```
. use replication.dta, clear

.
. * Generate some regressors:
. egen stateyear=group(state year)

. egen st=group(state)

. egen sty=group(state year)

. gen dD1=1/D1

. gen dD6=1/D6

.
. * Table 2: benchmark results
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)), absorb(state year
> ) cluster(state) first
  3. }
(MWFE estimator converged in 8 iterations)

First-stage regressions
-----------------------


First-stage regression of Llnsum4TVtotS:

Statistics robust to heteroskedasticity and clustering on state
Number of obs =                  3905
Number of clusters (state) =       45
------------------------------------------------------------------------------
             |               Robust
  Llnsum4TVtotS |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
----------------------------------+-------------------------------------------------
   c.LlnTOTsum4TVtotSinst#c.dD1 |   .0050688    .217554     0.02   0.981    -.4214618    .4315995
                                |
   c.LlnTOTsum4TVtotSinst#c.dD6 |  -1.429122   25.48739    -0.06   0.955    -51.39903    48.54079
                                |
c.LlnTOTsum4TVtotSinst#c.lnland |   .0211611   .0090322     2.34   0.019     .0034528    .0388694
                                |
 c.LlnTOTsum4TVtotSinst#c.HIDTA |   .0747432   .0154904     4.83   0.000     .0443731    .1051133
------------------------------------------------------------------------------
F test of excluded instruments:
  F(  4,    44) =    11.54
  Prob > F      =   0.0000
Sanderson-Windmeijer multivariate F test of excluded instruments:
  F(  4,    44) =    11.54
  Prob > F      =   0.0000



Summary results for first-stage regressions
-------------------------------------------

                                           (Underid)             (Weak id)
```

```
Variable     | F(  4,    44)  P-val | SW Chi-sq(  4) P-val | SW F(  4,    44)
Llnsum4TVtot |      11.54    0.0000 |       47.35   0.0000 |       11.54

NB: first-stage test statistics cluster-robust

Stock-Yogo weak ID F test critical values for single endogenous regressor:
                                 5% maximal IV relative bias    16.85
                                10% maximal IV relative bias    10.27
                                20% maximal IV relative bias     6.71
                                30% maximal IV relative bias     5.34
                                10% maximal IV size             24.58
                                15% maximal IV size             13.96
                                20% maximal IV size             10.26
                                25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for i.i.d. errors only.

Underidentification test
Ho: matrix of reduced form coefficients has rank=K1-1 (underidentified)
Ha: matrix has rank=K1 (identified)
Kleibergen-Paap rk LM statistic          Chi-sq(4)=17.26    P-val=0.0017

Weak identification test
Ho: equation is weakly identified
Cragg-Donald Wald F statistic                                    12.47
Kleibergen-Paap Wald rk F statistic                              11.54

Stock-Yogo weak ID test critical values for K1=1 and L1=4:
                                 5% maximal IV relative bias    16.85
                                10% maximal IV relative bias    10.27
                                20% maximal IV relative bias     6.71
                                30% maximal IV relative bias     5.34
                                10% maximal IV size             24.58
                                15% maximal IV size             13.96
                                20% maximal IV size             10.26
                                25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.

