R Statistical Software - An Introduction

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Disclaimer: this is optional

This note is a very quick introduction to the R statistical software. You do not need to do any of this, or even download R Statistical Software, to follow 102. This is only extra for those who want to play with the data, do their own research, or even fact-check me, etc.

What is R?

R is a free software environment for statistical computing and graphics. It is released under the GNU General Public License, and an alternative to other popular commercial softwares such as Stata. Many statisticians and data scientists use R (and python) for exploring data.

Again, you do not have to, but you might want use Econ 102 as an excuse to teach yourself some elements of R. Macroeconomic data is constantly evolving in real-time, and R allows you to retrieve real-time data from up-to-date sources, as well as work with these datasets, quite easily. Learning a statistical software would also help you think critically about macroeconomic analysis that is typically found in the *Wall Street Journal*, the *New York Times*, and other reliable source of information, which often make heavy use of data. R make computations easy (such as transforming values to growth rate), detrending, as well as presenting data in the best way possible (such as plotting the time series of economic quantities, etc.).

Moreover, California is currently experiencing a shortage for data science skills. Even the consulting and the finance industry increasingly require knowing how to manipulate datasets. I view macroeconomics as an occasion to teach you these general purpose skills. Finally, these skills might also prove useful when you take Economics 103, in which you will learn more thoroughly the tools of regression analysis (if you have not already). Again, you do not at all need to learn R in order to succeed in this class, I am only providing you some material for those who are interested and want to do more.

Downloading R Statistical Software

You need to install `R` and `Rstudio`:

1. First you must get the **R statistical software**, which you may download on the UCLA website here. The latest release (2018-07-02, Feather Spray) is version 3.5.1. For Mac OSX: download here. For Windows: download here.
2. Second, I recommend you use a Graphical User Interface (GNU) for R such as **R Studio**. R Studio's latest release is 1.1.456: download here.

Packages

I use `tidyverse`, in particular for data manipulation as well as plotting data. This cheatsheet is a beginner's introduction to `tidyverse`. More particularly, it includes the following packages which I use:

- For data manipulation, I use `dplyr`. A cheatsheet is available here.

R-markdown

My lecture notes are created using `R-markdown`, which you can learn using this cheatsheet.