Workshop on R

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UC3M

23-26 June 2016

What is R? Why use R?

What is R?

- R is a programming language that was first developed during the 1990s.
- Particularly suitable for data analysis and creating graphics.

Why use R?

- Available for free!
- Incredibly flexible.
- Great for creating graphics.

Drawbacks?

- No point-and-click!
- Sometimes hard to figure out, what best way of doing something is.

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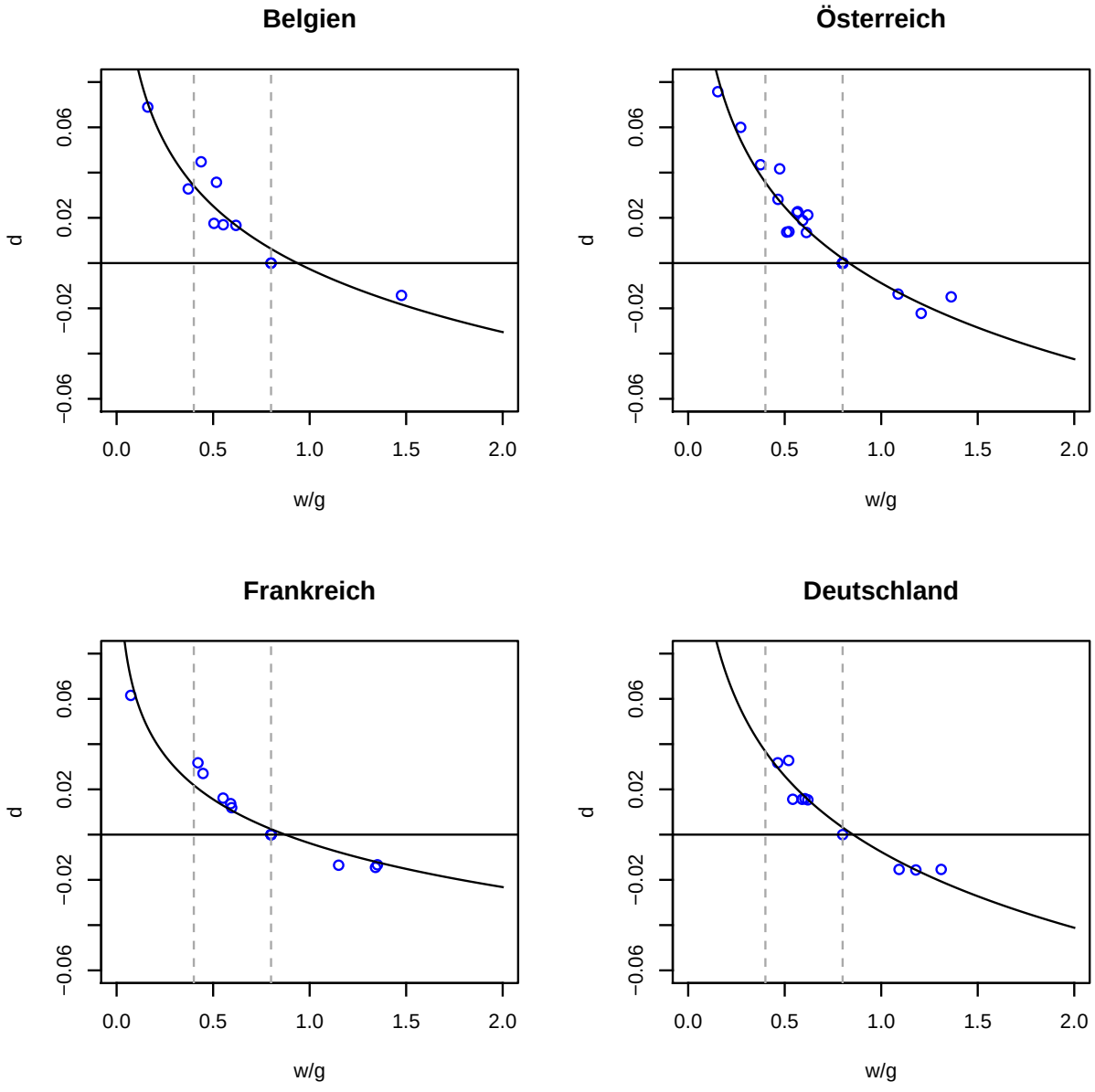
Some examples...



