

Cars and Gas

Bill Rising

StataCorp LP

2016 Oceania Stata Users Group Meeting
University of Sydney
30 Sep 2016

Introduction

- This is just a small lesson for illustration
 - Small is important
- Most of what we need is already here
- We'll add some code, add a figure, and move things around

Starting Up

- We'll use the auto dataset
 . sysuse auto
- As we all know, this is a US-centric dataset about old cars
- We would like to make the dataset metric-friendly
- We would like to model energy consumption of these ancient cars

Converting the Data to a Reasonable System

- We'd like to make the dataset metric-friendly
- We'll run the conversion code in the lesson, but show it only in the handouts

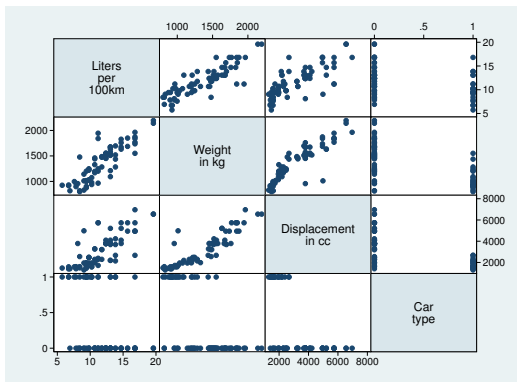
A Peek at the Dataset

- Here is the structure of our new dataset
 `. describe`
- Here are the summary statistics
 `. summarize`
- We now should look closer

A Graph Matrix

- We can look at dependencies

```
. graph matrix lp100km weight displacement foreign
```



A Simple Model

- From our graph, it appears we should try
 `. regress lp100km weight displacement foreign`
- The coefficient of weight is 0.00750 with a p -value of 0.00000000

Some Great Explanations

- Heavier cars use more gas
 - After adjusting for engine size and place of manufacture
- Non-US made cars use more gas
 - After adjusting for weight and engine size
- Engine size is not important
 - After adjusting for weight and place of manufacture

Conclusion

- These results are interesting
- We could make the results more interesting with more grant money