ECON 2510

Lecture 6: Tables that Work

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University of Vermont · Fall 2026

THE BIG QUESTION

When is a table better than a chart?

Use a table when…

- Readers need the exact value
- They'll look up a specific row
- Columns are in different units
- There are a few numbers, not a pattern

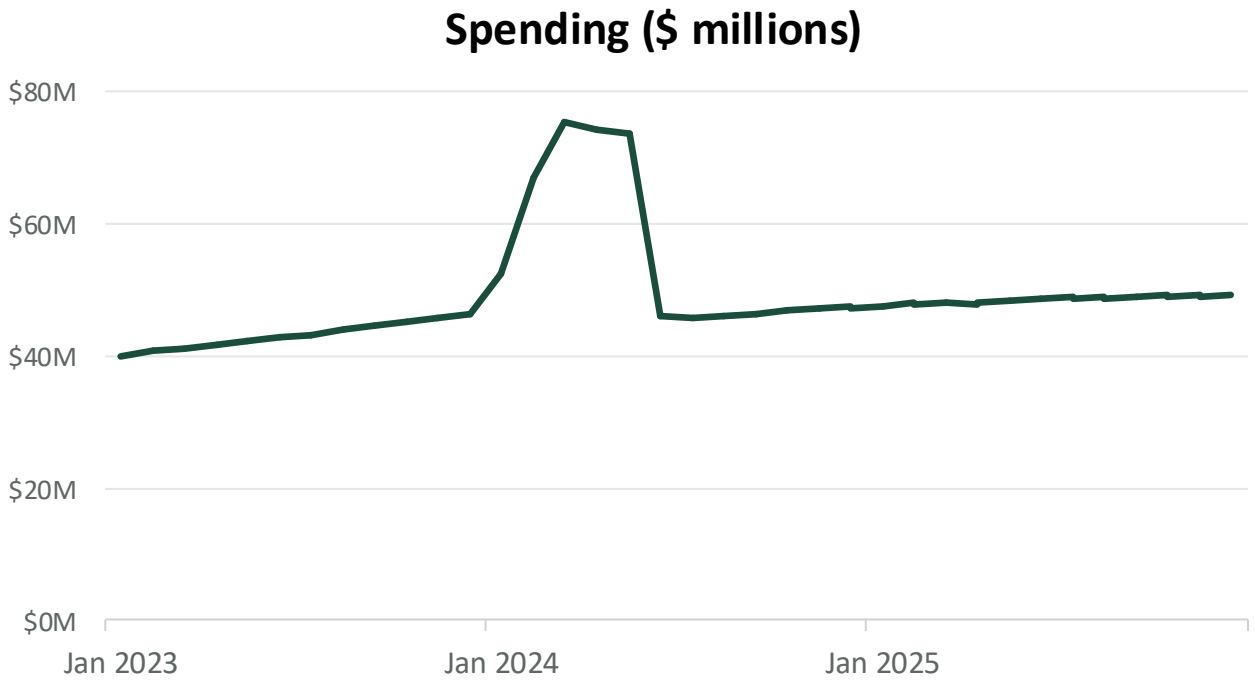
Use a chart when…

- The shape is the message: a trend, a gap, a spike
- Readers need the big picture
- There are many values of one measure

SAME DATA, TWO JOBS

Chart for the shape, table for the numbers

Program spending per month, $ millions



Program spending per month

Millions of dollars

Jan 2023	Start of the series	40.0
Dec 2023	Before the spike	46.3
Mar 2024	Peak	75.2
Jun 2024	After the drop	46.1
Dec 2025	Latest month	49.3

Source: Agency name, dataset name. Illustrative numbers.

TABLE ANATOMY

The parts of a table that works

Table 1. Households served and program spending, by region, 2025

Households in thousands; spending in millions of dollars unless noted

Region	Households served		Spending	
	Monthly avg.[a]	Share of all (%)	Total	Per home ($/mo)
South	412.0	14.2	1,236.0	250
West	298.5	12.1	931.3	260
Midwest	187.3	9.8	539.4	240
Northeast	155.1	10.6	502.5	270
All regions	**1,052.9**	**12.0**	**3,209.2**	**254**

Source: Agency name, dataset name (release date). Illustrative numbers.