Weak-instrument-robust inference
Tests of joint significance of endogenous regressors B1 in main equation
Ho: B1=0 and orthogonality conditions are valid
Anderson-Rubin Wald test           F(4,44)=        2.92     P-val=0.0317
Anderson-Rubin Wald test           Chi-sq(4)=     11.97     P-val=0.0176
Stock-Wright LM S statistic        Chi-sq(4)=      8.28     P-val=0.0817

NB: Underidentification, weak identification and weak-identification-robust
    test statistics cluster-robust

Number of clusters             N_clust  =         45
Number of observations               N  =       3905
Number of regressors                 K  =          1
Number of endogenous regressors      K1 =          1
Number of instruments                L  =          4
Number of excluded instruments       L1 =          4

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =     3905
                                                      F(  1,    44) =     5.62
                                                      Prob > F      =   0.0222
```

```
Total (centered) SS     =  224.3009732                Centered R2   =  -0.0906
Total (uncentered) SS   =  224.3009732                Uncentered R2 =  -0.0906
Residual SS             =  244.6282826                Root MSE      =    .2506

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTVtotS |   .0155198   .0065458     2.37   0.022     .0023277     .028712
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             17.261
                                                      Chi-sq(4) P-val =    0.0017
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               12.474
                         (Kleibergen-Paap rk Wald F statistic):         11.541
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.053
                                                      Chi-sq(3) P-val =    0.2558
------------------------------------------------------------------------------
Instrumented:         LlnsumTVtotS
Excluded instruments: c.LlnTOTsumTVtotSinst#c.dD1 c.LlnTOTsumTVtotSinst#c.dD6
                      c.LlnTOTsumTVtotSinst#c.lnland
                      c.LlnTOTsumTVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)

First-stage regressions
-----------------------


First-stage regression of LlnsumTQtotS:

Statistics robust to heteroskedasticity and clustering on state
Number of obs =                  3905
Number of clusters (state) =       45
------------------------------------------------------------------------------
----------
                             |               Robust
                 LlnsumTQtotS |      Coef.   Std. Err.      t    P>|t|     [95% Conf.
Interval]
-----------------------------+------------------------------------------------
----------
```

```
   c.LlnTOTsum4TQtotSinst#c.dD1 |   .1154177   .1480565     0.78   0.436    -.1748579
.4056933
                                |
   c.LlnTOTsum4TQtotSinst#c.dD6 |   5.616386   13.06452     0.43   0.667    -19.99757
31.23034
                                |
c.LlnTOTsum4TQtotSinst#c.lnland |   .0094616    .004647     2.04   0.042     .0003507
.0185725
                                |
 c.LlnTOTsum4TQtotSinst#c.HIDTA |   .0498802   .0080225     6.22   0.000     .0341515
.0656088
------------------------------------------------------------------------------------------
----------
F test of excluded instruments:
  F(  4,    44) =    13.30
  Prob > F      =   0.0000
Sanderson-Windmeijer multivariate F test of excluded instruments:
  F(  4,    44) =    13.30
  Prob > F      =   0.0000



Summary results for first-stage regressions
-------------------------------------------

                                          (Underid)             (Weak id)
Variable     | F(  4,    44)  P-val | SW Chi-sq(  4) P-val | SW F(  4,    44)
Llnsum4TQtot |      13.30    0.0000 |       54.55   0.0000 |       13.30

NB: first-stage test statistics cluster-robust

Stock-Yogo weak ID F test critical values for single endogenous regressor:
                                 5% maximal IV relative bias    16.85
                                10% maximal IV relative bias    10.27
                                20% maximal IV relative bias     6.71
                                30% maximal IV relative bias     5.34
                                10% maximal IV size             24.58
                                15% maximal IV size             13.96
                                20% maximal IV size             10.26
                                25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for i.i.d. errors only.

Underidentification test
Ho: matrix of reduced form coefficients has rank=K1-1 (underidentified)
Ha: matrix has rank=K1 (identified)
Kleibergen-Paap rk LM statistic          Chi-sq(4)=20.44    P-val=0.0004

Weak identification test
Ho: equation is weakly identified
Cragg-Donald Wald F statistic                                    18.53
Kleibergen-Paap Wald rk F statistic                              13.30

Stock-Yogo weak ID test critical values for K1=1 and L1=4:
                                 5% maximal IV relative bias    16.85
                                10% maximal IV relative bias    10.27
                                20% maximal IV relative bias     6.71
                                30% maximal IV relative bias     5.34
                                10% maximal IV size             24.58
                                15% maximal IV size             13.96
                                20% maximal IV size             10.26