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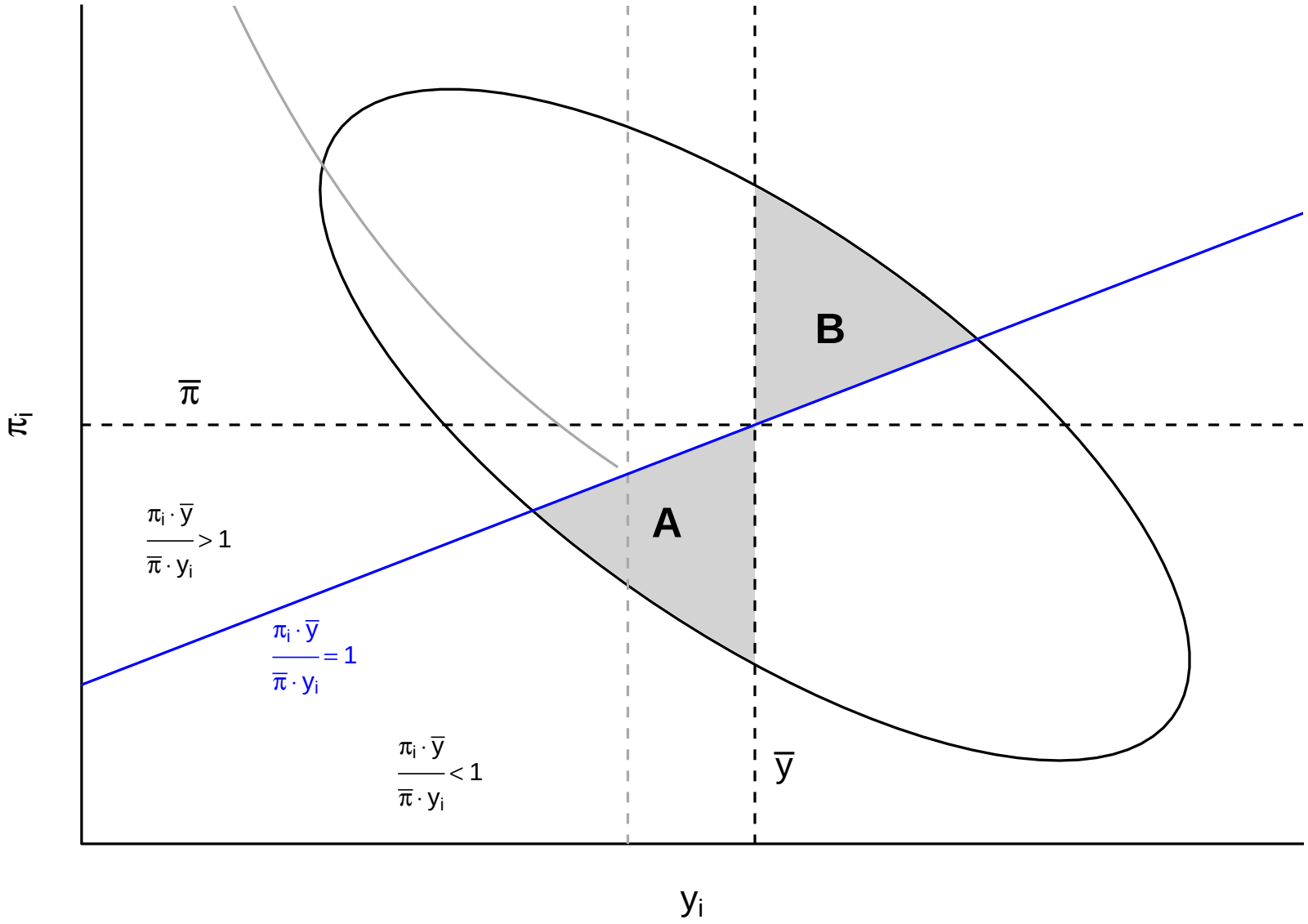

