

Tutorial 3 - Performing a Change-Point Analysis in Excel

Introduction

This tutorial teaches you how to perform a change-point analysis while using Microsoft Excel. The Change-Point Analyzer Add-In allows you to quickly perform a change-point analysis using data directly from an Excel spreadsheet. Data from others programs can always be copied and pasted into Change-Point Analyzer. However, the Excel Add-In automates this process, saving time.

You must first install the Change-Point Analyzer Add-In. This Add-In was copied to your hard drive when you installed Change-Point Analyzer. Once installed, performing a change-point analysis is a simple as selecting the data you want to analyze and then selecting a newly created Change-Point Analysis menu item.

Installing the Excel Add-In

To install the Add-In, start Excel. Then display the Excel Add-Ins dialog box. In Excel 2000, select the Add-Ins menu item from the Tools menu. In Excel 2007 select the Excel Options menu from the Start menu as shown below in Figure 1.

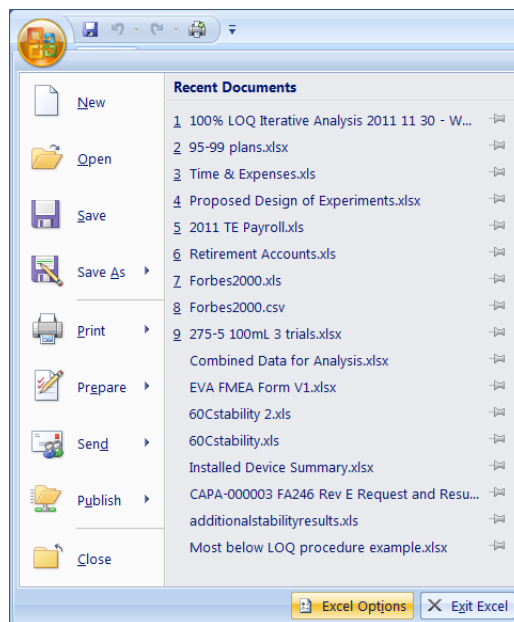


Figure 1: Start Menu in 2007 Version

Then click the Go button on the Add-Ins tab as shown in Figure 2.

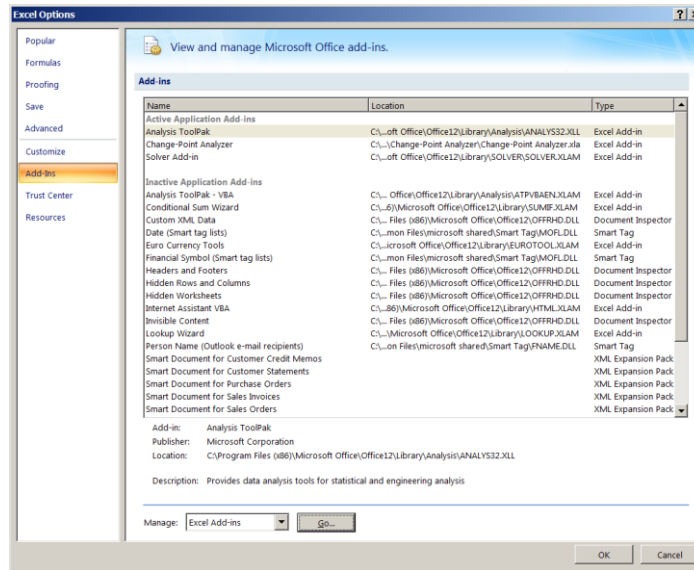


Figure 2: EXCEL Options Dialog Box in 2007 Version

This displays the Add-Ins dialog box as shown in Figure 3

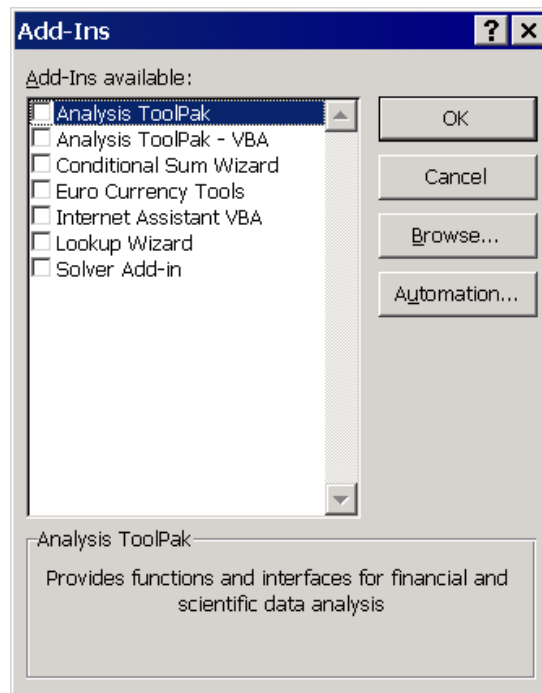


Figure 3: Add-Ins Dialog Box

Next, click the Browse button to display the Browse dialog box. Use this dialog box to locate the file **Change-Point Analyzer.xla**. If you installed Change-Point Analyzer in the default directory, this file should be in:

C:\Program Files (x86)\Taylor Enterprises\Change-Point Analyzer

as shown in Figure 4.

