Introduction to LaTeX
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Sakshi Mohan, Sudhanshu Sharma

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Outline

Why LaTeX

Basics of LaTeX

Mathematical Input and STATA Analyses

Referencing

Collaborating in LaTeX

Why LaTeX?

- Helps you focus on content without having to worry about formatting.
- Specify what you're doing, not how to do it
- WYSIWYM philosophy
- Extremely flexible, with cross-platform compatibilities with STATA, Python, Matlab etc.
- Signalling device: can make any document look nerdy!

Basics of LATEX

1. Document classes
   - Article
   - Report
   - Book
   - Letter

2. LATEX Environments

3. LATEX Commands

4. LATEX Comments

5. LATEX Packages

Math Mode in LaTeX

1. Packages Required
   - *amsmath*
   - *amssym*
2. Environments
   - **Single Equation:** begin{equation}...end{equation}
   - **Long Equation:** begin{multline*}...end{multline*}
   - **Several Lines:** begin{equation} begin{split}...end{split} end{equation}
   - **Several Equations:** begin{align*} ... end{align}
   - **Matrix:** matrix, Vmatrix, vmatrix, bmatrix

Incorporating STATA output in LaTeX

1. *018 eststo* and *esttab*

Example:Regression Estimates in LaTeX

foreach i in AFR EAP ECA SAR LAC MNA {
eststo: reg investment bribe sales manufacturing govt_dum
size_dum if region == "'i'", robust
}
esttab using filename.tex, replace title() mtitles("AFR" "EAP"
"ECA" "SAR" "LAC" "MNA") noconstant p scalars(N F r2)
star(* .10 ** .05 *** .01) drop(countrydummy*) addnote("AFR =
Sub-Saharan Africa"...)

Table 4: Impact of Recorded Bribe-Payments on Firm-level Investment in Equipment by Region

	(1) AFR	(2) EAP	(3) ECA	(4) SAR	(5) LAC	(6) MNA
informal_payment_dummy	1.453***	2.048***	1.766***	1.072***	0.965***	3.158***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
lannual_sales_lastyr	0.528***	0.804***	0.760***	0.369***	0.861***	0.585***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
manufacturing	0.611***	0.807***	1.098***	0.449**	0.742***	0.393
	(0.000)	(0.000)	(0.000)	(0.042)	(0.000)	(0.189)
govt_ownership_dummy	0.0184	-2.021***	-0.863***	-0.955	0.182	2.743
	(0.973)	(0.000)	(0.008)	(0.404)	(0.801)	(0.135)
size_large	3.252***	2.123***	2.981***	2.824***	2.697***	2.384***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
size_medium	1.015***	1.223***	1.127***	1.264***	1.029***	1.311***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
_cons	-3.255	-5.086***	-4.562***	-2.132**	-14.30***	-6.923***
	(0.216)	(0.000)	(0.000)	(0.029)	(0.000)	(0.000)
N	12725	6521	16898	4169	17056	2203
adj. R^2	0.141	0.222	0.205	0.154	0.311	0.181
F	104.1	98.63	148.7	78.21	430.7	42.99
r2	0.144	0.224	0.207	0.156	0.312	0.185

p-values in parentheses

AFR = Sub-Saharan Africa, EAP = East Asia and the Pacific, ECA = Central Asia,

LAC = Latin America and the Carribean, MNA = Middle East and North Africa, SAR = South Asia

* $p < .10$, ** $p < .05$, *** $p < .01$

- *frmttable* : Matrices

Example: Inserting Matrices in LaTeX

ttest income, by(treatment)
mat T[1,1] = r(mu_1)
mat T[1,2] = r(mu_2)
mat T[1,3] = r(mu_1) - r(mu_2)
mat T[1,4] = r(p)
ttest sales, by(treatment)
mat T[2,1] = r(mu_1)
...
mat T[8,1] = r(N_1)
mat T[8,2] = r(N_2)
mat rownames T = "Monthly Income" "Sales - Good Week" ...
(n) ...

	Treatment	Control	Difference	(p-value)
Monthly Income	32,864.68	32,026.75	837.93	0.57
Sales - Good Week	16,033.65	15,855.68	177.98	0.90
Sales - Regular Week	12,049.14	11,730.57	318.57	0.75
Sales - Bad Week	8,511.80	8,148.77	363.03	0.65
Sales - Good month	57,173.07	54,658.27	2,514.80	0.58
Sales - Regular Month	43,749.83	42,666.20	1,083.63	0.76
Sales - Bad Month	29,867.53	29,464.35	403.18	0.89
(n)	896.00	1,111.00		
Income from other sources	20,467.23	20,005.60	461.64	0.69
(n)	886.00	1,087.00		

Referencing

1. References in LaTeX are managed in a separate bibliography file (extension .bib)
   - This allows for systematic review, updation
2. .bib files can be created using various reference management programs like BibTex, JabRef etc.

Collaborating on LATEX

1. Dropbox
2. ShareLaTeX

Resources for LaTeX

1. For beginners
   - Sharelatex
   - LyX Tutorials
2. For advanced users
   - TeX - LaTeX Stack Exchange
   - Introduction to LaTeX
3. LaTeX packages
   - List of LaTeX packages (alphabetic)