

Creating L^AT_EX documents from within Stata

Ben Jann

ETH Zürich

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Introduction

- `texdoc` is a new command to create \LaTeX documents from within Stata.
- `texdoc` is especially convenient to create \LaTeX documents that contain Stata output.
- `texdoc` is like weaving, but all Stata.
- I use it for teaching, e.g. to create solutions for class assignments.
- I also use it for Stata Journal articles.

Syntax and Usage

- Create a \LaTeX document (interactive mode)

```
texdoc init docname [, replace ]  
tex line 1  
tex line 2  
...  
texdoc close
```

Syntax and Usage

- Include Stata output in L^AT_EX document

```
texdoc init docname [, replace ... ]  
...
```

```
texdoc stlog [name]  
... commands ...  
texdoc stlog close
```

```
...  
texdoc close
```

Syntax and Usage

- Within `texdoc stlog`, type

```
texdoc stlog oom command
```

to suppress output (and print “*(output omitted)*”).

- Furthermore, within `texdoc stlog` type

```
texdoc stlog cnp
```

to continue output on next page (and print “*(continued on next page)*”).

Syntax and Usage

- Non-interactive mode: Process a do-file containing `texdoc` commands.

```
texdoc do filename [, init(docname) close replace ... ]
```

- In non-interactive mode you can use the

```
/*tex ... tex*/
```

comment structure to include blocks of \LaTeX code.

- `init()` and `close` can also be specified within the do-file using `texdoc init` and `texdoc close`
- Get rid of all \LaTeX and `texdoc` commands:

```
texdoc strip oldfile newfile [, replace ]
```

Examples

Create homework assignment (interactive mode)

```
. texdoc init assignment
(texdoc output file is assignment.tex)
. tex \documentclass[12pt]{article}
. tex
. tex \begin{document}
. tex
. tex \section*{Assignment A}
. tex
. tex \subsection*{Exercise 1}
. tex
. tex Open auto.dta and describe the data.
. tex
. tex \subsection*{Exercise 2}
. tex
. tex Run some regressions.
. tex
. tex \subsection*{Exercise 3}
. tex
. tex Draw a scatter plot.
. tex
. tex \subsection*{Exercise 4}
. tex
. tex Draw a histogram.
. tex
. tex \end{document}
. texdoc close
(texdoc output written to assignment.tex)
```

Assignment A

Exercise 1

Open `auto.dta` and describe the data.

Exercise 2

Run some regressions.

Exercise 3

Draw a scatter plot.

Exercise 4

Draw a histogram.

Solutions to assignment (non-interactive mode)

```
. type solutions.do
* Solutions to Assignment A
/*tex
\documentclass[12pt]{article}
\usepackage{stata, graphics}
\begin{document}
\section*{Assignment A}
tex*/
* Ex 1
/*tex
\subsection*{Exercise 1}
Open auto.dta and describe the data.
tex*/
texdoc stlog
sysuse auto
summarize
texdoc stlog close
/*tex
As we can see, the mean price is 6165.
tex*/
* Ex 2
/*tex
\usepage
\subsection*{Exercise 2}
Run some regressions.
tex*/
texdoc stlog
regress price weight mpg
texdoc stlog oom xi: regress price mpg i.rep
testparm _1*
texdoc stlog close
* Ex 3
/*tex
\usepage
\subsection*{Exercise 3}
Draw a scatter plot.
tex*/
texdoc stlog
scatter price mpg
texdoc stlog close
graph export solutions_gri.eps
!epstopdf solutions_gri.eps
tex \includegraphics[scale=0.7]{solutions_gri}
* Ex 4
/*tex
\usepage
\subsection*{Exercise 4}
Draw a histogram.
tex*/
texdoc stlog
hist price
texdoc stlog close
local gname $(TeXdoc_stprefix)$(TeXdoc_stcounter)
graph export 'gname'.eps
!epstopdf 'gname'.eps
tex \includegraphics[scale=0.7]{'gname'}
/*tex
\end{document}
tex*/
. texdoc do solutions, nit(solutions) close
(texdoc output file is solutions.tex)
```

Assignment A

Exercise 1

Open auto.dta and describe the data.

Variable	Label	Storage type	Display format	Value range
price	price	float	%10.0g	1000 - 13900
weight	weight	float	%10.0g	1000 - 5000
mpg	miles per gallon	float	%10.0g	12 - 44
rep78	number of times repaired or replaced	float	%10.0g	1 - 8
foreign	foreign	byte	%10.0g	0 - 1

As we can see, the mean price is 6165.

Exercise 2

Run some regressions.

Source	SS	df	MS	F	Prob > F
Model	10000.000	2	5000.000	10.00	0.0001
Residual	10000.000	47	212.766		
Total	20000.000	49			

Variable	Source	SS	df	MS	F	Prob > F
weight	Model	8000.000	1	8000.000	16.00	0.0002
mpg	Model	2000.000	1	2000.000	4.00	0.0501
weight	Residual	1000.000	46	21.739		
mpg	Residual	1000.000	46	21.739		

As we can see, the mean price is 6165.

Exercise 3

Draw a scatter plot.



Exercise 4

Draw a histogram.



Issues

- `texdoc do` always runs everything, that is it
 - ▶ cannot process \LaTeX without running Stata commands,
 - ▶ cannot run Stata commands without processing \LaTeX .
- An option to copy the pieces of Stata output directly into the \LaTeX document instead of using external log files would be nice.
- `texdoc stlog` relies on `sjlog`, which has some limitations:
 - ▶ linesize is fixed
 - ▶ closes the (unnamed) default log
- `texdoc do` does not exit the do-file on `exit`
- Overall, `texdoc` is only for small documents. I would not use it to produce a whole book or so. Also, `texdoc` is suited primarily for documents where Stata plays an important role. If the document is mostly \LaTeX then an alternative approach should probably be followed ...

Alternative approach

- Make \LaTeX the default and tag Stata commands.
- That is, define a \LaTeX document containing blocks of Stata code such as

```
\begin{stata}
... commands ...
\end{stata}
```

```
\begin{stlog}
... commands ...
\end{stlog}
```

and then process the file e.g. as follows

```
dotex filename
```

- Implementation would not be much more complicated than the implementation of `texdoc`.

Thanks for listening!