

# Creating L<sup>A</sup>T<sub>E</sub>X documents from within Stata

Ben Jann

ETH Zürich

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# Introduction

- `texdoc` is a new command to create  $\text{\LaTeX}$  documents from within Stata.
- `texdoc` is especially convenient to create  $\text{\LaTeX}$  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  $\text{\LaTeX}$  document (interactive mode)

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

# Syntax and Usage

- Include Stata output in L<sup>A</sup>T<sub>E</sub>X 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  $\text{\LaTeX}$  code.

- `init()` and `close` can also be specified within the do-file using `texdoc init` and `texdoc close`
- Get rid of all  $\text{\LaTeX}$  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	Values	Label values
year	Year	int	%d	76-83	
make	Make	str	%s	Acura, Alfa Romeo, AMC, ...	
model	Model	str	%s	1600, 1800, 1900, ...	
mpg	Miles per gallon (city)	float	%f	12-44	
price	Price	float	%f	1763-12996	
weight	Weight (pounds)	float	%f	1613-5140	
mpg_hwy	Miles per gallon (highway)	float	%f	15-44	
mpg_city	Miles per gallon (city)	float	%f	12-44	
mpg_45	Miles per gallon (45 mph)	float	%f	12-44	
mpg_90	Miles per gallon (90 mph)	float	%f	12-44	
rep78	Repair record (1=poor, 2=fair, 3=good)	int	%d	1-3	
foreign	Foreign	int	%d	0-1	
rep78_1	Repair record (1=poor)	int	%d	0-1	
rep78_2	Repair record (2=fair)	int	%d	0-1	
rep78_3	Repair record (3=good)	int	%d	0-1	
foreign_1	Foreign (1)	int	%d	0-1	
foreign_2	Foreign (2)	int	%d	0-1	
foreign_3	Foreign (3)	int	%d	0-1	

As we can see, the mean price is 6165.

### Exercise 2

Run some regressions.

Linear regression results		Source	SS	df	MS
Model	1	1	10000	1	10000
Residual	1	1	10000	1	10000
Total	2	2	20000	2	10000

  

Source	SS	df	MS	F	Prob > F
Model	10000	1	10000	100	0.0000
Residual	10000	1	10000		
Total	20000	2	10000		

Linear regression results

### Exercise 3

Draw a scatter plot.



### Exercise 4

Draw a histogram.



# Issues

- `texdoc do` always runs everything, that is it
  - ▶ cannot process  $\text{\LaTeX}$  without running Stata commands,
  - ▶ cannot run Stata commands without processing  $\text{\LaTeX}$ .
- An option to copy the pieces of Stata output directly into the  $\text{\LaTeX}$  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  $\text{\LaTeX}$  then an alternative approach should probably be followed ...

## Alternative approach

- Make  $\text{\LaTeX}$  the default and tag Stata commands.
- That is, define a  $\text{\LaTeX}$  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!