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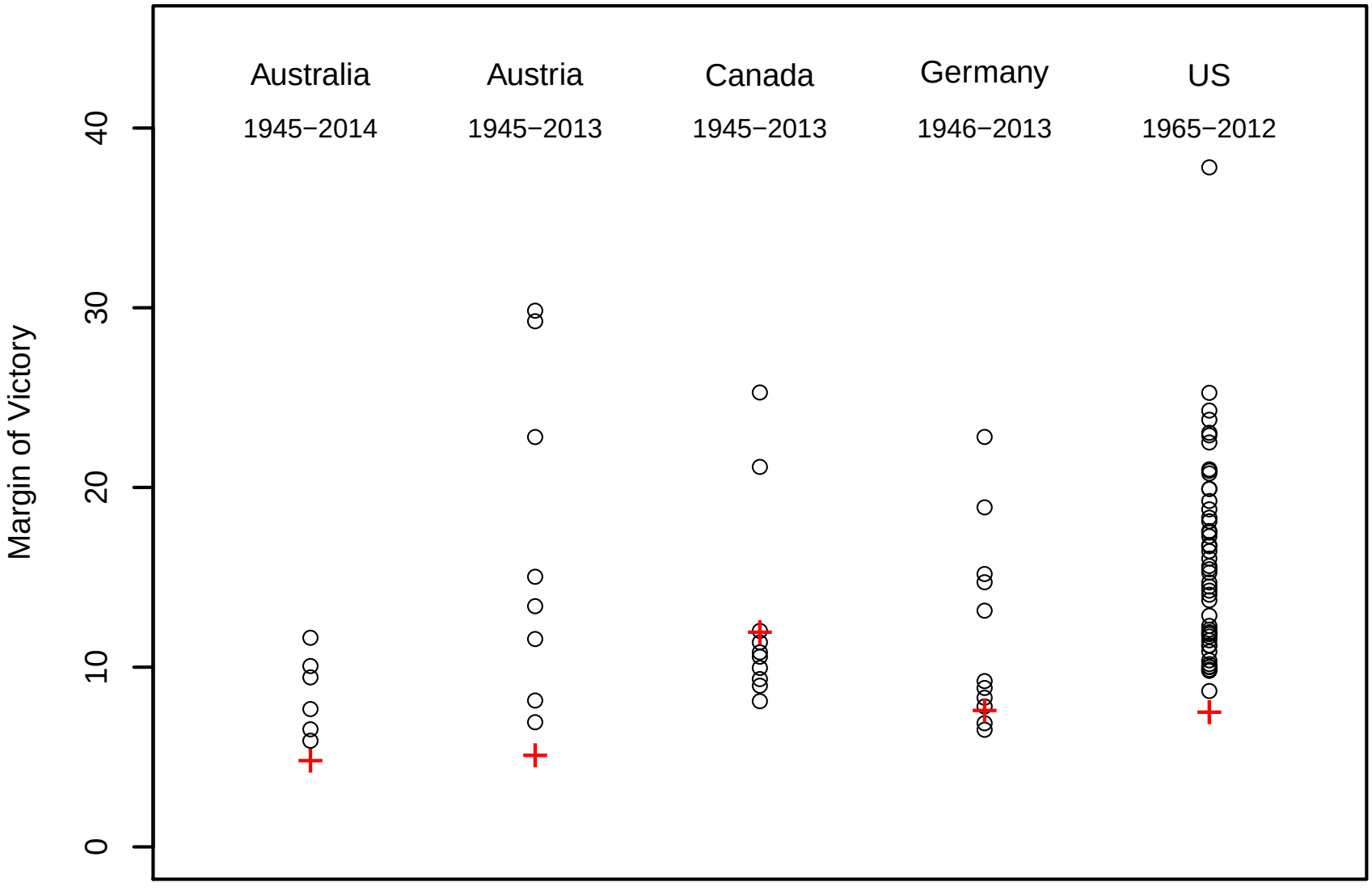

