User Guide

This book is essentially a manual for how to actively work with and manipulate the material in Excel. This section explains how to properly configure Excel, provides instructions for downloading all of the materials and software, offers a few tips before you begin, and describes the organization of the files.

Minimum Requirements

This book presumes that you have access to and a working knowledge of Excel. In other words, you can open workbooks, write formulas that add cells together, create charts, and save files. As you will see, however, Excel is much more than a simple adding machine. It can be used to solve optimization problems and perform comparative statics analysis.

There are many versions of Excel. You will need Excel 1997 or better. In Excel 2007, be sure to save the workbooks in the special "excel macro-enabled workbook" format, which carries the .xlsxm extension. If you save the workbook as an Excel workbook with the .xlsx extension, the macros will not be saved and functionality will be lost.

These materials were created and are optimized for use with Windows Excel, but they can be accessed with a Macintosh computer. Computation is slower and there can be display issues with Mac Excel. Modern Macs can run Windows programs with software such as Parallels or Boot Camp. Instructions for Mac use are not provided, but the translation is usually straightforward.

To make sure that Excel is able to run the Visual Basic macros in the workbooks and add-ins, security must be properly set. Please carefully follow the instructions below before attempting to open the Excel files or add-ins that accompany this book.

Properly Configuring Excel

The procedure is different in Excel 2007 than in earlier versions of Excel. Instructions for Excel 2007 and earlier versions are provided in this document.

Excel 2007

Step Click the Office button  at the top left corner of the screen, then click the Excel Options button 

at the bottom of the dialog box.

Step In the Excel Options window, select the Trust Center heading, then click the "Trust Center Settings…" button as shown in Figure 1.

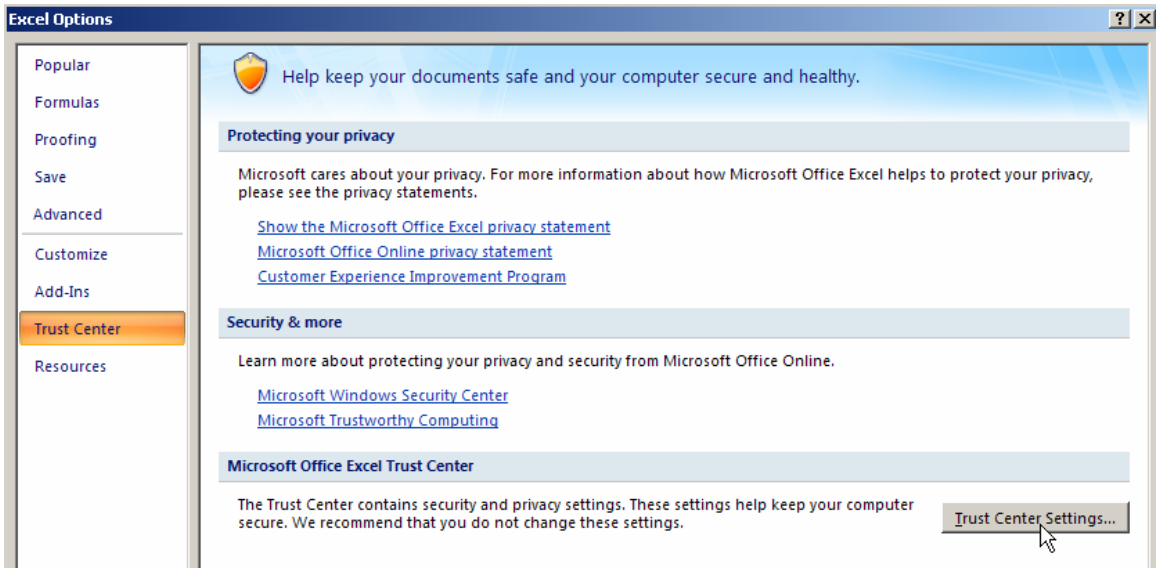

Figure 1: Excel Options.

Step In the Trust Center, select the Macro Settings heading, choose the "Disable all macros with notification" option (this is often the default) and check the "Trust access to the VBA project object model" as shown in Figure 2.

