



Excel 2019: Digging Data Analysis

Course #4166A

Business

2 Credit Hours

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EXCEL 2019: DIGGING DATA ANALYSIS

Topics covered in this course include: using the basic what-if analysis to achieve desired goals and avoid unwanted results, looking at different possible scenarios for projected worksheet data, and the versatile summary tool - the pivot table.

LEARNING ASSIGNMENTS AND OBJECTIVES

As a result of studying each assignment, you should be able to meet the objectives listed below each individual assignment.

SUBJECTS

Chapter 1: Doing What-If Analysis

Chapter 2: Playing With Pivot Tables

Study the course materials from pages 1 to 41

Complete the review questions at the end of each chapter

Answer the exam questions 1 to 10

Objectives:

- Recall how to best perform different what-if analyses
- Recognize the procedures for creating pivot tables.

NOTICE

This course and test have been adapted from supplemental materials and uses the materials entitled *Excel 2019 for Dummies* by Greg Harvey, PhD. Copyright © 2018 by John Wiley & Sons, Inc. Displayed by permission of the publisher, John Wiley & Sons, Inc., Hoboken, New Jersey. All rights reserved.

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EXAM OUTLINE

- **TEST FORMAT:** The final exam for this course consists of 10 multiple-choice questions and is based specifically on the information covered in the course materials.
- **ACCESS FINAL EXAM:** Log in to your account and click Take Exam. A copy of the final exam is provided at the end of these course materials for your convenience, however you must submit your answers online to receive credit for the course.
- **LICENSE RENEWAL INFORMATION:** This course qualifies for **2** CPE hours.
- **PROCESSING:** You will receive the score for your final exam immediately after it is submitted. A score of 70% or better is required to pass.
- **CERTIFICATE OF COMPLETION:** Will be available in your account to view online or print. If you do not pass an exam, it can be retaken free of charge.

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CHAPTER 1: DOING WHAT-IF ANALYSIS

Chapter Objective

After completing this chapter, you should be able to:

- Recall how to best perform different what-if analyses.

In This Chapter

- Performing what-if analysis with one- and two-variable data tables
- Performing what-if analysis with goal seeking
- Looking at different cases with the Scenario Manager

It would be a big mistake to regard Excel 2019 as merely a fancy calculator that shines at performing static computations, for the program really does excel (if you don't mind the pun) at performing various types of more dynamic *what-if* analysis as well. What-if analysis enables you to explore the possibilities in a worksheet by inputting a variety of promising or probable values into the same equation and letting you see the possible outcomes in black and white (or, at least, in the cells of the spreadsheet).

In Excel 2019, what-if analysis comes in a wide variety of flavors (some of which are more involved than others). In this chapter, I introduce you to these three simple and straightforward methods:

- **Data tables** enable you to see how changing one or two variables affects the bottom line (for example, you may want to know what happens to the net profit if you fall into a 25 percent tax bracket, a 35 percent tax bracket, and so on).
- **Goal seeking** enables you to find out what it takes to reach a predetermined objective, such as how much you have to sell to make a \$15 million profit this year.
- **Scenarios** let you set up and test a wide variety of cases, all the way from the best-case scenario (profits grow by 8.5 percent) to the worst-case scenario (you don't make any profit and actually lose money).

PLAYING WHAT-IF WITH DATA TABLES

Data tables enable you to enter a series of possible values that Excel then plugs into a single formula. Excel supports two types of data tables: a one-variable data table that substitutes a series of possible values for a single input value in a formula and a two-variable data table that substitutes series of possible values for two input values in a single formula.

Both types of data tables use the very same Data Table dialog box that you open by selecting Data → What-If Analysis → Data Table on the Ribbon or pressing Alt+AWT. The Data Table dialog box contains two text boxes: Row Input Cell and Column Input Cell.

When creating a one-variable data table, you designate one cell in the worksheet that serves either as the Row Input Cell (if you've entered the series of possible values across columns of a single row) or as the Column Input Cell (if you've entered the series of possible values down the rows of a single column).

When creating a two-variable data table, you designate two cells in the worksheet and, therefore, use both text boxes. One cell serves as the Row Input Cell that substitutes the series of possible values you've entered across columns of a single row, and the other cell serves as the Column Input Cell that substitutes the series of possible values you've entered down the rows of a single column.

Creating a one-variable data table

Figure 8-1 shows a 2020 sales projections spreadsheet for which a one-variable data table is to be created. In this worksheet, the projected sales amount in cell B5 is calculated by adding last year's sales total in cell B2 to the amount that I expect it to grow in 2020 (calculated by multiplying last year's total in cell B2 by the growth percentage in cell B3), giving me the formula

$$=B2+(B2*B3)$$

Because I clicked the Create From Selection command button on the Ribbon's Formulas tab after making A2:B5 the selection and accepted the Left Column check box default, the formula uses the row headings in column A and reads:

$$=\text{Sales_2019}+(\text{Sales_2019}*\text{Growth_2020})$$

FIGURE 8-1

Sales projection spreadsheet with a column of possible growth percentages to plug into a one-variable data table.