                                25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
```

```
Weak-instrument-robust inference
Tests of joint significance of endogenous regressors B1 in main equation
Ho: B1=0 and orthogonality conditions are valid
Anderson-Rubin Wald test           F(4,44)=        3.04     P-val=0.0268
Anderson-Rubin Wald test           Chi-sq(4)=     12.48     P-val=0.0141
Stock-Wright LM S statistic        Chi-sq(4)=      8.55     P-val=0.0734

NB: Underidentification, weak identification and weak-identification-robust
    test statistics cluster-robust

Number of clusters             N_clust  =         45
Number of observations               N  =       3905
Number of regressors                 K  =          1
Number of endogenous regressors      K1 =          1
Number of instruments                L  =          4
Number of excluded instruments       L1 =          4

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                 Number of obs =     3905
                                                       F(  1,    44) =     5.77
                                                       Prob > F      =   0.0206
Total (centered) SS     =  224.3009732                 Centered R2   =  -0.0694
Total (uncentered) SS   =  224.3009732                 Uncentered R2 =  -0.0694
Residual SS             =  239.8677668                 Root MSE      =    .2481

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTQtotS |   .0464163   .0193252     2.40   0.021     .0074689    .0853637
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             20.436
                                                   Chi-sq(4) P-val =    0.0004
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               18.535
                         (Kleibergen-Paap rk Wald F statistic):         13.296
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.503
                                                   Chi-sq(3) P-val =    0.2121
------------------------------------------------------------------------------
Instrumented:         LlnsumTQtotS
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------
```

```
Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)), absorb(stateyear)
>  cluster(state) first
  3. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

First-stage regressions
-----------------------


First-stage regression of Llnsum4TVtotS:

Statistics robust to heteroskedasticity and clustering on state
Number of obs =                 3889
Number of clusters (state) =      45
------------------------------------------------------------------------------
             |               Robust
  Llnsum4TVtotS |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
c.LlnTOTsum4TVtotSinst#c.dD1 |   .0065611    .244702     0.03   0.979    -.4731956    .4863177
             |
c.LlnTOTsum4TVtotSinst#c.dD6 |  -5.862832   25.63713    -0.23   0.819    -56.12634    44.40068
             |
c.LlnTOTsum4TVtotSinst#c.lnland |   .0159023   .0092809     1.71   0.087    -.0022936    .0340982
             |
c.LlnTOTsum4TVtotSinst#c.HIDTA |   .0728316   .0159861     4.56   0.000     .0414897    .1041735
------------------------------------------------------------------------------
F test of excluded instruments:
  F(  4,    44) =    10.28
  Prob > F      =   0.0000
Sanderson-Windmeijer multivariate F test of excluded instruments:
  F(  4,    44) =    10.28
  Prob > F      =   0.0000


Summary results for first-stage regressions
-------------------------------------------

                                          (Underid)             (Weak id)
Variable     | F(  4,    44)  P-val | SW Chi-sq(  4) P-val | SW F(  4,    44)
Llnsum4TVtot |      10.28    0.0000 |       42.08   0.0000 |       10.28

NB: first-stage test statistics cluster-robust
```

```
Stock-Yogo weak ID F test critical values for single endogenous regressor:
                                 5% maximal IV relative bias    16.85
                                10% maximal IV relative bias    10.27
                                20% maximal IV relative bias     6.71
                                30% maximal IV relative bias     5.34
                                10% maximal IV size             24.58
                                15% maximal IV size             13.96
                                20% maximal IV size             10.26
                                25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for i.i.d. errors only.

Underidentification test
Ho: matrix of reduced form coefficients has rank=K1-1 (underidentified)
Ha: matrix has rank=K1 (identified)
Kleibergen-Paap rk LM statistic          Chi-sq(4)=16.05    P-val=0.0029

Weak identification test
Ho: equation is weakly identified
Cragg-Donald Wald F statistic                                    11.57
Kleibergen-Paap Wald rk F statistic                              10.28

Stock-Yogo weak ID test critical values for K1=1 and L1=4:
                                 5% maximal IV relative bias    16.85
                                10% maximal IV relative bias    10.27
                                20% maximal IV relative bias     6.71
                                30% maximal IV relative bias     5.34
                                10% maximal IV size             24.58
                                15% maximal IV size             13.96
                                20% maximal IV size             10.26
                                25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.

