

**5 EXCEL  
FEATURES  
EVERY  
DATA  
ANALYST  
SHOULD KNOW**

# Financial Modeling in Excel

## 5 Excel features you should know

### Data Table

A great tool for your what-if analysis. A range of cells in which you can change values in some of the cells and come up with different answers to a problem.

#### How to create it?

##### Instructions

1. Write down input data
2. Calculate the value you want to find out
3. Write down additional input data you want to test

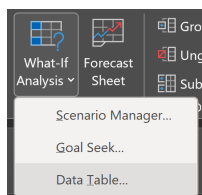
##### Example

Interest rate, number of periods and starting amount if you want to see how your savings amount would differ under different scenarios

Savings amount from the initial input data

Changes in interest rate, starting amount

4. Go to Data -> What-If Analysis -> Data Table



5. Put in row and column input cell that corresponds to the layout you have created in step #3 and press OK

Row input cell - interest rate from initial input data;

Column input cell - starting amount from initial input data

|                   |          |
|-------------------|----------|
| Interest Rate     | 7%       |
| Number of Periods | 3        |
| Starting Amount   | \$ 2,000 |

|          | \$6,430  | 5.50%    | 6.00%   | 6.50%   | 7.00%    | 7.50%    | 8.00%    | 8.50% |
|----------|----------|----------|---------|---------|----------|----------|----------|-------|
| \$ 1,500 | \$ 4,752 | \$ 4,775 | \$4,799 | \$4,822 | \$ 4,846 | \$ 4,870 | \$ 4,893 |       |
| \$ 1,600 | \$ 5,069 | \$ 5,094 | \$5,119 | \$5,144 | \$ 5,169 | \$ 5,194 | \$ 5,220 |       |
| \$ 1,700 | \$ 5,386 | \$ 5,412 | \$5,439 | \$5,465 | \$ 5,492 | \$ 5,519 | \$ 5,546 |       |
| \$ 1,800 | \$ 5,702 | \$ 5,730 | \$5,759 | \$5,787 | \$ 5,815 | \$ 5,844 | \$ 5,872 |       |
| \$ 1,900 | \$ 6,019 | \$ 6,049 | \$6,079 | \$6,108 | \$ 6,138 | \$ 6,168 | \$ 6,198 |       |
| \$ 2,000 | \$ 6,336 | \$ 6,367 | \$6,398 | \$6,430 | \$ 6,461 | \$ 6,493 | \$ 6,524 |       |
| \$ 2,100 | \$ 6,653 | \$ 6,686 | \$6,718 | \$6,751 | \$ 6,784 | \$ 6,817 | \$ 6,851 |       |
| \$ 2,200 | \$ 6,970 | \$ 7,004 | \$7,038 | \$7,073 | \$ 7,107 | \$ 7,142 | \$ 7,177 |       |
| \$ 2,300 | \$ 7,286 | \$ 7,322 | \$7,358 | \$7,394 | \$ 7,430 | \$ 7,467 | \$ 7,503 |       |
| \$ 2,400 | \$ 7,603 | \$ 7,641 | \$7,678 | \$7,716 | \$ 7,754 | \$ 7,791 | \$ 7,829 |       |
| \$ 2,500 | \$ 7,920 | \$ 7,959 | \$7,998 | \$8,037 | \$ 8,077 | \$ 8,116 | \$ 8,156 |       |

*By changing the initial input data, your data table will update too!*

# Financial Modeling in Excel

## 5 Excel features you should know

### Pivot Table

A PivotTable is a powerful tool to calculate, summarize, and analyze data that lets you see comparisons, patterns, and trends in your data.

#### How to create it?

##### Instructions

1. Have an Excel table with data
2. Go to Insert -> PivotTable and choose a table or a range you want to analyze
3. Choose fields to summarize the data by
4. Go to PivotTable Analyze or Design tabs to customize the Pivot Table

##### Example

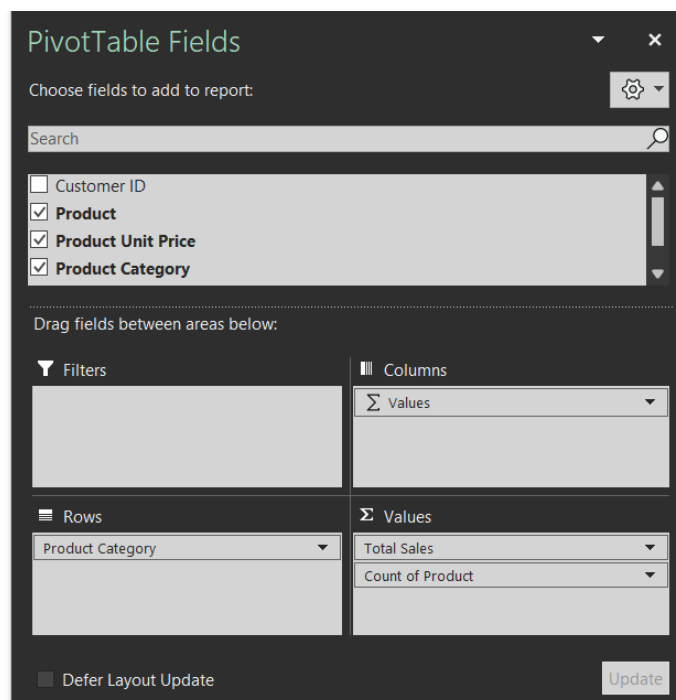
Store order history with customer ID, product ID, product price and product category

Choose the table from step 1

Look at the total sales and count of products bought by product categories. Choose columns, Rows, Filters, Values – everything is customizable and you can play with the report!