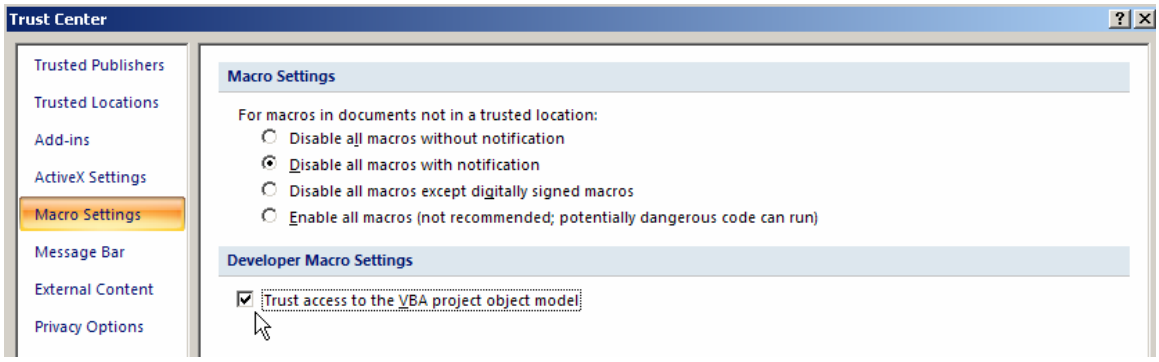

Figure 2: Trust Center

Trusting access to the VBA project object model enables the add-ins to function properly and is a critical setting. Many problems with Excel add-ins are rooted in the failure to trust access. Please confirm that this crucial setting is correct before continuing.

Step Finish configuring Excel by clicking OK at the Trust Center and Excel Options dialog boxes.

Opening a workbook

Figure 3 shows that, when opening a workbook with macros, Excel 2007 will alert you to their presence with a security warning under the ribbon (and right above the formula bar).

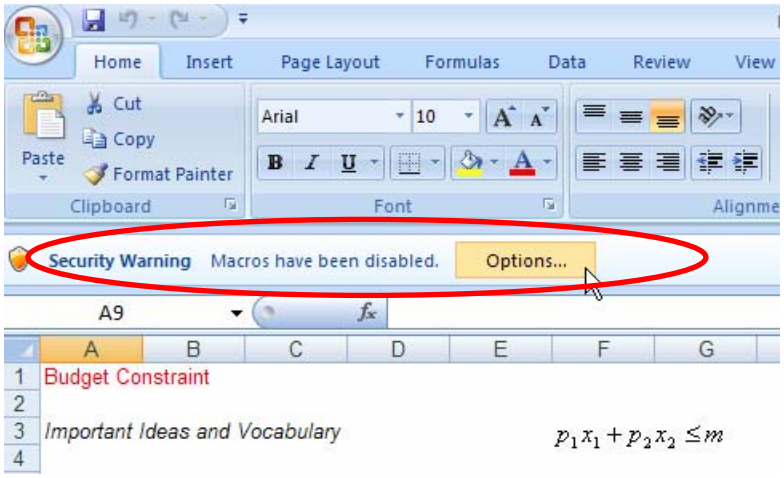

Figure 3: Opening a workbook with macros.

Click the Options button, then click *Enable this content* to allow the buttons and other controls in the workbook to function properly.

For workbooks not included with this book, do *not* enable macro functionality unless you are completely confident that the workbook is safe.

You may also receive the warning displayed in Figure 4 when opening a workbook with macros.

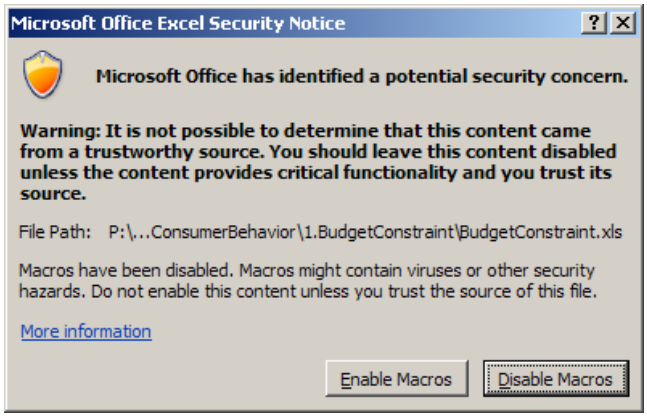

Figure 4: Macros Warning.

Click the *Enable Macros* button to have access to the features in the workbook, but do not enable macros if you are unsure of the source.