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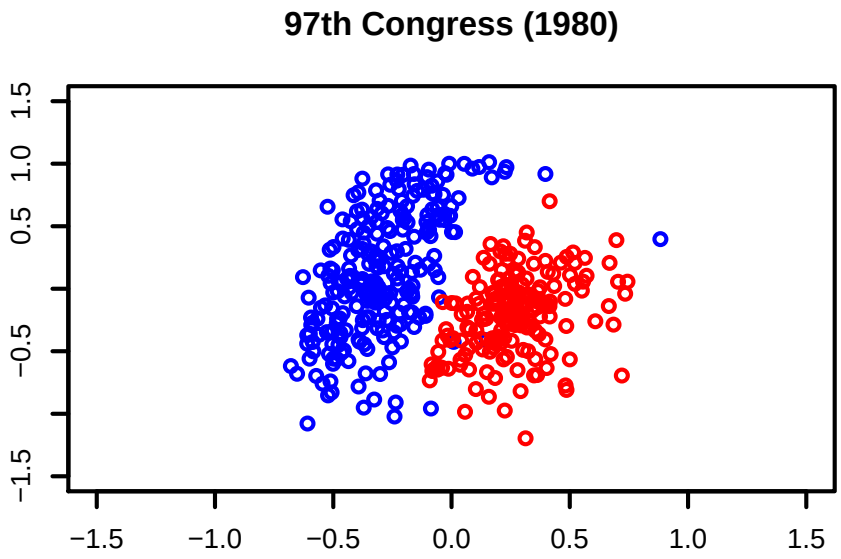

