Inequality — Inequality, poverty, and other distributional summaries

Description

There are different approaches for measuring inequality and poverty, and different methods for summarizing the distribution of earnings, income, and wealth. Stata has some official features for these types of analyses. For example, the `roctab` command has an option to report Gini and Pietra indices, which are measures of income inequality; see [R] **roctab**. With the `cumul` command, you can obtain the cumulative distribution function of, for example, household expenditures; see [R] **cumul**. Additionally, you may want to look at the shape of income distributions; see [R] **kdensity** and [R] **histogram**.

However, you might also be interested in the generalized Lorenz curve or a welfare index, which cannot be obtained from any official Stata commands. Fortunately, Stata users have developed an excellent suite of commands that create these graphs and report these types of indices, along with many other related measures. In this entry, we demonstrate how to find and install community-contributed commands related to inequality, poverty, and distributional summaries of earnings, income, and wealth.

Remarks and examples

Suppose you are in search of a command to report inequality indices; you could type the following:

```
. search inequality
```

First, you will see official resources related to this keyword, including frequently asked questions (FAQs) and *Stata Journal* articles. Then, you will see community-contributed additions to Stata that are available from the internet, which typically include additions published in the *Stata Journal* and those posted on the Statistical Software Components (SSC) Archive, provided by http://repec.org. For example, in the output from `search`, we find `ineqdec0`, which calculates inequality indices with decomposition by subgroup.

```
Search of web resources from Stata and other users

  (output omitted)

ineqdec0 from http://fmwww.bc.edu/RePEc/bocode/i
    'INEQDEC0': module to calculate inequality indices with decomposition by
    subgroup / ineqdec0 is a stripped-down version of ineqdeco (q.v.). /
    Unlike the latter, it will provide estimates using samples /containing
    zero or negative values for the variable of / interest. But as a result

ineqdecgini from http://fmwww.bc.edu/RePEc/bocode/i
    'INEQDECGINI': module to estimate Gini coefficient with optional
    decomposition by subgroups / ineqdecgini estimates the Gini coefficient
    (a.k.a. Gini index) / of inequality plus, optionally, a decomposition by
    population / subgroup into components representing inequality within /

  (output omitted)

(end of search)
```

Let's take a closer look at this package:

1. Click on *ineqdec0 from http://fmwww.bc.edu/RePEc/bocode/i.*
2. Click on *ineqdec0.hlp.*

This leads us to the help file, where we could learn more about which indices are computed with this package. This particular command supports `fweights` and `aweights`, but not all community-contributed commands do; it is important to look at the help file and confirm whether the command is a good fit for the analysis you want to perform. If it is, you can install it:

3. Click on the back button.
4. Click on *click here to install.*

Once you see a message indicating that the installation is complete, you may now use this command.

Another thing to keep in mind when installing packages is whether they are designed to work with complex survey data. This particular command is not. We can click on the back button once to return to the description of `ineqdec0` and then once more to return to the search results. Scrolling up, we come across

```
Search of official help files, FAQs, Examples, and Stata Journals
  (output omitted)
SJ-16-2 st0427_1  . . . . . . . . . . . . . . . . Software update for conindex
        . . . . . . . . . . O. O'Donnell, S. O'Neill, T. Van Ourti, and B. Walsh
(help conindex if installed)
Q2/16   SJ 16(2):521--522
program can now be used on data from complex survey designs
  (output omitted)
(end of search)
```

This is an update for a package called `conindex`; this updated version of the command can be used with data from complex survey designs. The original version of the package was introduced in *Stata Journal* Volume 16 Number 1 (March 2016), and this update was published the following quarter. If we scroll up a bit more in the search results, we will find an even more recent update:

```
Search of official help files, FAQs, Examples, and Stata Journals
  (output omitted)
SJ-18-3 st0427_2  . . . . . . . . . . . . . . . . Software update for conindex
        . . . . . . . . . . O. O'Donnell, S. O'Neill, T. Van Ourti, and B. Walsh
        (help conindex if installed)
        Q3/18   SJ 18(3):758--759
        uses the community-contributed lorenz command and fix a small bug
        in the graph option
  (output omitted)
(end of search)
```

It is best to install the most recent version, which we can do as follows:

1. Click on `st0427_2`.
2. Click on *click here to install.*

The examples above demonstrate how to install community-contributed commands related to measures of inequality, but you would follow the same steps to find and install commands related to poverty measures, indices of social welfare, and the like.

For example, type the following:

```
. search poverty
```

In the list of results, you will find `glcurve`, which can be used to draw Lorenz curves, concentration curves, and other related curves. We can install this command as follows:

1. Click on `glcurve from http://fmwww.bc.edu/RePEc/bocode/g`.
2. Click on *click here to install*.

These are just a few examples of the many community-contributed commands that are available. You can use `search` to find more community-contributed commands used to obtain other measures of inequality and poverty, and distributional summaries of earnings, income, and wealth.

Max Otto Lorenz (1876–1959) was born in Burlington, Iowa. He did his undergraduate studies at the University of Iowa and received his PhD from the University of Wisconsin–Madison in 1906. In 1905, he published his only article, "Methods of measuring the concentration of wealth", in a scientific journal. In the article, he introduces what we now call the Lorenz curve, a term first introduced in a statistics textbook in 1912.

Lorenz worked his whole life in governmental statistical institutions. He was the Deputy Commissioner of Labor and Industrial Statistics for Wisconsin, worked for the US Bureau of the Census and the Bureau of Railway Economics, and was the Director of the Bureau of Statistics and the Bureau of Transport and Economic Statistics.

His hobbies included calendar reform and Interlingua, a proposed international language.

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