Weak-instrument-robust inference
Tests of joint significance of endogenous regressors B1 in main equation
Ho: B1=0 and orthogonality conditions are valid
Anderson-Rubin Wald test           F(4,44)=        3.20     P-val=0.0218
Anderson-Rubin Wald test           Chi-sq(4)=     13.09     P-val=0.0109
Stock-Wright LM S statistic        Chi-sq(4)=      8.28     P-val=0.0819

NB: Underidentification, weak identification and weak-identification-robust
    test statistics cluster-robust

Number of clusters             N_clust  =         45
Number of observations               N  =       3889
Number of regressors                 K  =          1
Number of endogenous regressors      K1 =          1
Number of instruments                L  =          4
Number of excluded instruments       L1 =          4

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =     3889
                                                      F(  1,    44) =     4.63
                                                      Prob > F      =   0.0369
Total (centered) SS     =  217.2529263                Centered R2   =  -0.0780
Total (uncentered) SS   =  217.2529263                Uncentered R2 =  -0.0780
Residual SS             =  234.1987902                Root MSE      =    .2455

------------------------------------------------------------------------------
```

```
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   .0142259   .0066113     2.15   0.037     .0009016    .0275502
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             16.052
                                                    Chi-sq(4) P-val =    0.0029
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               11.574
                         (Kleibergen-Paap rk Wald F statistic):         10.276
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.186
                                                    Chi-sq(3) P-val =    0.2420
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

First-stage regressions
-----------------------


First-stage regression of Llnsum4TQtotS:

Statistics robust to heteroskedasticity and clustering on state
Number of obs =                  3889
Number of clusters (state) =       45
------------------------------------------------------------------------------
                             |               Robust
                 Llnsum4TQtotS |      Coef.   Std. Err.      t    P>|t|     [95% Conf.
Interval]
-----------------------------+------------------------------------------------
   c.LlnTOTsum4TQtotSinst#c.dD1 |    .122302   .1417924     0.86   0.388    -.1556927
.4002966
                             |
   c.LlnTOTsum4TQtotSinst#c.dD6 |   3.414061   13.89496     0.25   0.806    -23.82806
30.65618
```

```
                                    |
c.LlnTOTsum4TQtotSinst#c.lnland |   .0077266   .0050978     1.52   0.130    -.0022681
.0177213
                                    |
 c.LlnTOTsum4TQtotSinst#c.HIDTA |   .0485353   .0081023     5.99   0.000       .03265
.0644205
------------------------------------------------------------------------------------------
----------
F test of excluded instruments:
  F(  4,    44) =    12.96
  Prob > F      =   0.0000
Sanderson-Windmeijer multivariate F test of excluded instruments:
  F(  4,    44) =    12.96
  Prob > F      =   0.0000



Summary results for first-stage regressions
-------------------------------------------

                                          (Underid)             (Weak id)
Variable     | F(  4,    44)  P-val | SW Chi-sq(  4) P-val | SW F(  4,    44)
Llnsum4TQtot |      12.96    0.0000 |       53.08   0.0000 |       12.96

NB: first-stage test statistics cluster-robust

Stock-Yogo weak ID F test critical values for single endogenous regressor:
                                 5% maximal IV relative bias    16.85
                                10% maximal IV relative bias    10.27
                                20% maximal IV relative bias     6.71
                                30% maximal IV relative bias     5.34
                                10% maximal IV size             24.58
                                15% maximal IV size             13.96
                                20% maximal IV size             10.26
                                25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for i.i.d. errors only.

Underidentification test
Ho: matrix of reduced form coefficients has rank=K1-1 (underidentified)
Ha: matrix has rank=K1 (identified)
Kleibergen-Paap rk LM statistic          Chi-sq(4)=19.78    P-val=0.0006

Weak identification test
Ho: equation is weakly identified
Cragg-Donald Wald F statistic                                    17.60
Kleibergen-Paap Wald rk F statistic                              12.96

Stock-Yogo weak ID test critical values for K1=1 and L1=4:
                                 5% maximal IV relative bias    16.85
                                10% maximal IV relative bias    10.27
                                20% maximal IV relative bias     6.71
                                30% maximal IV relative bias     5.34
                                10% maximal IV size             24.58
                                15% maximal IV size             13.96
                                20% maximal IV size             10.26
                                25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.

