ECON 6009
Graduate Seminar
Memorial University of Newfoundland

Lecture 4-*Introduction to Latex (III)*

INTRODUCTION

How to find errors and to debug your .tex file

Creating and using tables to describe your data and to report your results

Using basic ***macros*** and stored results

Further on mixing Stata and LaTeX

Note: most of these notes come from the suggested guides by Oetiker et al. (2003) and Doob (2000)

Errors

Minor and Major

Latex helps

What to do?

Errors

Some errors are minor and not even make a difference that you might care about

Others prevent any output from being produced

Or at least leave the document incomplete

Errors

Some might eliminate some of your input form the output of an otherwise good looking document

Latex helps

You get a log of each error and warning

You can ask for some basic help from Latex

Typing ***h***

But here are other responses to error messages

What to do?

Responses to TEX error messages

Desired response	Input to TEX	Result
Help	`h<CR>`	Reason for stopping listed on terminal.
Insert	`i<CR>`	Next line inserted into TEX input file.
Exit	`x<CR>`	Exit from TEX. Completed pages to DVI file.
Scroll	`s<CR>`	List message and continue after minor errors.
Run	`r<CR>`	List message and continue after any errors.
Quiet	`q<CR>`	All terminal listings suppressed.
Carry on	`<CR>`	TEX continues as best it can.

More on interacting Stata and LaTeX: tables

Using different tools that extend the use of the basic ***estimates store*** => ***estimates table*** idea

There are a few quick individual user-generated commands, such as ***latab*** and ***sutex***

NB: remember that you can get these ados installed by Stata in the appropriate folders by typing for example ***findit sutex,*** while online

More on interacting Stata and LaTeX

Using different tools that extend the use of the basic ***estimates store*** => ***estimates table*** idea

But more generally ***esttab, estout, outreg***, ***outreg2***, ***tabout***, ***texsave***, etc. can produce latex code for you

Sometimes you can "send" that output to a .tex file and even add it to an existing one

Generating tables

But it is rarely exactly what you would want in order to:

- Present properly and fully your output
- Automatize your work completely
- Avoid unwanted items in the table
- Give you full flexibility in terms of presentation of results

Generating tables

But it is rarely exactly what you would want..

So you usually want to learn a couple of these techniques, generate some defaults that work for you and store the template

You also want to take advantage of the notion of ***macros*** and ***saved results*** from Stata

Generating tables

macros and ***saved results*** from Stata:

Try typing:

- ***ereturn list*** after a regression model
- ***return list*** after for example ***summarize***

Generating tables

macros and ***saved results*** from Stata: example from Gallup (2012)

```
webuse auto
generate goodrep = rep78==5
quietly regress mpg weight foreign goodrep
test foreign = -goodrep
local F : display %5.2f `r(F)'
local p : display %4.3f `r(p)'
di r(F)
di r(p)

outreg , addrows("F test: foreign = -goodrep", "`F'" \ "p value", "`p'")
```

If you copy and paste you have to correct the closing quotation marks (‘)

Generating tables

macros and ***saved results*** from Stata:
example from Gallup (2012)

	mpg
weight	-0.006
	(10.40)**
foreign	-2.745
	(2.53)*
goodrep	3.613
	(2.98)**
_cons	40.733
	(19.59)**
R2	0.70
N	74
F test: foreign = -goodrep	0.43
p value	0.515

* p<0.05; ** p<0.01

Generating tables

If we want to have LaTex code we need to remember that the ***tabular*** environment of LaTex is what we will be working with

Generating tables

In LATEX, a table is declared by
\begin{tabular}{...}

- each table entry/column is separated by an ampersand (&);
- each table line is separated by a double backslash (\\)
- the environment is closed by ***\end{tabular}***

\hlines can be used too

More on interacting Stata and LaTeX

And you want to have:

- Labels (for numbering, LOTs, and cross-referencing): you want to float your tables
- Captions (the aim is that the info in the table stands alone)
- Notes for data source and other information

More on interacting Stata and LaTeX

You want to have:

- The option to include standard results from several regressions (using ***estimates store*** for example)
- Ideally also the chance to add nonstandard results (test statistics, transformations of estimated parameters, etc., e.g. using ***outreg***, or ***eststo*** and ***esttab***)…
- ***See http://www.ats.ucla.edu/stat/stata/faq/returned_results.htm***

More on interacting Stata and LaTeX

Once you have settled on a style and a format, ideally your choice will be flexible enough for you to include it in your do file automatically export the formatted table with the correct code to a word or LaTex document

e.g. exploiting the benefits afforded by ***texdoc***

Generating tables

The more basic commands and default options will generate a standard table of results that indeed beats the raw Stata output

More on interacting Stata and LaTeX

The most flexible commands, such as ***outreg*** (Gallup 2012) will also allow you to:

- have tables in landscape orientation
- to span several pages (see also the ***supertabular*** environment)
- ask LaTex to use multicolumn cells
- include footnotes an notes within the table float
- allow you to organize multiequation model results (e.g. ***mlogit***) in the most convenient way

More on interacting Stata and LaTeX

- allow you to organize multiequation model results (e.g. ***mlogit***) in the most convenient way
- The default usually displays estimation results of each model in a single column
- When several equations in the estimation model share covariates, it is usually better to display results like merged results of separate estimations

More on interacting Stata and LaTeX

- ***outreg,*** for example, also allows you to take advantage of the use of ***loops***
- And some commands will allow you to include transformations of the estimated coefficients that you do not even need to calculate "manually"
- For instance, ***outreg*** will display marginal effects obtained by ***margins*** (or ***mfx*** or ***dprobit***)

More on interacting Stata and LaTeX

- Example (Gallup 2012)

quietly sureg (price foreign weight length) (mpg displ = foreign weight)

outreg, varlabels eq_merge ctitles("", Price Equation, Mileage Equation, Engine Size Equation) summstat(r2_1, r2_2, r2_3 \ N, N, N) summtitle(R2 \ N)

	Price Equation	Mileage Equation	Engine Size Equation
Car type	3,575.260	-1.650	-25.613
	(5.75)**	(1.57)	(2.05)*
Weight (lbs.)	5.691	-0.007	0.097
	(6.18)**	(10.56)**	(13.07)**
Length (in.)	-88.271		
	(2.81)**		
Constant	4,506.212	41.680	-87.235
	(1.26)	(19.65)**	(3.47)**
R2	0.55	0.66	0.81
N	74	74	74

* p<0.05; ** p<0.01

More on interacting Stata and LaTeX

At least the following table-creating commands have the ability to generate tex code for your tables:

mktab, *outtex*, *est2tex*, *esttab*, *outreg*, *outreg2*

More on interacting Stata and LaTeX

Remember: do not EVER type anything that can be retrieved from results stored by Stata

Also remember that you only need to learn once how to construct a sophisticated table: save the template in a safe place for your next paper

Questions?

Any questions?

Any suggestions?

Any complaints?

References

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- Winter, N. 2005. mktab: Stata module to print table of estimates in delimited or screen-presentation format. Statistical Software Components S416801, Department of Economics, Boston College. http://ideas.repec.org/c/boc/bocode/s416801.html.

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