Step

From Excel, execute Tools: Macro: Security as shown in Figure 5.

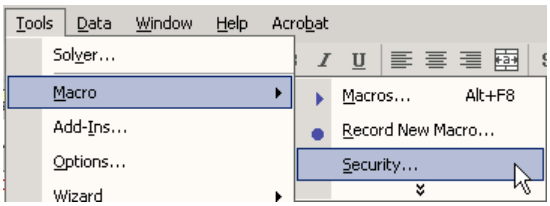

Figure 5: Accessing the Security dialog box.

Step

At the Security Level tab, make sure that High is NOT selected. Medium will always give you a warning that the file you are about to open has macros, and then you can decide whether or not to run the macros (or open the file). Low is (quite reasonably) not recommended since Excel will automatically run all macros with no warning or prompt. Choose the Medium security level as shown in Figure 6.

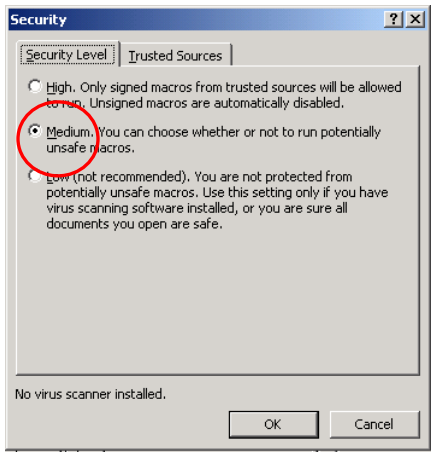

Figure 6: Setting security level for opening workbooks.

Step

Click the *Trusted Sources* tab and make sure both boxes are checked so that installed add-ins have access to your Visual Basic Projects (that is, your workbooks). See Figure 7.

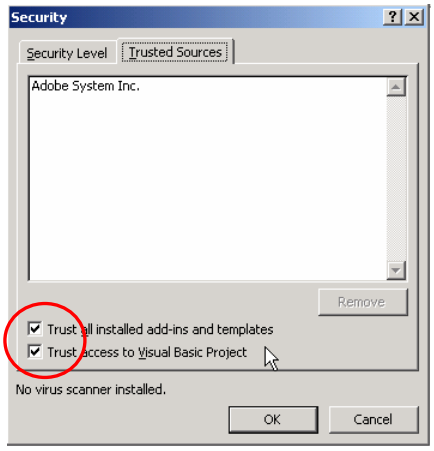

Figure 7: Setting security for add-ins.

With Excel's security correctly configured, you are ready to open macro-enabled Excel workbooks and use the add-ins.

Step When opening an *Intermediate Microeconomics with Microsoft Excel* workbook, always click the *Enable Macros* option, as shown in Figure 8.

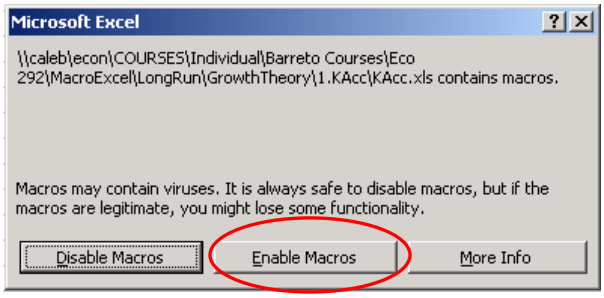

Figure 8: Click *Enable Macros* when opening a trusted workbook.

Aside: Using Excel with a Macintosh

Mac users also need to set security. Both steps, trusting access to Visual Basic projects and enabling macros to run, are required. Excel's Help explains how to do this.

Mac users know that there can be problems working with Windows files and Microsoft Excel does have some cross-platform compatibility issues. Fortunately, when opening the Windows-created workbooks that accompany this book, the content remains true. The display in Mac Excel, however, may not be optimal. Mac users may notice imperfections (such as cutting off text in buttons). You can adjust the Zoom in Mac Excel to improve the display.

In addition, Solver in Mac Excel can be a bit temperamental. Make sure you run Excel's Solver before attempting to open a workbook that uses Solver. If you have trouble opening a workbook (e.g., you get an error message that says, "Can't find project or library."), always try the following simple fix: quit Excel, open Excel, execute Tools: Solver and click Close, then open the workbook.

