# Week 2 Code & Next Steps

**REDA1-CE1000 - Week 2, Part 1**

Foundational Concepts & Probability & Statistics

**Load the libraries**

```
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

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

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

```
library(ggplot2)
library(tidyverse)
```

```
## -- Attaching packages ---------------------------------------------------------------------- tidyverse

## v tibble  3.0.3     v purrr   0.3.4
## v tidyr   1.1.2     v stringr 1.4.0
## v readr   1.3.1     v forcats 0.4.0

## -- Conflicts ------------------------------------------------------------------------------- tidyverse_confli
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(stargazer)
```

```
##
## Please cite as:

##  Hlavac, Marek (2018). stargazer: Well-Formatted Regression and Summary Statistics Tables.

##  R package version 5.2.2. https://CRAN.R-project.org/package=stargazer
```

```
library(fredr)
```

```
fredr_set_key('fd7c2810b87f970f3d03b94e5b2ccb26') # My key, please don't abuse.
```

**Identify and set the working directory**

```
getwd()
```

```
## [1] "/Users/petermattingly/Desktop/NYU Schack/Fall 2020/Real Estate Data Analytics - November"
```

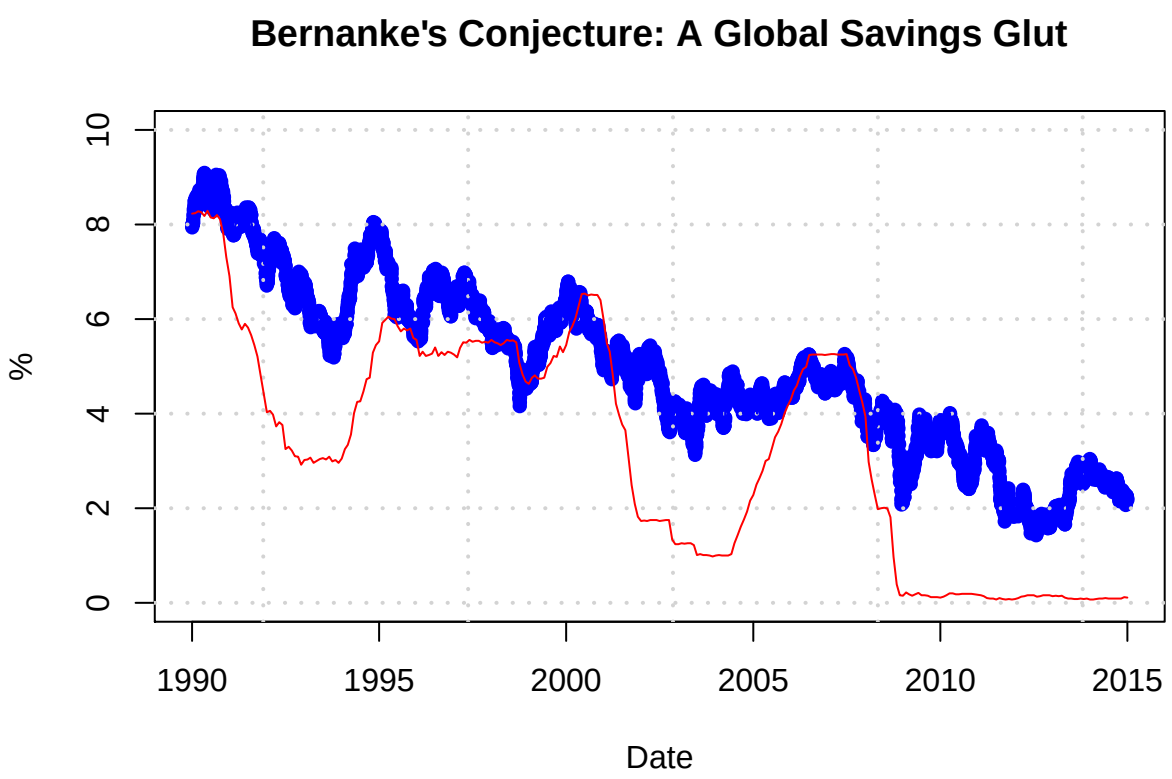
```
#setwd("/Users/timothysavage/Desktop/REDA")
```

### The Global Savings Glut: A Conjecture

```
fedfunds = drop_na(fredr(series_id = "FEDFUNDS", observation_start = as.Date("1990-01-01"),
                         observation_end = as.Date("2015-01-01")))
```

