Instrumental Variables Models in Stata

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Overview

Stata has a built-in command for instrumental variables regression, as well as a user-developed extension with a number of desirable features:

- Ivregress
- Ivreg2

Always use the first option to check the first-stage regression results, and ensure that the F-test is satisfied.

Always try to overidentify your model (i.e., include at least one more instrument than potentially endogenous variable) and test the exclusion restriction using Hansen/Sargan.
Ivregress and Ivreg2

These two commands produce the same output, although the input format is a little different.

Ivreg2 automatically provides additional diagnostic statistics, and is usually preferable.

Ivregress 2sls indepvar depvar1 depvar2 (endogvar1 endogvar2 = iv1 iv2 iv3...) ..., first options

Ivreg2 indepvar depvar1 depvar2 (endogvar1 endogvar2 = iv1 iv2 iv3...) ..., first options

Specifying the gmm option with either command results in more efficient estimates for overidentified models, but no difference for just-identified models.
Panel data models

} Stata has built in panel data models using instrumental variables, as well as user-built extensions:
} Xtivreg, re and fe
} Xtivreg2, re and fe

} The general format, including the use of parentheses for the instruments, is as for ivregress and ivreg2.

} Xtivreg2 contains additional diagnostic statistics, and is generally preferable. Results using the two commands are identical.