Another approach to utilizing these files on a Mac relies on software such as Parallels or Boot Camp to run Windows on the Macintosh computer. This will improve speed, display and Solver performance.

Accessing and Using the Excel files: <www.depauw.edu/learn/microexcel>

With Excel properly configured, you are ready to download the files that accompany this book. You may download all of the files (about 5MB in a compressed, zip archive that expands to 15 MB) to your hard drive, but do not distribute these files without permission.

Launch your favorite browser and go to <www.depauw.edu/learn/microexcel>.

Select Excel Workbooks from the menu (on the top, right corner of the page).

Step

Right-click the MicroExcel.zip link and save the file on your desktop (or other location on your hard drive or network server).

Step

Double-click the saved MicroExcel.zip archive and extract the files. The files will be organized in a single folder called *MicroExcel*.

Having extracted the files, the MicroExcel.zip archive is no longer needed and may be deleted. You are free to move the *MicroExcel* folder to another location.

With Excel security properly configured and the files downloaded, you are almost ready to begin. Take a few minutes to review the remainder of this user guide, which includes troubleshooting, tips (including how to draw in Word), and the organization of files.

Troubleshooting

At some point, something will go wrong while you are working with an Excel file. Your computer may freeze or you will not be able to perform a particular task. The first step to overcoming difficulties is to simply start over. Often closing a workbook and reopening it is sufficient, but you may have to quit Excel or restart your computer.

You should revisit the instructions and read carefully to make sure you are following each step closely. For example, in newer versions of Excel, you need to run Solver before accessing macros that use Solver. The instructions point this out, but it is easy to overlook this step.

You may get an error message like that shown in Figure 9. If you click the End button, the message will disappear and you will return to where you were working in Excel. Clicking the Debug button takes you to Visual Basic and highlights the offending line of code, as displayed in Figure 10.

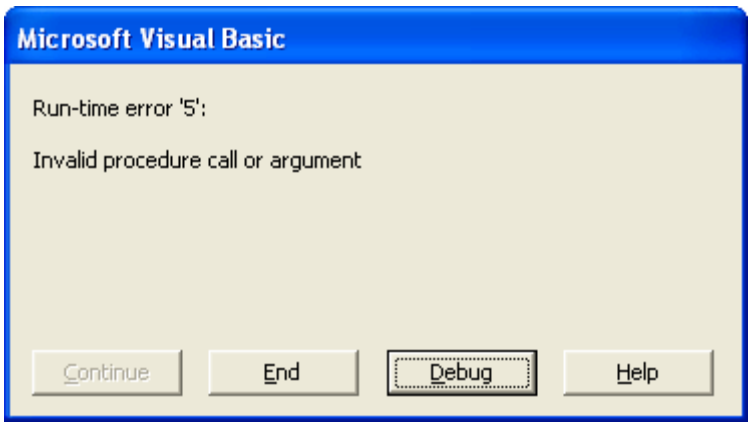

Figure 9. Example error message.

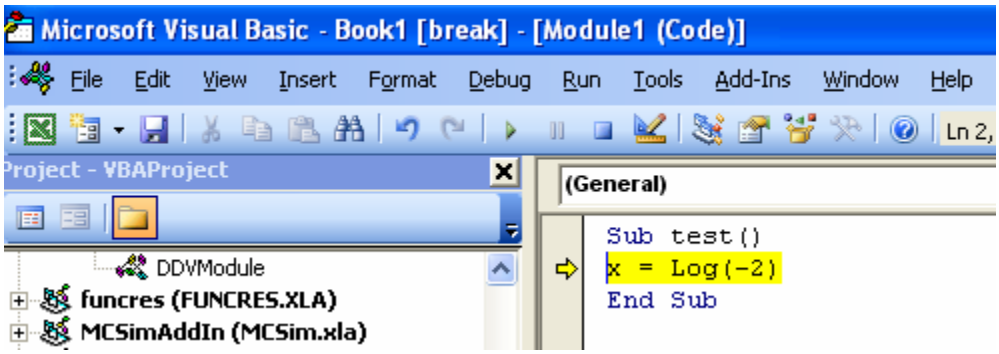

Figure 10. Debugging in Visual Basic.

In some cases, you may be able to figure out how to fix the error. In Figure 10, an attempt to take the log of a negative number has triggered an error in the subroutine named test.

