Programming Dominance Tests for Distributions in Stata and Mata*

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The class

The lecture will consist in a detailed, step-by-step survey of a user-written Stata program for testing dominance across pairs of distributions using their *quantiles* (dominance at order 1 or *Rank dominance*) or, alternatively, their Generalized Lorenz (GL) curves ordinates (dominance of order 2 or *GL dominance*).

The objectives of the class are: (i) to illustrate how work with Mata, and embed Mata functions into a Stata program denoted `Q_GL_tests`; (ii) to construct Stata output tables of results, as well as to write results on LaTeX output files; (iii) to implement well known (but not yet implemented in Stata) dominance tests.

The program `Q_GL_tests` develops on the estimators of the covariance between quantiles/GL curves ordinates of a distribution discussed in Beach and Davidson (1983). Attendants to the class are warmly suggested to get through the paper. Description of the dominance tests are in Lefranc, Pistolesi and Trannoy (2009) and Kodde and Palm (1986).

For related results, extending dominance tests in quantiles/GL ordinates to data with complex design, see Zheng (2002). These estimators can be integrated in `Q_GL_tests`. Please see the `svylorenz.ado` Stata program for an in-depth understanding on how the `svy` environment interacts with quantiles/GL intercepts computation.

Stata beginners are suggested to take a look at the enclosed tutorial (and references therein) for a first guided approach to the software.

References

Beach, C. M. and Davidson, R. (1983). Distribution-free statistical inference with Lorenz curves and income shares, *The Review of Economic Studies* **50**(4): 723–735. URL: `http://www.jstor.org/stable/2297772`

Kodde, D. A. and Palm, F. C. (1986). Wald criteria for jointly testing equality and inequality restrictions, *Econometrica* **54**(5): pp. 1243–1248. URL: `http://www.jstor.org/stable/1912331`

Lefranc, A., Pistolesi, N. and Trannoy, A. (2009). Equality of opportunity and luck: Definitions and testable conditions, with an application to income in France, *Journal of Public Economics* **93**(11-12): 1189 – 1207. URL: `http://www.sciencedirect.com/science/article/B6V76-4WXBM5D-1/2/9af4f453a4ecc98d65213adb33e37093`

Zheng, B. (2002). Testing Lorenz curves with non-simple random samples, *Econometrica* **70**(3): 1235–1243. URL: `http://dx.doi.org/10.1111/1468-0262.00325`

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