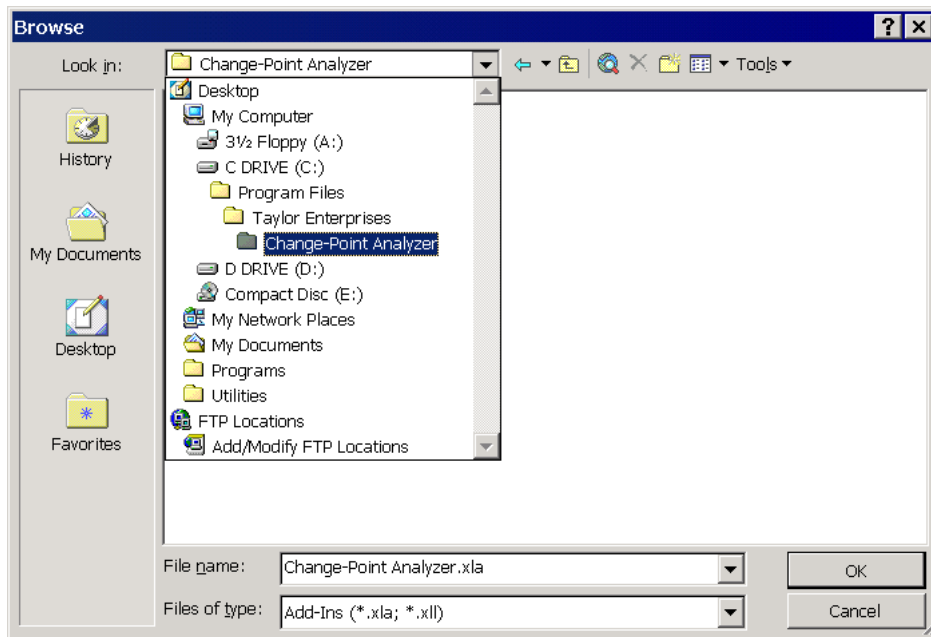


Figure 4: Browse Dialog Box for Specifying Add-In

Once you have located this file, double click on it. You will return to the Add-Ins dialog box. Change-Point Analyzer will now appear in the list with a check next to it as shown in Figure 5. Click the OK button to close the Add-Ins dialog box. The installation process is now complete.

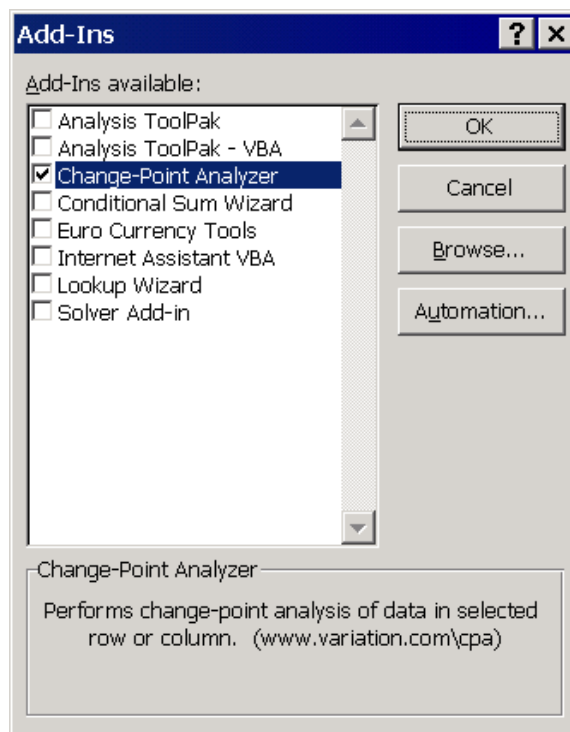


Figure 5: Add-In Dialog Box after Adding Change-Point Analyzer

Installing the Add-In adds two new menu items. In Excel 2000, installing the Add-In adds the new menu items to the Tools menu as shown in Figure 6.