Weak-instrument-robust inference
Tests of joint significance of endogenous regressors B1 in main equation
Ho: B1=0 and orthogonality conditions are valid
Anderson-Rubin Wald test           F(4,44)=        3.17     P-val=0.0226
Anderson-Rubin Wald test           Chi-sq(4)=     12.97     P-val=0.0114
```

```
Stock-Wright LM S statistic        Chi-sq(4)=      8.22     P-val=0.0840

NB: Underidentification, weak identification and weak-identification-robust
    test statistics cluster-robust

Number of clusters             N_clust  =         45
Number of observations               N  =       3889
Number of regressors                 K  =          1
Number of endogenous regressors      K1 =          1
Number of instruments                L  =          4
Number of excluded instruments       L1 =          4

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =     3889
                                                      F(  1,    44) =     4.95
                                                      Prob > F      =   0.0313
Total (centered) SS     =  217.2529263                Centered R2   =  -0.0615
Total (uncentered) SS   =  217.2529263                Uncentered R2 =  -0.0615
Residual SS             =   230.616456                Root MSE      =    .2436

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTQtotS |   .0434332   .0195305     2.22   0.031     .0040721    .0827943
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.779
                                                    Chi-sq(4) P-val =    0.0006
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               17.596
                         (Kleibergen-Paap rk Wald F statistic):         12.961
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.149
                                                    Chi-sq(3) P-val =    0.2459
------------------------------------------------------------------------------
Instrumented:         LlnsumTQtotS
Excluded instruments: c.LlnTOTsumTQtotSinst#c.dD1 c.LlnTOTsumTQtotSinst#c.dD6
                      c.LlnTOTsumTQtotSinst#c.lnland
                      c.LlnTOTsumTQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
```

```
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Table 3: quantification exercise
. * From no transfer to 10th percentile
. foreach var in "TVtotS" "TQtotS" {
  2.         capture drop x* inst*
  3.         gen x=Llnsum4`var'
  4.         capture drop x2
  5.         gen x2=Llnsum4`var'
  6.         gen inst=LlnTOTsum4`var'
  7.         quietly: ivreghdfe y (x = c.inst#(c.dD1 c.dD6 c.lnland c.HIDTA)),
absorb(state year) cluster(sta
> te)
  8.         * Calculate percentiles by year
.         predict p if e(sample)
  9.         forvalues i=2007(1)2016 {
 10.                 quietly: sum x if e(sample) & x>0 & year==`i', detail
 11.                 replace x=r(p10) if year==`i'
 12.         }
 13.
.         * Significance, using margins & contrast with the need of ivreg2
.         ivreg2 y (x2 = c.inst#(c.dD1 c.dD6 c.lnland c.HIDTA)) i.st i.year if
year>2006 & p~=., cluster(stat
> e) small
 14.         margins if x2==0,  at((asobserved) _all) at(x2=generate(x))
contrast(atcontrast(r._at))
 15.         drop p
 16. }
(option xb assumed; fitted values)
(201 real changes made)
(548 real changes made)
(0 real changes made)
(639 real changes made)
(207 real changes made)
(658 real changes made)
(0 real changes made)
(758 real changes made)
(215 real changes made)
(653 real changes made)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                 Number of obs =      3905
                                                       F( 52,    44) =      4.22
                                                       Prob > F      =    0.0000
Total (centered) SS     =  229.6286812                 Centered R2   =   -0.0653
Total (uncentered) SS   =         3660                 Uncentered R2 =    0.9332
Residual SS             =  244.6282826                 Root MSE      =      .252

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          x2 |   .0155198    .006583     2.36   0.023     .0022526    .0287871
             |
          st |
          2  |   .0001346    .020641     0.01   0.995    -.0414646    .0417338
          3  |  -.1165371   .0267652    -4.35   0.000    -.1704788   -.0625955
          4  |  -.0287937   .0013951   -20.64   0.000    -.0316054    -.025982
```

```
           5  |  -.0274332   .0069585    -3.94   0.000    -.0414571   -.0134094
