

Adding Shading for NBER Recession Dates for Graphs.

The Excel hints for adding shading for NBER recession dates to graphs are for earlier versions of Excel than many students have. The main idea of how to do it, remains the same. However, the details differ. Head TA Adam Bergeron has documented how to do it for Excel 2013 and I have documented it for Excel 2010. Both sets of instructions are noted below. Instructions are for PC platforms; instructions for the Mac should be similar, but may not be identical.

Instructions for adding NBER shading to a Chart on Excel 2013

- 1. Create a column of a binary recession variable. That is, a column that has the value "1" if the economy is in a recession and "0" (or just leave it blank) otherwise.
- 2. Highlight all of the data that you are interested in graphing, including the binary recession variable data (and of course the x-axis data).
- 3. Click on INSERT. In the Charts part of the menu click on "Recommended Charts" or the little box in the bottom right part of the Charts section.
- 4. A pop-up menu should appear. Click on "All Charts" at the top.
- 5. On bottom left, click on "Combo".
- 6. Now, for each series you highlighted earlier, you can choose the way in which that data will be represented. For all of the series except for the Recession Variable, choose whatever representation is necessary (often this will be a line graph of some type). However, for the Recession Variable, choose "Area".
- 7. Next to all of the series, there is an option called "Secondary Axis". Check this for our Recession Variable.
- 8. Once the graph appears, double-click on the secondary axis so the axis menu appears. Under "Axis Options", set the maximum to 1 and the minimum to zero.
- 9. Click "Text Options", then click "Text Fill", and then "No Fill" on the sub menu.
- 10. You typically should avoid using legends. However if you do insist on having a legend be aware that the Recession Variable will have a legend entry. Be sure to delete it.
- 11. Sometimes the drop lines are too dark and may obliterate the main data series lines. If that is the case, double click on the drop lines to open the Format Drop Lines Box click on the Line Color Tab and set the color to a shade of gray *and* adjust the transparency so that both the shading is clear and the main data series shows through.

Instructions for adding NBER shading to a Chart on Excel 2010

The process of adding shading for NBER recessions to an Excel chart, looks somewhat complicated, but once you've done it once, it is really fairly easy. The key ideas is that all the actual data is plotted against the left axis, the NBER dates are plotted against the right axis; drop lines are added to provide the shading; and the series line and axis are edited to remove information that clutters the chart. Here are the precise steps:

- 1. Highlight data, including the NBER recession series (mostly blanks with sections of 1's).
- 2. Insert Line chart.
- 3. Right click on the NBER data (it will be lying very near the horizontal axis and be a series of disconnected line segments) and choose Format Data Series.
- 4. On the Format Data Series menu under Series Options check box for Secondary Axis (this will plot the NBER data against the right-hand axis). Close box.
- 5. Double click on the the right-hand axis to open Format Axis Box. Set axis to Fixed Range minimum = 0; maximum =1. Check boxes for No Tick Marks and No Labels. Close box.
- 6. Left click on NBER series (now visible higher up in the chart). Click on the Layout tab of the Chart Tool Bar at the top of the page. In the Analysis section, choose the Drop Lines Option under the Lines tab (these drop lines provide the shading).
- 7. Double click on the NBER series (make sure you get the series and not the drop lines) to open the Format Data Series menu. Click on Line Color and check the box for No Line (this makes the NBER series invisible, but leaves the drop lines (and, therefore, the shading intact).
- 8. Sometimes the drop lines are too dark and may obliterate the main data series lines. If that is the case, double click on the drop lines to open the Format Drop Lines Box click on the Line Color Tab and set the color to a shade of gray *and* adjust the transparency so that both the shading is clear and the main data series shows through.