You are not expected to be proficient in the Visual Basic programming language, but you may be able to quickly diagnose and correct problems. An updated set of the latest versions of these workbooks and add-ins will be maintained at

<www.depauw.edu/learn/microexcel>. If you have persistent problems with a workbook or add-in, please check the web site for an updated, corrected version. You will also find contact information for technical support on the web site.

Common Problems

If buttons or other controls do not work, check to make sure that you have enabled macros (as shown in Figure 3 for Excel 2007). If the Comparative Statics Wizard add-in does not work, check to make sure that you have trusted access to Visual Basic projects (as shown in Figure 2 for Excel 2007).

Visit the web site at <www.depauw.edu/learn/microexcel> to see a list of other problems and solutions.

Tips and Conventions

In this book, a *figure* refers to a variety of graphics, including charts and pictures of portions of a sheet (also known as a screenshot). A chart or range of cells is often displayed in this printed book as a figure, but you should look at the live version on your computer screen. Thus, in addition to a caption, many figures have a source line indicating their location in the Excel workbook.

Excel's naming convention for workbooks and sheets, [workbookname]sheetname, is followed. If the caption of a figure says, "[FoodStamp.xls]BudgetConstraint," then you know the figure can be found in the FoodStamp.xls workbook in the *BudgetConstraint* sheet. Sheet names in the printed text are italicized to help you locate the proper sheet in a workbook.

Cells are referenced as [workbookname]sheetname!celladdress. So, for example, [RiskReturn.xls]OptimalChoice!B6 refers to cell B6 in the *OptimalChoice* sheet of the RiskReturn.xls workbook.

You may need to adjust your display or the objects in Excel. Use the Zoom button to magnify the display. You can also right-click objects such as buttons (

) or scroll bars () to select and move them. Once you open a workbook, you can save it to another location or name (by executing File: Save As…) and make whatever changes you wish. This is the same as underlining or writing in a conventional, printed book.

Drawing in Word

Q&A and Exercise questions often ask you to draw diagrams in Word. Here are a few tips and tricks to make this easier.

Word 2007 has a completely new drawing interface. Click Insert on the ribbon, then Shapes (in the Illustrations group) to access line and arc tools. The Text Box tool is in the Text group. After placing a text box on your graph (for labels or explanation), double click its outline and use the Shape Fill and Shape Outline options on the ribbon to make the object transparent and remove the box.

In earlier versions of Word, the first step is to access the Drawing Toolbar by executing View: Toolbars: Drawing. You should also execute Tools: Options: General and uncheck the "Automatically create a drawing canvas" option. Text box fill and outline can be removed by double-clicking the text box outline, then selecting the Colors and Lines tab and choosing no fill under Fills and no line under Colors. You should also remove the grid snap.

Organization of Files

Figure 11 shows the contents of all of the materials included with *Intermediate Microeconomics with Microsoft Excel*. These files may be downloaded from <www.depauw.edu/learn/microexcel> (as explained earlier in this user guide).

The Answers folder contains answers to questions posed in Q&A sheets in each Excel workbook. Think of the Q&A material in the Excel workbooks as self-study questions.

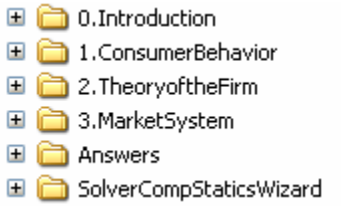

Figure 11. Organization of the supplementary materials.

There are also questions at the end of each chapter called Exercises. Readers do not have easy access to the answers to the exercise questions. To see these answers, you must be an instructor and register online at <www.depauw.edu/learn/microexcel>.

The SolverCompStaticsWizard folder contains files that use the Comparative Statics Wizard Excel add-in. When used in conjunction with Excel's own Solver add-in, these files enable numerical comparative statics analysis of optimization problems and equilibrium models.

Active Learning

There are many books devoted to microeconomics. This one is different because it is not meant to be simply read. A great deal of the value of this book lies in the Excel workbooks and additional materials. By reading the book and following instructions carefully, you will become a sophisticated user of Excel and learn a great deal of mathematics and, most importantly, economics.

Having properly configured Excel (especially trusting access to Visual Basic projects and enabling macros when opening a workbook) and downloaded the files from <www.depauw.edu/learn/microexcel>, you are ready to begin. Enjoy!