

From \begin to \end

The Complete LaTeX Guide

Day 3 of 7 — Tables, Figures & Regression Output

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Format: 7-Day Intensive Course

Session: Day 3 of 7

Today's Agenda

- 1 Recap & Today's Goal
- 2 The tabular Environment
- 3 booktabs: Publication-Quality Rules
- 4 multicolumn & multirow
- 5 A Complete Regression Table
- 6 Figures
- 7 Float Placement
- 8 Workflow: tablesgenerator.com
- 9 Practice

Quick Recap: Day 2

Yesterday: inline vs. display math, the `amsmath` package, subscripts/superscripts, Greek letters, operators, multi-line derivations with `align`, matrices, and equation labeling.

Today's goal: tables and figures are usually the hardest part for anyone switching from Word/Excel or Stata. Leave today with a repeatable workflow for turning regression output and charts into clean, journal-style tables and figures.

The Basics: tabular

```
\begin{tabular}{lcc}  
  Country & GDP Growth & Inflation \\  
  Bangladesh & 6.0\% & 5.4\% \\  
  India & 7.2\% & 5.1\% \\  
\end{tabular}
```

Compiled Output

Country	GDP Growth	Inflation
Bangladesh	6.0%	5.4%
India	7.2%	5.1%

Why & What: Column spec `{lcc}` sets alignment per column: `l` = left, `c` = center, `r` = right. `&` separates columns, `\\` ends a row – same grid logic as the matrices from Day 2. Notice there are **no lines** in the output: plain `tabular` draws no borders at all, which is why the next slide matters.

booktabs: The Economics-Journal Look

```
\usepackage{booktabs}

\begin{tabular}{lcc}
\toprule
Country & GDP Growth & Inflation \\
\midrule
Bangladesh & 6.0\% & 5.4\% \\
\bottomrule
\end{tabular}
```

Compiled Output

Country	GDP Growth	Inflation
Bangladesh	6.0%	5.4%

Why & What: `\toprule`, `\midrule`, `\bottomrule` add clean horizontal rules with no vertical lines – this is the standard look in economics journals (AER, QJE, JPE all format tables this way). Never mix `\hline` with booktabs rules in one table – the spacing is calibrated for one style or the other.

Grouped Headers with multicolumn

```
\begin{tabular}{lccc}
\toprule
& \multicolumn{3}{c}{Model} \\
\cmidrule{1r}{2-4}
Variable & (1) & (2) & (3) \\
\midrule
Education & 0.08 & 0.07 & 0.07 \\
\bottomrule
\end{tabular}
```

Compiled Output

Variable	Model		
	(1)	(2)	(3)
Education	0.08	0.07	0.07

Why & What: `\multicolumn` merges 3 columns under one centered heading; `\cmidrule{1r}{2-4}` draws a partial rule under just those columns – the standard way to label “(1)/(2)/(3)” blocks. `multirow` does the same for merged rows.

Putting It Together: A Regression Table

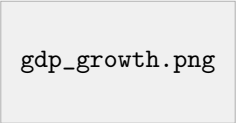
	(1) Baseline	(2) +Controls	(3) +Fixed Effects
Education	0.082*** (0.011)	0.075*** (0.010)	0.069*** (0.012)
Experience		0.021** (0.009)	0.019** (0.008)
Constant	8.21*** (0.15)	7.95*** (0.18)	8.02*** (0.20)
Observations	1,204	1,204	1,204
R^2	0.14	0.19	0.23

Why & What: Every tool on this slide comes from the last three: standard errors sit in parentheses *below* each coefficient by leaving the variable-name cell blank on that row; significance stars (*** $p < 0.01$, ** $p < 0.05$) are just typed as literal text. This one table is `tabular + booktabs + multicolumn` and nothing else – the exact structure of a real published regression table.

The figure Environment

```
\begin{figure}[htbp]
  \centering
  \includegraphics[width=0.6\textwidth]{gdp_growth.png}
  \caption{GDP growth rate, 2010--2024}
  \label{fig:gdp}
\end{figure}
```

Compiled Output



gdp_growth.png

Figure 1: GDP growth rate, 2010–2024

Why & What: `\includegraphics` inserts an image file you've uploaded to your Overleaf project – typically a chart exported from Stata (`graph export`), R, or Excel. `\caption` and `\label` work exactly as with tables: the caption is numbered automatically ("Figure 1") and the label lets you reference it elsewhere with `\ref{fig:gdp}`.

Float Placement: Why Tables “Wander”

```
\begin{table}[htbp]  
  ...  
\end{table}
```

Why & What: h = here, t = top of page, b = bottom, p = a dedicated page of its own. htbp lets LaTeX choose the best fit among all four – and it often **moves** your table to keep good page layout. This is normal: tables and figures are **floats**, not fixed text. Fighting placement aggressively (forcing [H] via the float package) usually looks worse than trusting the default algorithm. There is no single “output” to show here – the point *is* that the position is not fixed.

Fast Workflow: Excel/Stata to LaTeX

- 1 Copy your regression output or Excel range.
- 2 Paste into **tablesgenerator.com** – it renders a live preview as you paste.
- 3 Choose the **booktabs** style in its formatting options.
- 4 Export the generated tabular code and paste it into Overleaf.
- 5 Hand-edit: add `\caption`, `\label`, and significance notes.

This is the standard shortcut used in practice – nobody hand-types large tables from scratch.

Hands-on Exercise

Take a small regression output table (from Stata, R, or a mocked-up dataset) and reproduce it in booktabs style:

- 1 Paste the data into tablesgenerator.com as a first pass.
- 2 Bring the generated code into Overleaf.
- 3 Hand-edit for a correct `\caption` and `\label`.
- 4 Add a grouped header using `\multicolumn` for at least two model columns.

Homework Before Day 4

Homework

Insert all tables and figures from your running paper draft, with proper captions and labels for every one. If you don't yet have charts, mock up at least one placeholder figure with a caption.

Resources for today:

- Overleaf – “Tables” / “Positioning Images and Tables”
- Overleaf – “Lists of Tables and Figures”
- [tablesgenerator.com](https://www.tablesgenerator.com)
- Wikibooks LaTeX – Tables and Floats chapters

Citations & Bibliography

BibTeX, natbib, and building an author-year citation pipeline for your literature review.

Thank You

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