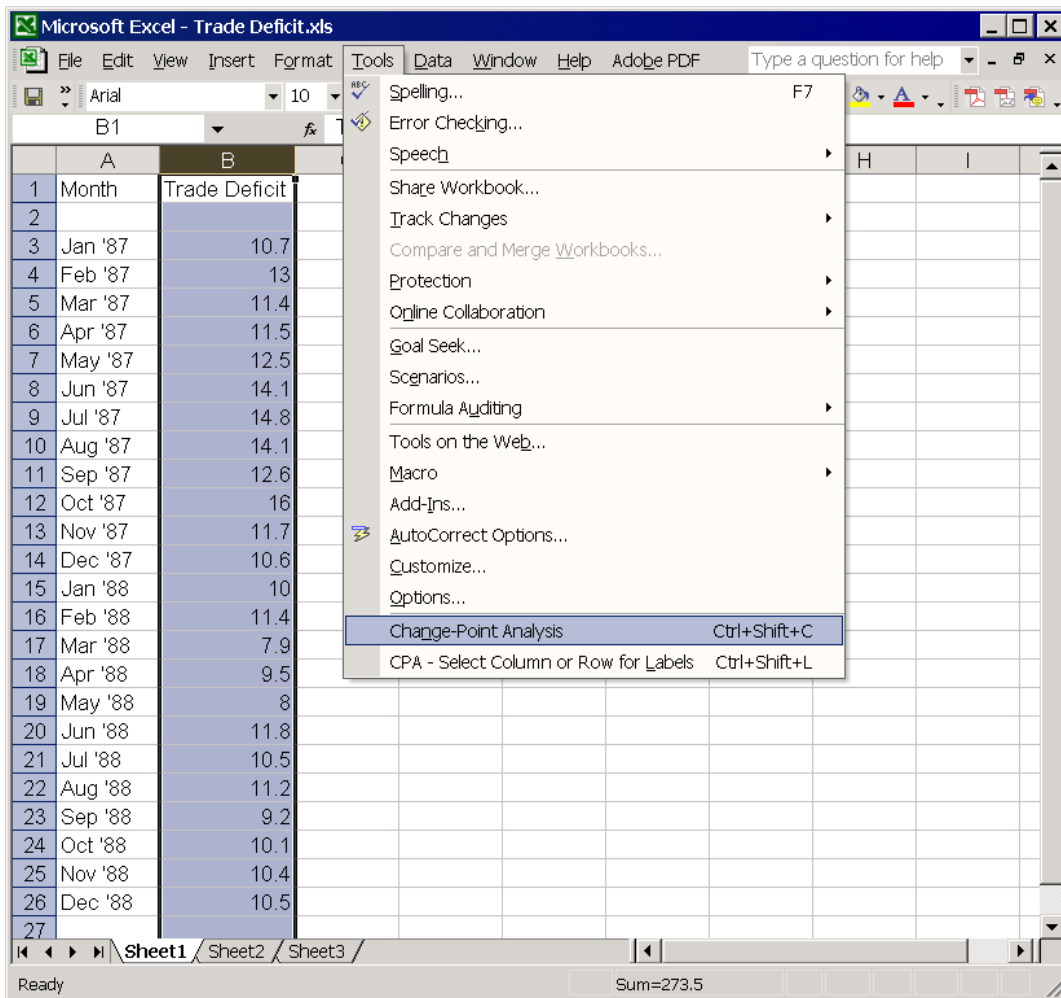


Figure 6: Excel 2000 Tools Menu

In Excel 2007, installing the Add-In adds two new menu items to a newly create Add-Ins menu as shown in Figure 7.

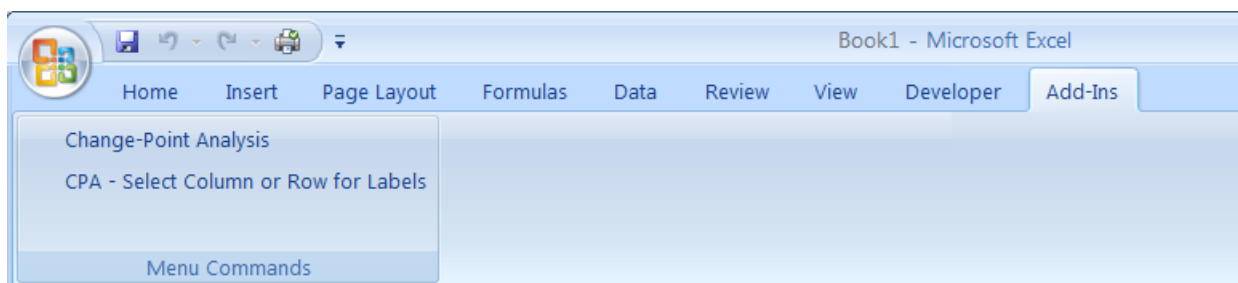


Figure 7: Excel 2007 Add-Ins Menu

The *Change-Point Analysis* menu item performs a change-point analysis on the selected data. The *CPA - Select Column or Row for Labels* menu item results in the selected column or row being used as labels. Labels must be selected before performing the analysis. These two menu items will appear every time you start Excel