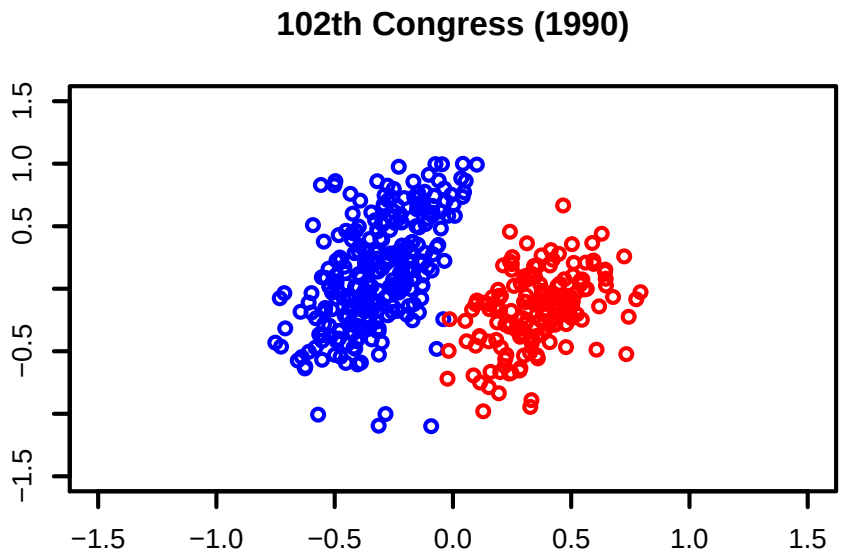

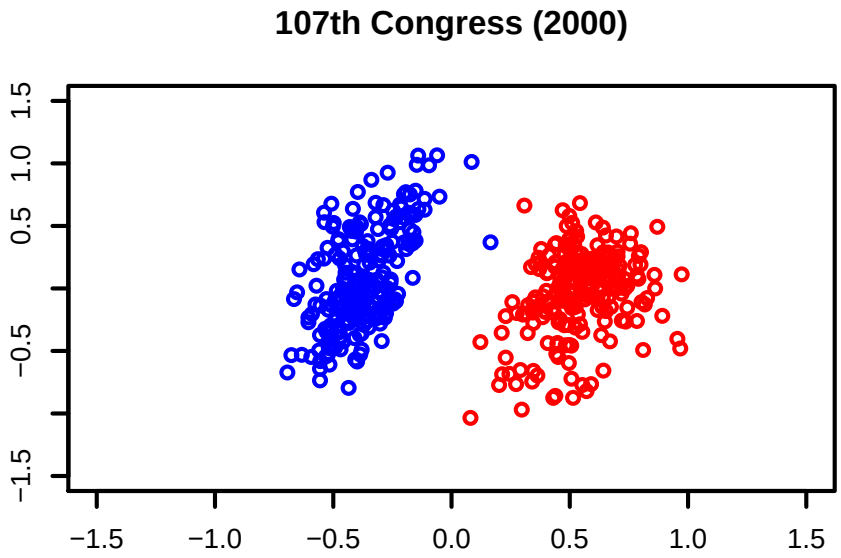

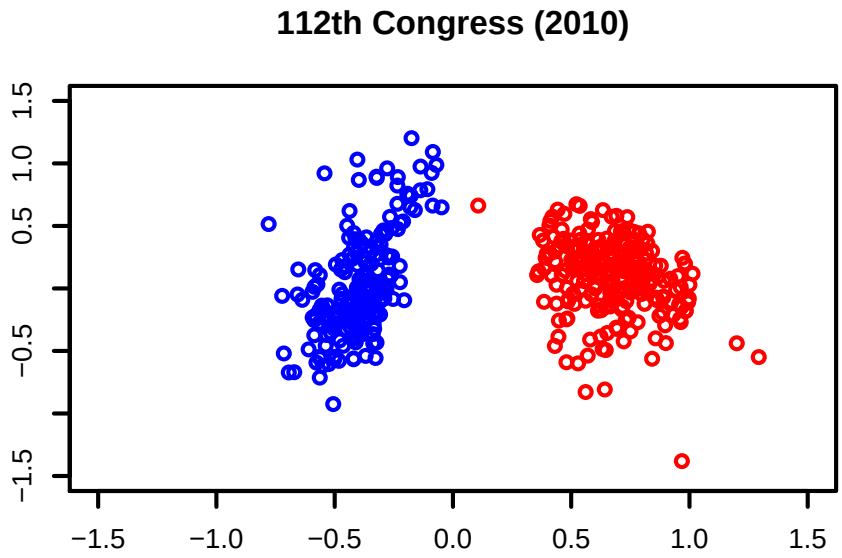

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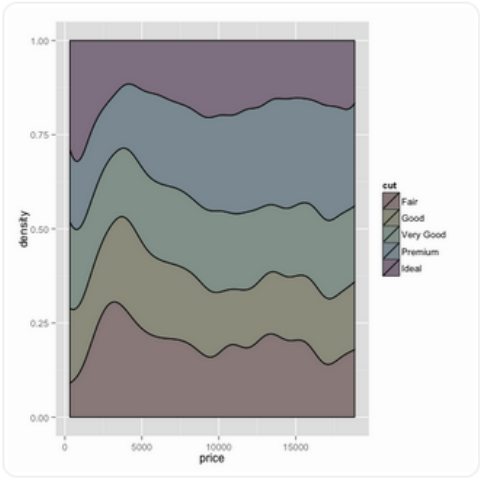
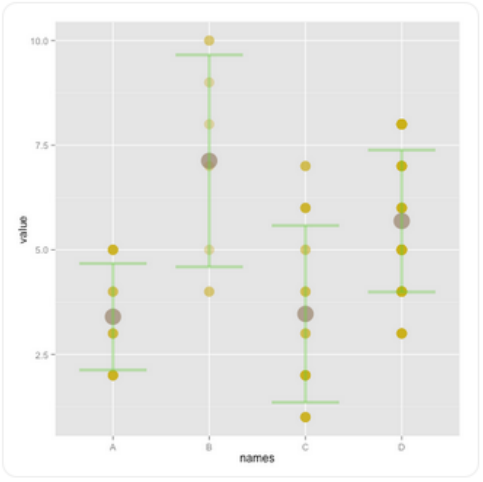
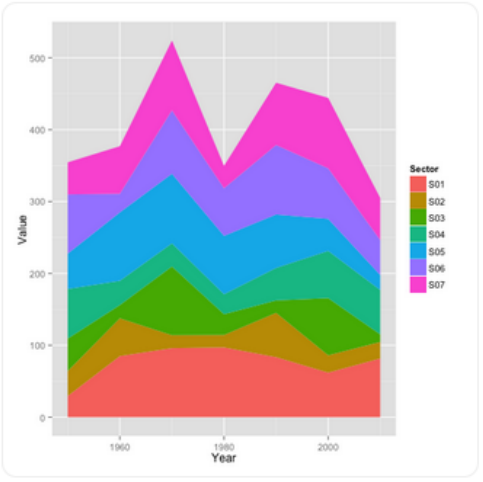