[a] Average of the 12 monthly counts, not a sum.

1. **Title**
   What, where, and when.
2. **Units line**
   So no cell needs a $ or an “M.”
3. **Spanner**
   One header over related columns.
4. **Stub**
   The row labels, in plain words.
5. **Source note**
   Where the numbers came from.
6. **Footnote**
   Anything a reader could misread.

ROUNDING

Precision is an honesty problem

AS THE SPREADSHEET SHOWS IT	AS YOU REPORT IT
1,234,567.0833 people	**1.2 million people**
$186.7615 per person	**$187 per person**
13.909235% of residents	**13.9% of residents**

MATCH THE MEASUREMENT

An average of 12 monthly counts has no meaningful decimals.

TWO OR THREE DIGITS

Enough to compare, few enough to remember.

PARTS MAY NOT ADD UP

Rounded rows can miss the total by a bit. Say so in a footnote.

ORDERING

Order rows by meaning, not the alphabet

Share of residents enrolled in a program, by county

ALPHABETICAL: ANSWERS NOTHING

Adams	9.4%
Baker	14.8%
Clark	6.1%
Dalton	18.2%
Ellis	11.7%
Foster	21.5%

RANKED: ANSWERS “WHO'S HIGHEST?”



When alphabetical is right: a long reference table, where readers look up one row they already know.

LAYOUT

Align the numbers, lose the gridlines

BEFORE

Region	Households (000s)	Spending ($M)
South	412	1236.0
West	298.47	931.3
Midwest	187.3	539.42
Northeast	155.08	502.5

AFTER

Region	Households (000s)	Spending ($M)
South	412.0	1,236.0
West	298.5	931.3
Midwest	187.3	539.4
Northeast	155.1	502.5

TEXT LEFT, NUMBERS RIGHT

Right-aligned numbers line up by place value.

SAME DECIMALS DOWN A COLUMN

412.0 and 298.5, not 412 and 298.47.

THREE RULES, NO GRID

Top, under the headers, bottom. Whitespace does the rest.

BEFORE YOU PUBLISH

Does your table work?

- ✓ The title says what, where, and when
- ✓ A units line names every unit
- ✓ Spanners group related columns
- ✓ Stub labels are plain words, not codes
- ✓ Rows are ordered by the point you're making
- ✓ Precision matches what was measured
- ✓ Numbers are right-aligned with the same decimals
- ✓ A source note and any footnotes are there

EXCEL

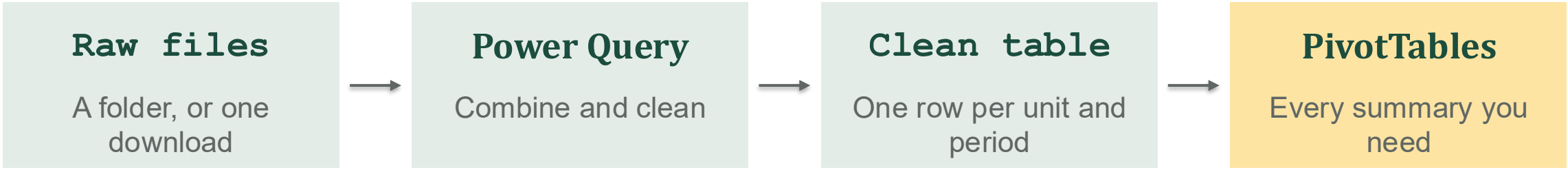
PivotTables past the basics

Building tables you can refresh, regroup, and trust

Refreshable pivots · grouping · Show Values As · calculated fields
Slicers and timelines · GETPIVOTDATA · the Data Model · number formats · Word

EXCEL TOOLS

Build pivots on Power Query output



1. Insert › PivotTable from the PowerQuery’s name, not a cell range
2. Data › Refresh All reruns the query, then updates every pivot built on it

EXCEL TOOLS

Grouping: dates and numeric bins

Right-click a field in the pivot › Group. Illustrative numbers.