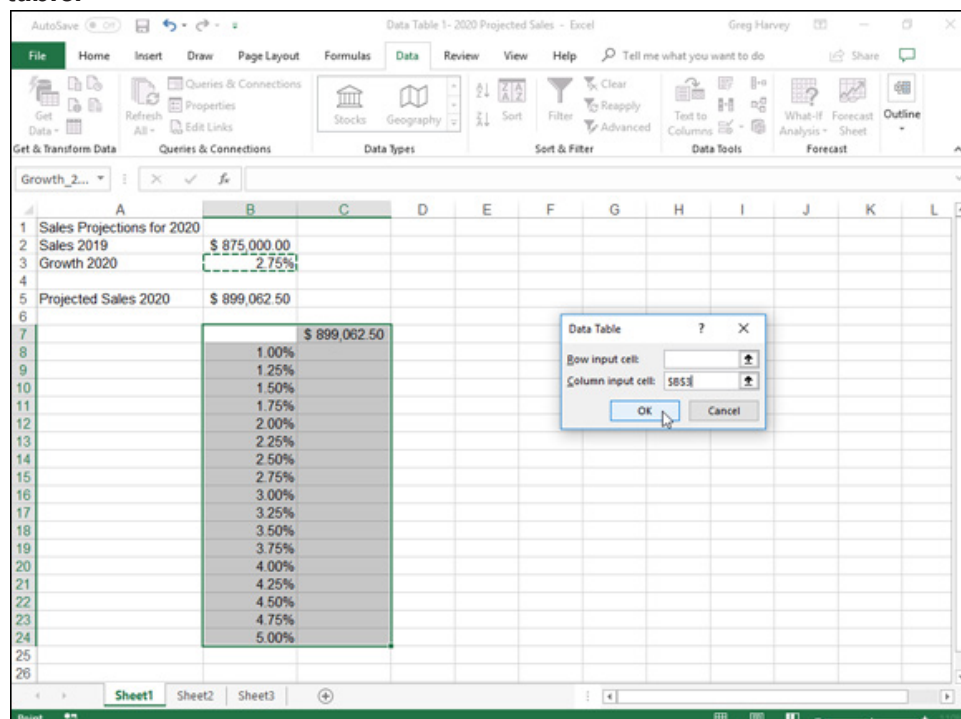
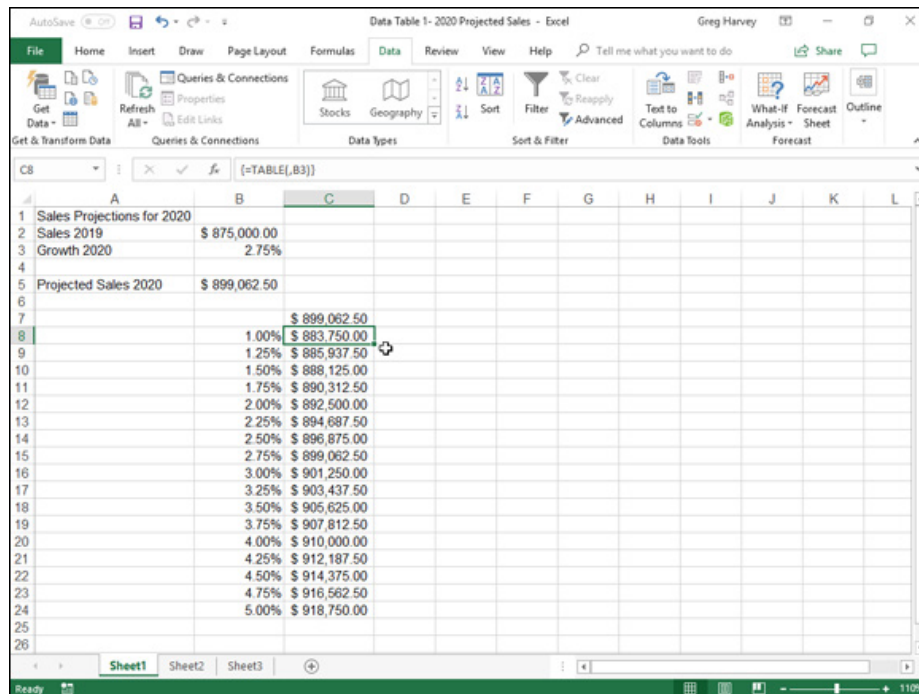


FIGURE 8-2

Sales projection spreadsheet after creating the one-variable data table in the range C8:C24.



As you can see in Figure 8-2, I entered a column of possible growth rates ranging from 1% all the way to 5.0% down column B in the range B8:B24. To create the one-variable data table shown in Figure 8-2 that plugs each of these values into the sales growth formula, I follow these simple steps:

1. **Copy the original formula entered in cell B5 into cell C7 by typing = (equal to) and then clicking cell B5 to create the formula =Projected_Sales_2020.**

The copy of the original formula (to substitute the series of different growth rates in B8:B24 into) is now the column heading for the one-variable data table.

2. **Select the cell range B7:C24.**

The range of the data table includes the formula along with the various growth rates.

3. **Click Data → What-If Analysis → Data Table on the Ribbon.**

Excel opens the Data Table dialog box.

4. **Click the Column Input Cell text box in the Data Table dialog box and then click cell B3, the Growth_2020 cell with the original percentage, in the worksheet.**

Excel inserts the absolute cell address, \$B\$3, into the Column Input Cell text box.