Analyzing the Data

Before you can perform an analysis, you need some data. You might already have some data you would like to analyze. If not, you can type in the trade deficit data shown in Figure 6.

Once the data is entered, select the column you want to use as labels and select the *CPA - Select Column or Row for Labels* menu item. Next select data you wish to analyze. You can either select a range of cells or select an entire column as in Figure 6. If you have multiple observations per time period, select all the columns containing data. Then select the newly added *Change-Point Analysis* menu item. This starts a copy of Change-Point Analyzer executing, transfers the data to it, performs the analysis and then displays the results.

Figure 8 shows the results for the trade deficit data. When done, return to Excel by clicking on the X button in the upper-right corner. You will be prompted whether to save the results. Choose yes and enter a file name, if you want the results saved. The results are saved in a separate Change-Point Analyzer file and not as part of the Excel file.

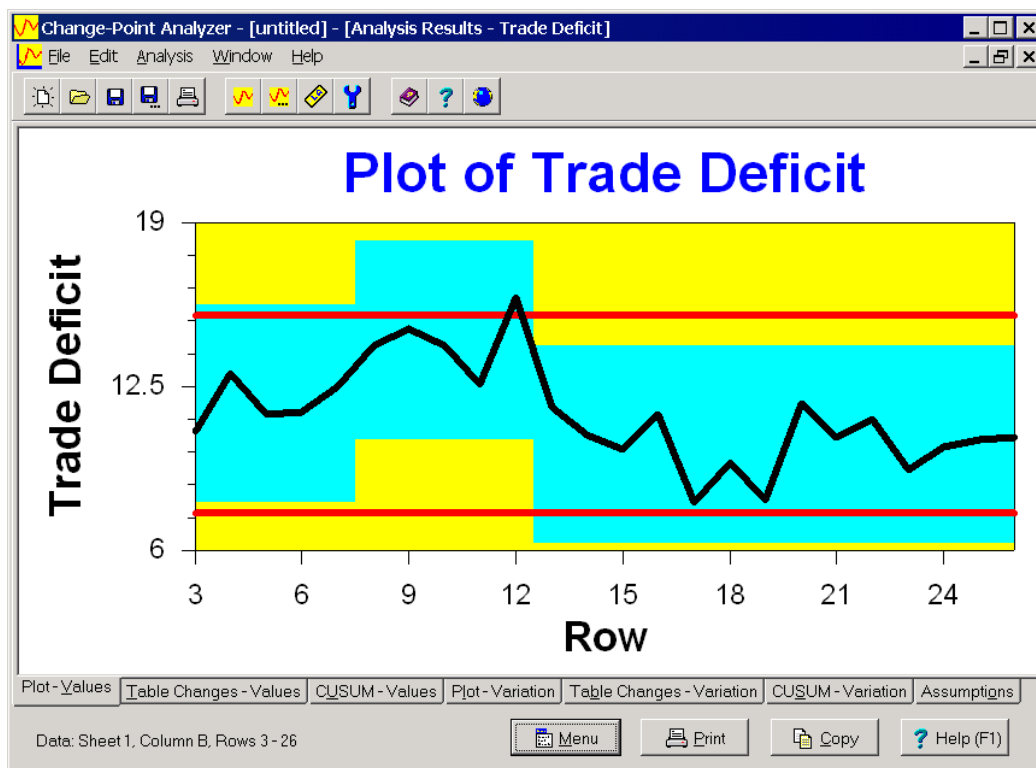



Figure 8: Analysis Results

In Figure 8, the data is hidden behind the Analysis Results window. Clicking the lower of the two  buttons in the upper-right corner will reduce the size of the Analysis Results window and give you access to the Data window. This allows you to perform additional analysis including a custom analysis before returning to Excel.

You do not have to close Change-Point Analyzer to return to Excel. The copy of Change-Point Analyzer is a separate program. Using the Alt-Tab key combination or clicking the Excel button on the Task bar will return you to Excel.