DATES: EXCEL GROUPS BY CALENDAR YEAR

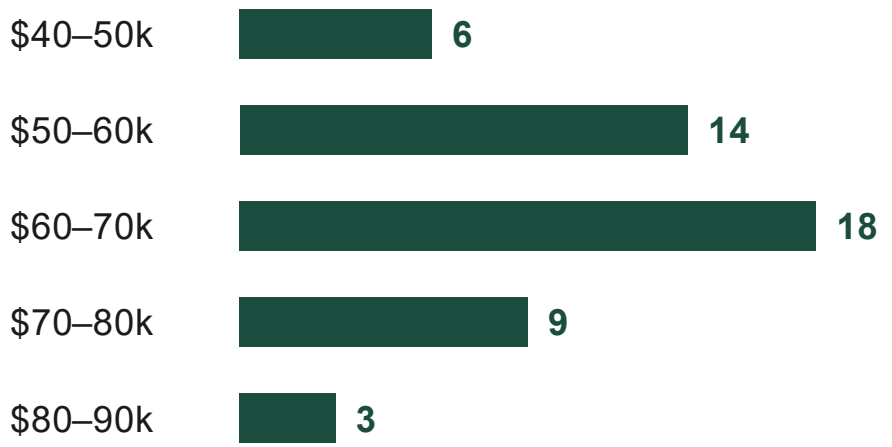
Calendar year	Spending ($M)
2022	**61.2**
2023	128.4
2024	133.9
2025	**69.0**

Fiscal year (Jul–Jun)	Spending ($M)
FY 2023	125.0
FY 2024	131.6
FY 2025	135.9

Red rows are half years. Ex: Data from July 2022 to June 2025 cuts calendar years in half. If your source runs on a fiscal year (federal: Oct–Sep; many states: Jul–Jun), add a FiscalYear column in Power Query and group on that.

NUMBERS: GROUP INTO BINS

Counties by median household income



Group › Starting at 40000, Ending at 90000, By 10000. Needs one row per county, with income as a number.

EXCEL TOOLS

Show Values As: same number, two denominators

Right-click a value › Show Values As. A budget by department and program. Illustrative numbers.

Department / Program	Spending ($M)	% of column total	% of parent row
Education	**610.0**	**40.7%**	**40.7%**
Transportation	**470.0**	**31.3%**	**31.3%**
Health	**420.0**	**28.0%**	**28.0%**
Hospitals	260.0	17.3%	61.9%
Clinics	110.0	7.3%	26.2%
Outreach	**50.0**	**3.3%**	**11.9%**
Total budget	**1,500.0**	**100.0%**	**100.0%**

% of column total

Each row's share of the grand total.

Outreach: 3.3% of the whole budget

% of parent row total

Each item's share of the group it sits in.

Outreach: 11.9% of Health's budget

EXCEL TOOLS

Difference From and Running Total

Monthly spending; a program change takes effect in May. Illustrative numbers.

Month	Spending ($M)	% Difference From previous	Running Total In Month ($M)
Jan	50.0		50.0
Feb	51.5	3.0%	101.5
Mar	52.0	1.0%	153.5
Apr	51.0	(1.9%)	204.5
May	**43.4**	**(14.9%)**	**247.9**
Jun	42.8	(1.4%)	290.7
Jul	43.5	1.6%	334.2
Aug	44.0	1.1%	378.2

January is blank: the first item has no "previous" to compare against.

% Difference From

```
Base field: Month
Base item: (previous)
```

Answers: "How much did it change?"

Running Total In

```
Base field: Month
```

Answers: "How much so far?"

EXCEL TOOLS

Calculated fields and their limits

PivotTable Analyze › Fields, Items & Sets › Calculated Field. Illustrative numbers.

Store	Units	Revenue ($)	Price (row)
A	1,000	5,000	5.00
B	100	800	8.00

Calculated field: `Price = Revenue / Units`

Calculated field

5,800 ÷ 1,100. Total revenue over total units.

$5.27

Average of the Price column

(5.00 + 8.00) ÷ 2. Treats a small store like a big one.

$6.50

EXCEL TOOLS

Custom number formats

Format Cells › Number › Custom. The value doesn't change; only what's shown does.

