

## ECN 207, second data exercise: prices and inflation

[You may wish to refer to the first data exercise document, <http://users.wfu.edu/cottrell/ecn207/data-ex1.pdf>, for details on how to do some of the following things.]

Please write up a short document including the graphs that are called for and your answers to the questions posed.

In gretl, open the fedstl database and import the series `cpiaucsl` and `cpilfesl`.

### Exercise 1 : year-on-year inflation vs. monthly

Define two new series as follows:

- Select `cpiaucsl` in the gretl main window. Pull down the **Add** menu and select “Percentage change of selected variable.” Name the new variable `inflation1` and select the option “Year on year.”
- Repeat the above, but this time call the new variable `inflation2` and use the option “Monthly, annualized”.

Let’s compare their volatility of these two series over the period from 2006:1 to the end of the data.

- Use `/Sample/Set range` to start the sample in 2006:1.
- Create a time-series plot of `inflation1` and `inflation2` together. What do you notice about the relationship between them?
- Call up the summary statistics on these two series. Record their means and standard deviations. Do the means differ substantially? Do the standard deviations differ substantially? Can you explain what’s going on?

☞ To get summary statistics for a series, use the right-click pop-up menu in the main window, or look under the **View** menu.

### Exercise 2: a different price index

The series `cpilfesl` is a variant of the CPI which excludes food and energy. Select this in the main window and add the annualized monthly percentage change as described above; call this new series `inflation3`.

Rerun the same sort of comparison as in Exercise 1, but this time between `inflation2` and `inflation3` (that is, a joint plot plus a comparison of means and standard deviations).

If you were consulting an annualized monthly figure to gauge the current trend in inflation from month to month, would you be better off using `cpiaucsl` or `cpilfesl`? Explain.

### Exercise 3: is “core” inflation a cheat?

Use of a “core” inflation measure (that is, one based on an index such as `cpilfesl` which omits certain items) is sometimes criticized on the grounds that this is “measuring inflation without the inflation”—cheating, in other words. To see if this may be a valid objection, let’s define two more series, as follows.

- Select `cpiaucsl`. Right-click and select “Add index values,” and give the new series the name `cpil`.
- Repeat, but using `cpilfesl` and giving the name `cpil2`.

This gives us two price indices that both have value 100 in January 2006. Plot the two together. Do they tell substantially different stories about what happened to the cost of living between 2006 and the present?