```
tenyear = drop_na(fredr("DGS10", observation_start = as.Date("1990-01-01"),
                        observation_end = as.Date("2015-01-01")))
```

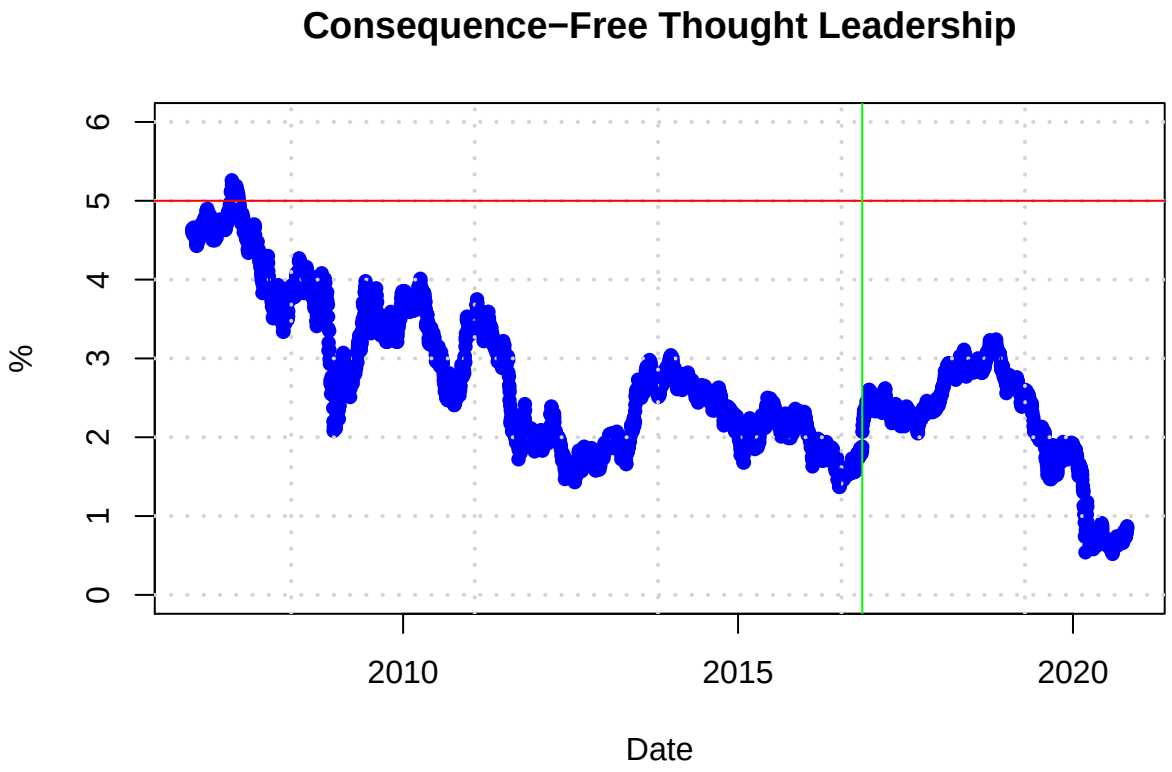
```
plot(tenyear$date, tenyear$value, pch=16, col='blue',
     xlab="Date", ylab="%", ylim=c(0, 10),
     main="Bernanke's Conjecture: A Global Savings Glut")
grid(lw=2)
lines(tenyear$date, tenyear$value, col='blue')
lines(fedfunds$date, fedfunds$value, col = 'red', pch=16)
```




### Interest Rates: A Conjecture

```
tenyear = drop_na(fredr("DGS10", observation_start = as.Date("2006-11-08")))
```

```
plot(tenyear$date, tenyear$value, pch=16, col='blue',
     xlab="Date", ylab="%", ylim=c(0, 6),
     main="Consequence-Free Thought Leadership")
grid(lw=2)
lines(tenyear$date, tenyear$value, col='blue')
abline(h=5.0, col='red')
abline(v=as.Date("2016-11-08"), col='green')
```




**Measures of central tendency**

```
x = c(2, 6, 5, 0, 7, 9, 5, 5, 7, 5)
```

```
mean(x)
```

```
## [1] 5.1
```

```
var(x)
```

```
## [1] 6.544444
```

```
sd(x)
```

```
## [1] 2.558211
```

```
y = c(10, 9, 10, 3, 6, 9, 9, 10, 2, 9)
```

```r
mean(y)
```

```
## [1] 7.7
```

```r
var(y)
```

```
## [1] 8.9
```

```r
sd(y)
```

```
## [1] 2.983287
```

```r
cov(x, y)
```

```
## [1] 0.9222222
```

```r
cor(x, y)
```

```
## [1] 0.1208382
```

### NO ASSIGNMENT THIS WEEK

Take this week to review and comprehend the fundamental statistical concepts introduced in class.