Homework 3, by Somesh Srivastava, Jan 21, 2017

Executive Summary

The objective of the exercise is to calculate annualize stock return for all the stocks for the period 1925 to 2016.

Details

Montly stock return data has been taken from CRSP for all the stocks for the period 1925 to 2016. Stocks which have not been in market for entire year, partial year return has been taken as their yearly return for that year. Some of the very old stocks have missing ticker values which are not available in CRSP. They can be identified by their CRSP provided unique permanent numbers(PERMNO).

Tables and Figures

Tables Used from CRSP:

Data	Table	Variable	Type	Details
Monthly Stock return	crspq.msf	permno	NUM	CRSP Permanent Company Number (selected by default)
		ticker	Char	Ticker (e.g. AAPL)
		cusip	Char	Committee on Uniform Security Identification Procedures nine-digit, alphanumeric CUSIP
		prc	NUM	Price
		RET	NUM	Holding Period Return
		SHROUT	NUM	Share out standing

Results:

Click here for Annualized Stock Return

Computer Code

```
## Loading required libraries

if (!require("data.table")) install.packages("data.table")
if (!require("xts")) install.packages("xts")
if (!require("ggplot2")) install.packages("ggplot2")
if (!require("plyr")) install.packages("plyr")


setwd("D:/OneDrive for Business/MFE/Curriculum/Winter 2018/404-Corporate Finance and Risk Management - WELCH/Homework/HW3")

stocks <- fread("./stocks.CSV", header = TRUE)

#Data cleaning
stocks$date <- as.Date(as.character(stocks$date), "%Y%m%d")
stocks$RET <- as.numeric(as.character(stocks$RET))
stocks[is.na(stocks)] = 0


ticker <- data.table(PERMNO=stocks$PERMNO, TICKER=stocks$TICKER, key="PERMNO")
ticker = unique(ticker[!ticker$TICKER==""])

stocks$grossRet <- stocks$RET+1
stocks[, grossRet := lapply(.SD, prod), by=list(stocks$PERMNO, year(stocks$date)), .SDcols=c("grossRet")]

yearend <- stocks[, .(max(date)), by=year(stocks$date)]
```

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colnames(yearend) <- c("year", "date")
stocks <- stocks[date %in% yearend$date]
stocks[, PRICE := ifelse(PRC < 0, -1*PRC,PRC)]

stocks <- stocks[, .(PERMNO, TICKER, CUSIP, date=year(date), MARKETCAP=PRICE*SHROUT, ANNUALRET=grossRet-1)]
stocks$TICKER=ticker$TICKER[match(stocks$PERMNO, ticker$PERMNO)]

write.csv(stocks, "StockRet.csv")
```

References

- Wharton Research Data Services (WRDS) "CRSP Monthly Stock" wrds.wharton.upenn.edu, accessed 02/01/2018.