webuse hsng2

ivregress 2sls rent pcturban (hsngval = faminc i.region)

ivregress gmm rent pcturban (hsngval = faminc i.region)

use auto

gmm (mpg - {b1}\*gear\_ratio - {b2}\*turn - {b0}), ///

instruments(gear\_ratio turn trunk)

estat overid // Test of overidentifying restriction:

matrix B= e(b)'

matrix list B

matrix VC=e(V)

matrix list VC

matrix define R=(1, 1, 0)

matrix define r=(0)

matrix J=e(N)\*(R\*B-r)'\*inv(R\*VC\*R')\*(R\*B-r)

matrix list J

scalar x=invchi2(1, 0.95)

di x

\* e(Q)

\*OLS estimator and GMM are equivalent if instruments

\*and instrumented covariates are the same

regress mpg gear\_ratio turn

gmm (mpg - {b1}\*gear\_ratio - {b2}\*turn - {b0}), //

instruments(gear\_ratio turn)

\*Example: Singleton 1982

use http://www.stata-press.com/data/r13/cr, clear

tsset qtr

generate cgrowth = c/L.c

gmm (1 - {b=1}\*(1+F.r)\*(F.c/c)^(-1\*{gamma=1})), inst(L.r L2.r cgrowth L.cgrowth) wmat(hac nw 4) twostep

\*Example: Exponential regressions all covariates are exogenous

\*Example: Exponential regressions endogenous income

use http://www.stata-press.com/data/r13/docvisits, clear

gmm (docvis - exp({xb:private chronic female income}+{b0})), instruments(private chronic female age black hispanic) twostep

\*Example: System Equations

use http://www.stata-press.com/data/r13/klein, clear

gmm (eq1: consump - {b0} - {xb: wagepriv wagegovt}) (eq2: wagepriv - {c0} - {xc: consump govt capital1}), instruments(eq1: wagegovt govt capital1) instruments(eq2: wagegovt govt capital1) winitial(unadjusted, independent) wmatrix(unadjusted) twostep

import excel "C:\OLD PC\D DRIVE\works\Econometrics II 2021-1\Data\panel\_oecd1.xls", ///

sheet("Sheet1") firstrow clear

reshape long gdp\_ oil\_c\_, i(year)