Add a slicer, insert timeline, add subtotals and other things

| Summarized Data    |                 |                  |
|--------------------|-----------------|------------------|
| Product Category   | Total Sales     | Count of Product |
| Clothing           | \$ 687          | 3                |
| Furniture          | \$ 845          | 6                |
| Home & Garden      | \$ 319          | 4                |
| Pet Supplies       | \$ 174          | 2                |
| <b>Grand Total</b> | <b>\$ 2,025</b> | <b>15</b>        |



# Financial Modeling in Excel

## 5 Excel features you should know

### Data Validation

Use data validation to restrict the type of data or the values that users enter into a cell. One of the most common data validation uses is to create a drop-down list.

#### How to create it?

##### Instructions

1. Select the cell you want to create a drop-down list in

2. Select Data -> Data Validation

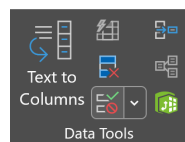
3. Choose what will the users be able to choose (numbers, dates, time, custom text, etc.)

4. Create Input Message so that users know what they are choosing

5. Link other data in your model to this dropdown list, so that values update automatically

##### Example

On your input data Excel sheet, create a cell where users will be able to choose between different store locations



Offer to choose from a list of store locations such as "USA, Spain, UK, Australia, Japan, Germany"

"Select Store Location"

Link profit and loss statements to geographical location of the stores from the dropdown by using "IF" statements

| Store                        | USA  | Year       | 2021       |            |            |             |             |
|------------------------------|------|------------|------------|------------|------------|-------------|-------------|
| P&L Projections              |      | USA        | 2021       |            |            |             |             |
| Sales                        | (\$) | 78,000,000 | 88,627,500 | 93,783,659 | 95,774,992 | 102,351,736 | 109,838,853 |
| Domestic Sales               | (\$) | 70,000,000 | 72,467,500 | 75,021,979 | 77,666,504 | 80,404,248  | 83,238,498  |
| Foreign Sales                | (\$) | 8,000,000  | 16,160,000 | 18,761,679 | 18,108,488 | 21,947,487  | 26,600,355  |
| Manufacturing Costs          | (\$) | 56,500,000 | 63,240,000 | 66,585,600 | 67,917,312 | 72,211,366  | 77,140,835  |
| Materials                    | (\$) | 20,900,000 | 23,449,800 | 24,709,500 | 25,203,690 | 26,823,333  | 28,684,191  |
| Direct Labor                 | (\$) | 25,300,000 | 28,386,600 | 29,911,500 | 30,509,730 | 32,470,350  | 34,722,968  |
| Other Direct Costs           | (\$) | 8,800,000  | 9,873,600  | 10,404,000 | 10,612,080 | 11,294,035  | 12,077,554  |
| Indirect Manufacturing Costs | (\$) | 1,500,000  | 1,530,000  | 1,560,600  | 1,591,812  | 1,623,648   | 1,656,121   |
| Gross Profit                 | (\$) | 21,500,000 | 25,387,500 | 27,198,059 | 27,857,680 | 30,140,369  | 32,698,018  |
| SG&A Costs                   | (\$) | 7,560,000  | 7,892,550  | 8,118,073  | 8,282,748  | 8,541,628   | 8,821,262   |
| Marketing Costs              | (\$) | 1,560,000  | 1,772,550  | 1,875,673  | 1,915,500  | 2,047,035   | 2,196,777   |

# Financial Modeling in Excel

## 5 Excel features you should know

### Power Query

Power Query (known as Get & Transform in Excel) is a great tool for minimizing repetitive daily tasks. You can import or connect to external data and then shape this data. For example, remove a column, change a data type, or merge tables in ways that meet your needs. Then, you can load your query into Excel to create charts and reports.

#### How to create it?

##### Instructions

1. Connect to Data  
Go to Data -> Get Data

2. Transform Data  
Do all kinds of changes to your data while the original dataset stays the same

3. Combine Data  
Add other datasets and make connections between them to get more insights

4. Load Data  
Load the transformed and combined data to your worksheet and enjoy the clean dataset

##### Example

Pull in data from a different Excel file that contains participant names and stage points

Clean Data - remove unneeded columns, assign data types, rename columns for better understanding, etc.

Pull in another data source on the background of the participants - country, company, age group, etc. Append Queries.

