                              #
## # Use stats::lag() to make sure you're not using dplyr::lag(), or you can add #
## # conflictRules('dplyr', exclude = 'lag') to your .Rprofile to stop           #
## # dplyr from breaking base R's lag() function.                                #
## #                                                                              #
## # Code in packages is not affected. It's protected by R's namespace mechanism #
## # Set `options(xts.warn_dplyr_breaks_lag = FALSE)` to suppress this warning.  #
## #                                                                              #
## ################################################################################

##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:xts':
##
##     first, last
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
stocks <- c("MSFT", "XLK")  # XLK represents the technology sector

stock_data <- tq_get(stocks, get = "stock.prices", from = Sys.Date() - (20 * 365))

stock_data <- stock_data %>%
  mutate(symbol = ifelse(symbol == "XLK", "Tech Sector Avg", symbol))

ggplot(stock_data, aes(x = date, y = close, color = symbol)) +
  geom_line() +
  labs(title = "MSFT vs. Tech Sector Average (Last 20 Years)",
       x = "Date", y = "Closing Price") +
  theme_minimal()
```

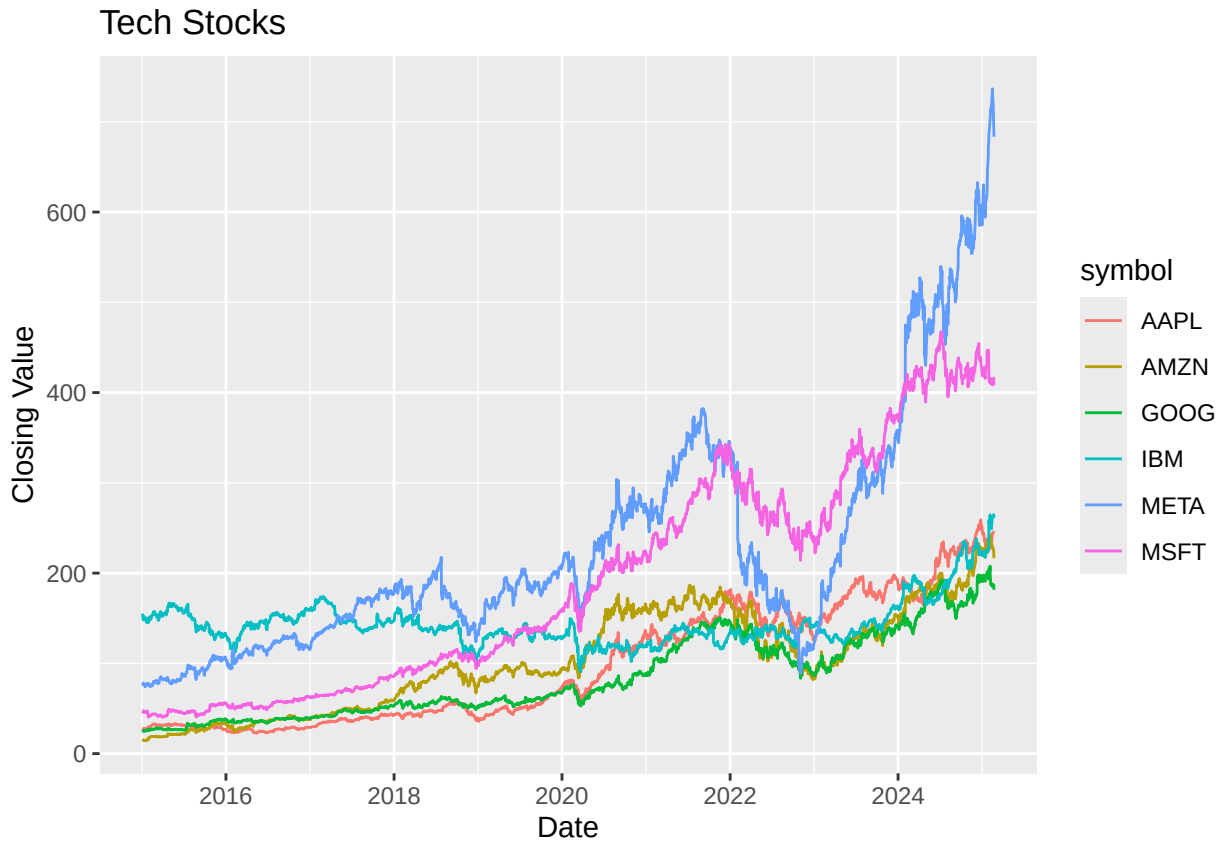



```r
library(tidyquant)
library(ggplot2)
library(dplyr)
```

```
tech_stocks <- tq_get(c("AMZN","AAPL","GOOG","IBM","META","MSFT"), get="stock.prices")
tech_stocks <- tech_stocks %>% filter(!is.na(close))

str(tech_stocks)
```

```
## tibble [15,300 x 8] (S3: tbl_df/tbl/data.frame)
##  $ symbol  : chr [1:15300] "AMZN" "AMZN" "AMZN" "AMZN" ...
##  $ date    : Date[1:15300], format: "2015-01-02" "2015-01-05" ...
##  $ open    : num [1:15300] 15.6 15.4 15.1 14.9 15 ...
##  $ high    : num [1:15300] 15.7 15.4 15.1 15.1 15.2 ...
##  $ low     : num [1:15300] 15.3 15 14.6 14.8 14.8 ...
##  $ close   : num [1:15300] 15.4 15.1 14.8 14.9 15 ...
##  $ volume  : num [1:15300] 55664000 55484000 70380000 52806000 61768000 ...
##  $ adjusted: num [1:15300] 15.4 15.1 14.8 14.9 15 ...
```

```
ggplot(tech_stocks, aes(x = date, y = close, color = symbol)) +
  geom_line() +
  labs(title = "Tech Stocks",
       x = "Date", y = "Closing Value")
```




```
df = filter(tech_stocks, symbol=="AAPL" | symbol=="MSFT")

ggplot(df, aes(x = date, y = close, color = symbol)) +
  geom_line() +
```

```
labs(title = "A decade in review: MSFT vs APPL",
     x = "Date", y = "Closing Value")
```