

Cross-references in LaTeX

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LaTeX automatically numbers sections, tables, figures and equations, and can handle cross-references. Here are some notes on how to take advantage of this feature in a `markstat` script. Note that this only applies if you are generating PDF via LaTeX.

Executive summary: use `{#id}` to label sections and figures, `\label{id}` to label tables and equations, and `\ref{id}` to refer to them.

1 Sections

Pandoc by default stops LaTeX from numbering sections. To obtain numbers add `numbersections: true` to the YAML metadata at the top of your document. To label a section add an identifier to the heading. (Pandoc adds default identifiers, but if you are going to refer to the section I recommend you add one manually.) For example this section's heading is coded `# Sections {#sections}`. You can then refer to it using the LaTeX command `\ref{sections}`. This has been Section 1.

2 Tables

With tables, adding an identifier such as `{#id}` to the caption does not work, so we use the LaTeX command `\label{id}` instead. We can then refer to it as `\ref{id}`. For example the caption for the table shown below is coded `: Fuel Efficiency \label{tabfuel}`. We can then refer to the table using `\ref{tabfuel}`. Note that LaTeX adds “Table 1:” to the caption.

Table 1: Fuel Efficiency

Car Type	Unadjusted	Adjusted
Foreign	4.31	5.46
Domestic	5.32	4.83

As you can see from Table 1, domestic cars are more efficient than foreign cars when we adjust for weight.

3 Figures

Here is a figure showing gallons per hundred miles by weight for foreign and domestic cars. Consult the source script for the code.

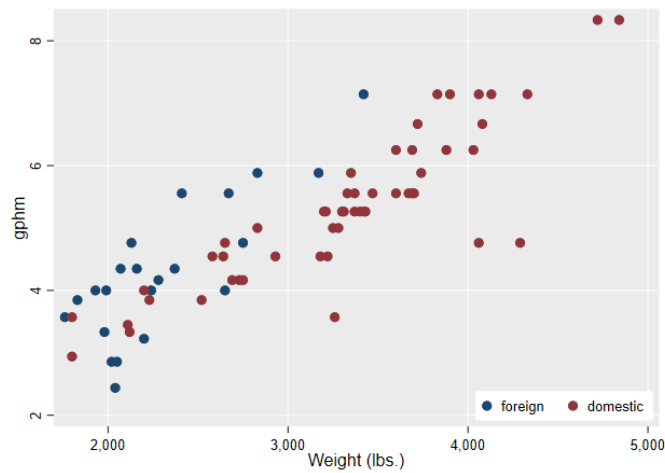


Figure 1: Fuel Efficiency

To insert the figure in the document I used the Markdown code `![[Fuel Efficiency](fuel.png){#plotfuel}]`, adding an identifier, so we can refer to the figure using `\ref{plotfuel}`, as in see Figure 1. Note that LaTeX adds “Figure 1:” to the caption.

4 Equations

LaTeX will only number equations in `equation` environments. Fortunately Pandoc accepts this notation. Here is an example:

Equation 1 below shows a simple linear regression model

$$y = \alpha + \beta x + \epsilon \tag{1}$$

Here I started the environment by coding `\begin{equation}\label{slr}`, which labels the equation as `slr`. We can then refer to it using the LaTeX command `\ref{slr}`.

5 Running

Resolving references in LaTeX requires two passes. When you create the document use the option `keep(tex aux)` to keep the intermediate files:

```
markstat using crossref, pdf keep(tex aux)
```

Then run `pdflatex` to resolve the references. You can do this from Stata

```
whereis(pdflatex)
! "`r(pdflatex)'" crossref.tex
view browse crossref.pdf
```

You may need to close the file in your Acrobat viewer before running the second step.