Load the appended query into the Excel file. After each stage, add information on the points and refresh dataset.

| Stage 1 Rank | Stage 2 Rank | Stage 3 Rank | Stage 4 Rank | Stage 5 Rank | Age Group | Country                  | Region              |
|--------------|--------------|--------------|--------------|--------------|-----------|--------------------------|---------------------|
| 1            | 2            | 1            | 2            | 1            | Open      | United States of America | North America       |
| 2            | 4            | 1            | 2            | 1            | Open      | Ireland                  | Europe              |
| 3            | 3            | 3            | 3            | 3            | Open      | Australia                | Asia & Pacific      |
| 4            | 2            | 10           | 22           | 5            | Open      | Canada                   | North America       |
| 5            | 7            | 6            | 24           | 11           | Open      | United Kingdom           | Europe              |
| 6            | 6            | 28           | 4            | 16           | Open      | United States of America | North America       |
| 7            | 28           | 4            | 7            | 7            | Open      | United Kingdom           | Europe              |
| 8            | 12           | 12           | 21           | 10           | Open      | India                    | Asia & Pacific      |
| 9            | 10           | 16           | 10           | 12           | Open      | Australia                | Asia & Pacific      |
| 10           | 8            | 8            | 12           | 22           | Open      | United States of America | North America       |
| 11           | 30           | 7            | 11           | 16           | Open      | United States of America | North America       |
| 12           | 9            | 5            | 134          | 28           | Open      | Netherlands              | Europe              |
| 13           | 12           | 25           | 14           | 47           | Open      | Australia                | Asia & Pacific      |
| 14           | 24           | 30           | 18           | 24           | Open      | Ukraine                  | Europe              |
| 15           | 18           | 20           | 27           | 18           | Open      | United States of America | North America       |
| 16           | 35           | 11           | 36           | 19           | Open      | United States of America | North America       |
| 17           | 32           | 25           | 36           | 26           | Open      | South Africa             | Africa              |
| 18           | 16           | 38           | 5            | 46           | Open      | New Zealand              | Asia & Pacific      |
| 19           | 90           | 13           | 50           | 8            | Open      | South Africa             | Africa              |
| 20           | 19           | 22           | 23           | 23           | Open      | Philippines              | Asia & Pacific      |
| 21           | 22           | 42           | 42           | 13           | Open      | Spain                    | Europe              |
| 22           | 32           | 52           | 26           | 19           | Open      | United States of America | North America       |
| 23           | 16           | 48           | 53           | 31           | Open      | United States of America | North America       |
| 24           | 58           | 13           | 31           | 39           | Open      | New Zealand              | Asia & Pacific      |
| 25           | 63           | 15           | 17           | 43           | Open      | Canada                   | North America       |
| 26           | 24           | 23           | 16           | 84           | Open      | United States of America | North America       |
| 27           | 51           | 45           | 48           | 13           | Open      | Costa Rica               | South/Latin America |
| 28           | 14           | 67           | 40           | 31           | Open      | Poland                   | Europe              |

# Financial Modeling in Excel

## 5 Excel features you should know

### Group Data

If you have a list of data you want to group and summarize, you can create an outline of up to eight levels. Very important for financial models to switch between different levels of data complexity. Group data instead of hiding rows/columns!

#### How to do it (right)?

##### Instructions

1. Select rows/columns to group

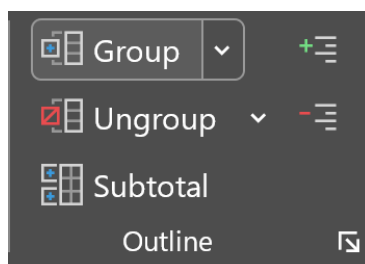
2. Go to Data -> Group -> Group

3. Group again, if you want to go into more detail

4. Press "-" to collapse the groups

##### Example

Level 1 – for top level management, Level 3 or 4 – for accountant in-depth data review



|   | 1   | 2                                  | 3 | A | B | C | D | E |
|---|-----|------------------------------------|---|---|---|---|---|---|
|   | 1   | Healthy Foods Inc. Financial Model |   |   |   |   |   |   |
|   | 2   |                                    |   |   |   |   |   |   |
|   | 3   |                                    |   |   |   |   |   |   |
|   | 4   | Period Start                       |   |   |   |   |   |   |
|   | 5   | Period End                         |   |   |   |   |   |   |
|   | 6   | Period #                           |   |   |   |   |   |   |
|   | 7   |                                    |   |   |   |   |   |   |
|   | 8   | 1 P&L Projections                  |   |   |   |   |   |   |
| + | 46  | 2 Balance Sheet Projections        |   |   |   |   |   |   |
| + | 74  | 3 Cashflow Projections             |   |   |   |   |   |   |
| + | 101 | 4 Healthy Foods Inc. Valuation     |   |   |   |   |   |   |
| + | 135 |                                    |   |   |   |   |   |   |
|   | 136 | 5 Support Schedules and Tables     |   |   |   |   |   |   |
|   | 330 |                                    |   |   |   |   |   |   |
|   | 331 |                                    |   |   |   |   |   |   |