

# Accessing Financial Data with R

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## Abstract

Financial data analysis with R requires access to financial data. This document will demonstrate a variety of ways to access free financial data from the internet. We will also discuss accessing financial data downloaded from some commercial financial databases.

## 1 The `getSymbols` function from the `quantmod` package

Probably the most useful function for retrieving financial data from the internet is the `getSymbols` function from the `quantmod` package. The function `getSymbols` can download data from Yahoo Finance, Google Finance, the Federal Reserve's FRED database, and Oanda. The function can also read data from MySQL databases, `.csv` files, and `.RData` files.

The following code chunk shows the arguments of the function.

```
library(quantmod)
args(getSymbols)

## function (Symbols = NULL, env = parent.frame(), reload.Symbols = FALSE,
##      verbose = FALSE, warnings = TRUE, src = "yahoo", symbol.lookup = TRUE,
##      auto.assign = getOption("getSymbols.auto.assign", TRUE),
##      ...)
## NULL
```

The key arguments are summarized as follows:

**Symbols** character vector of ticker systems to download (this is the only required argument)

**src** data source: yahoo (default), google, MySQL, FRED, csv, RData, and oanda

### 1.1 Downloading data from Yahoo Finance

The following code chunk demonstrates how to download the S&P 500 index data from Yahoo Finance, the default data source.

```
getSymbols("^GSPC")
chart_Series(GSPC)
```

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## 1.2 Downloading data from the Federal Reserve's FRED database

The Federal Reserve's FRED database (<http://research.stlouisfed.org/>) contains more than 150,000 US and international financial and economic time series.

The following code chunk demonstrates how to download the 3-month Treasury Bill rate from FRED.

```
getSymbols("DGS3MO", src = "FRED")
## [1] "DGS3MO"
plot(DGS3MO, main = "3-Month Treasury Constant Maturity Rate", cex.main = 0.75)
```