Value in the cell	Format code	Shows as	Units line says
12,345,678,901	`#,##0,,`	**12,346**	Millions of dollars
12,345,678,901	`#,##0.0,,,`	**12.3**	Billions of dollars
4,567,890	`#,##0,`	**4,568**	Thousands of people
-0.150	`0.0%;(0.0%)`	**(15.0%)**	Negatives in parentheses
0	`#,##0;(#,##0);"–"`	**–**	Zeros as a dash

EACH COMMA DROPS 3 ZEROS

One comma: thousands. Two: millions. Three: billions.

SEMICOLONS SPLIT SECTIONS

Positive ; negative ; zero.

UNITS GO IN THE UNITS LINE

Not “M” or “$” in every cell.

EXCEL TOOLS

Slicers and timelines for exploring

Filter by clicking instead of digging through dropdowns.

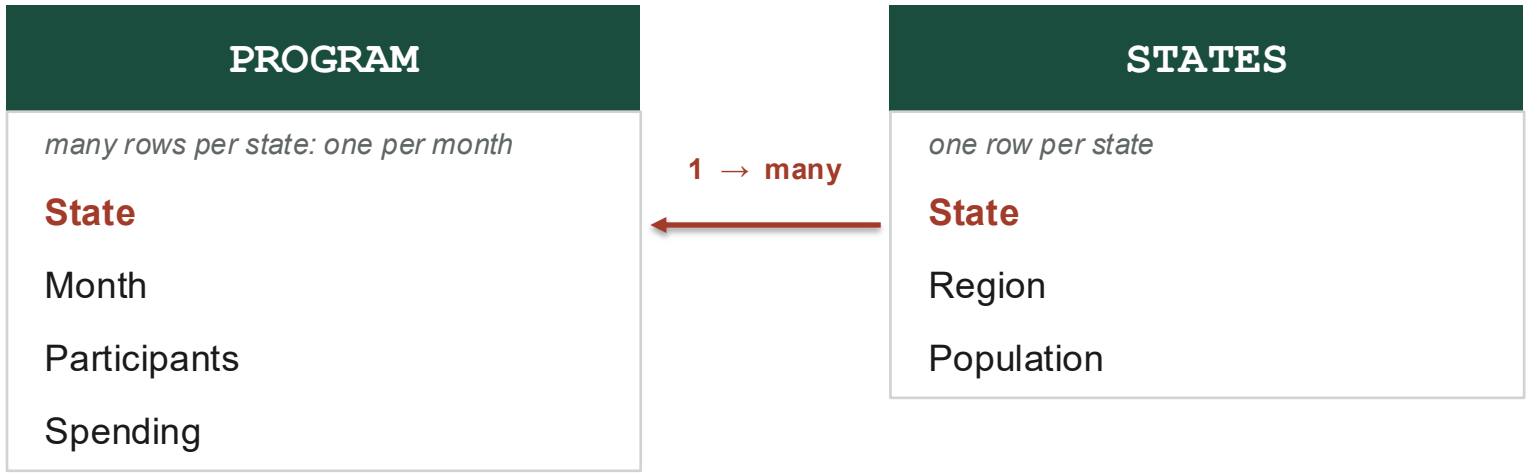


1. Insert › Slicer for any field. Insert › Timeline needs a real Date column (set it in Power Query).
2. Use them to explore. In a final table, put the filter in the title instead.

EXCEL TOOLS

The Data Model: relate tables, skip the lookup column

Program data and population often live in different tables. A relationship joins them inside the pivot.



1. **Add both**

   Insert › PivotTable › “Add this data to the Data Model.”

2. **Relate**

   Data › Relationships › New. Link the two State columns.

3. **Pivot across**

   Region from STATES, Spending from PROGRAM, side by side.

Measure: `SUM(PROGRAM[Spending]) / SUM(STATES[Population])`

Spending per resident, at any level: state, region, or total

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EXCEL TOOLS

Getting a table into Word without wreckage

Copy the finished range in Excel, then choose how Word pastes it.

Use Destination Styles

RECOMMENDED

- Editable text in a real Word table
- Takes the document's fonts
- Keeps your Excel number formats

Picture

FOR A FIXED LOOK

- Looks exactly like Excel
- Can't fix a typo in Word
- Can blur when resized

Link

USE WITH CARE

- Updates when the workbook changes
- Breaks if the file moves or is renamed
- Can change a table you already checked