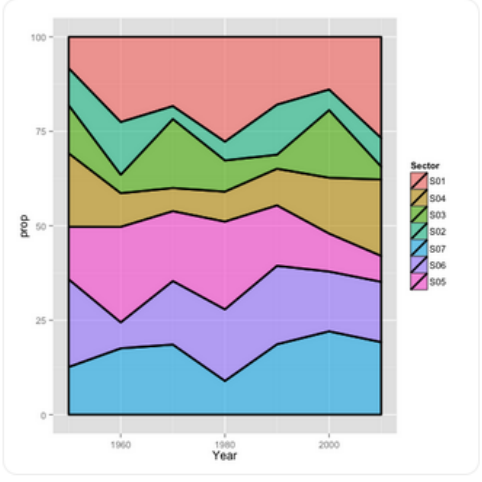
#135 Stacked density plot



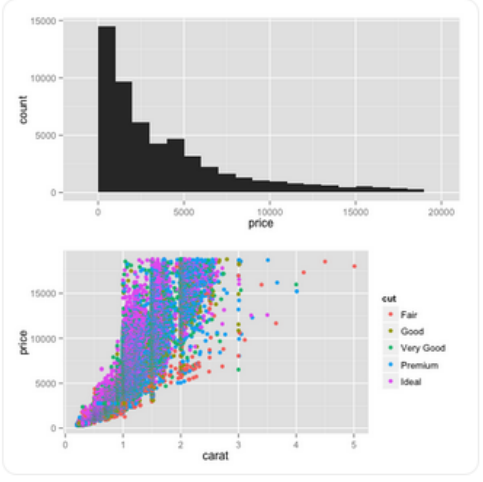
#47 groups comparison with ggplot2



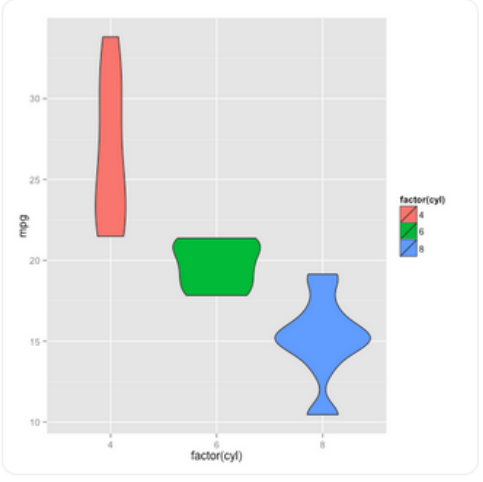
#136 Stacked Area Graph



#136 Stacked Area Graph



#117 Multiple ggplot2 on one page



#95 Violin plot with ggplot2

Source: http://www.r-graph-gallery.com/portfolio/ggplot2-package/

Outline 1/2

- The basics
  - Basic operations
  - Creating and removing objects
  - Working with matrices, strings, dates, missing values, data frames
  - Storing and exporting objects
  - User-defined functions
- Data analysis
  - Importing and modifying a data set
  - Descriptive statistics
  - Running regressions
  - Examples of more advanced techniques

Outline 2/2

- Graphics
  - Creating graphics
  - Exporting graphics
  - The ggplot2 package
- Advanced topics (if enough time)
  - Loops
  - Conditional statements
  - ...