Microeconomic Analysis with R

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Since its first public release in 1993, the "R language and environment for statistical computing" (R Development Core Team, 2003) has been used more and more for statistical analyses. However, in the first years it was not much used by economists and econometricians, but this situation has been changing in recent years. One cornerstone was the article "R: Yet another econometric programming environment" by Cribari-Neto and Zarkos (1999). Three years later Racine and Hyndman (2002) published the article "Using R to teach econometrics". And Arai (2002) has a "A brief guide to R for beginners in econometrics" in the web that has been updated and improved several times within the past one and a half years.

Over the last years the number of R packages that are useful for economists also increased. One of these packages is called "systemfit" (Hamann and Henningsen, 2004) and provides functions to estimate systems of linear or non-linear equations. Many economic models consist of several equations, which should be estimated simultaneously, because the disturbance terms are likely contemporaneously correlated or the economic theory requires cross-equation restrictions. This is especially the case in microeconomic modeling.

We extended the "systemfit" package to make it suitable for microeconomic modeling (e.g. incorporating cross-equation restrictions). Subsequently, we used it for several microeconomic demand and production analyses. The demand analyses were done with the "Almost Ideal Demand System" (AIDS) (Deaton and Muellbauer, 1980) and the production analyses with the "symmetric normalized quadratic" profit function. On the useR! conference we want to demonstrate this on a poster and on a laptop computer. Furthermore a first release of a new R package will be presented that contains functions for microeconomic modeling (e.g. a function that carries out a full demand analysis with the AIDS with only a single command). Applied economists interested in microeconomic modeling will be invited to contribute to this package by providing functions for other functional forms.

References

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