           6  |  -.0578946   .0261277    -2.22   0.032    -.1105515   -.0052376
           7  |  -.0039619   .0295847    -0.13   0.894    -.0635859    .0556622
           8  |   .0571225   .0391676     1.46   0.152    -.0218146    .1360596
           9  |   .0342348   .0322123     1.06   0.294    -.0306847    .0991544
          10  |  -.0032744   .0106853    -0.31   0.761    -.0248092    .0182604
          11  |   .0289855     .01323     2.19   0.034     .0023223    .0556487
          12  |   .0086481   .0390073     0.22   0.826    -.0699659    .0872621
          13  |  -.0241898   .0047877    -5.05   0.000    -.0338387   -.0145408
          14  |  -.0873518   .0424338    -2.06   0.045    -.1728714   -.0018321
          15  |   .0482174   .0382101     1.26   0.214      -.02879    .1252249
          16  |   .0083187   .0038972     2.13   0.038     .0004644     .016173
          17  |  -.0563452   .0048126   -11.71   0.000    -.0660443   -.0466461
          18  |   .0188131   .0308923     0.61   0.546    -.0434462    .0810724
          19  |  -.0092725   .0091878    -1.01   0.318    -.0277893    .0092443
          20  |  -.0513793   .0323439    -1.59   0.119    -.1165642    .0138056
          21  |   .0139934   .0496915     0.28   0.780    -.0861533    .1141401
          22  |   .0436829   .0193113     2.26   0.029     .0047636    .0826022
          23  |   -.027746   .0168233    -1.65   0.106    -.0616511     .006159
          24  |  -.1077862    .011877    -9.08   0.000    -.1317227   -.0838497
          25  |   .0575894   .0276139     2.09   0.043     .0019374    .1132415
          26  |   .0710021   .0240028     2.96   0.005     .0226277    .1193765
          27  |  -.0263517   .0344122    -0.77   0.448     -.095705    .0430015
          28  |  -.0482438   .0249673    -1.93   0.060    -.0985622    .0020746
          29  |  -.0652843   .0163722    -3.99   0.000    -.0982803   -.0322884
          30  |  -.0154578   .0231633    -0.67   0.508    -.0621403    .0312248
          31  |  -.0159539   .0266007    -0.60   0.552     -.069564    .0376562
          32  |  -.0490656    .031848    -1.54   0.131    -.1132511    .0151199
          33  |   .0078226   .0277021     0.28   0.779    -.0480073    .0636524
          34  |   .0627336   .0538152     1.17   0.250    -.0457239    .1711911
          35  |   .0123513   .0234748     0.53   0.601    -.0349591    .0596617
          36  |  -.0357505   .0171267    -2.09   0.043     -.070267    -.001234
          37  |  -.1101184   .0022155   -49.70   0.000    -.1145835   -.1056533
          38  |   .0286392   .0355007     0.81   0.424    -.0429077    .1001861
          39  |  -.0036137   .0111225    -0.32   0.747    -.0260297    .0188022
          40  |  -.0784378   .0440701    -1.78   0.082    -.1672553    .0103797
          41  |   .0837909    .026059     3.22   0.002     .0312724    .1363095
          42  |  -.0704627   .0059716   -11.80   0.000    -.0824976   -.0584278
          43  |   .0253627    .010474     2.42   0.020     .0042538    .0464716
          44  |  -.1011795   .0498598    -2.03   0.049    -.2016652   -.0006938
          45  |   .0131788   .0114701     1.15   0.257    -.0099377    .0362953
              |
        year  |
        2008  |  -.0643061   .0439531    -1.46   0.151    -.1528878    .0242756
        2010  |  -.0553425   .0425228    -1.30   0.200    -.1410417    .0303566
        2011  |   -.007563   .0216295    -0.35   0.728    -.0511543    .0360283
        2012  |  -.0531311   .0415154    -1.28   0.207    -.1367998    .0305377
        2014  |  -.0493079   .0412954    -1.19   0.239    -.1325334    .0339176
        2015  |   .0015603   .0242622     0.06   0.949     -.047337    .0504576
        2016  |  -.0569739   .0459753    -1.24   0.222     -.149631    .0356832
              |
        _cons |   .9335005   .0543698    17.17   0.000     .8239254    1.043076
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             17.261
                                                    Chi-sq(4) P-val =    0.0017
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                12.333
                         (Kleibergen-Paap rk Wald F statistic):          11.411
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
```

```
                                        25% maximal IV size             8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Warning: estimated covariance matrix of moment conditions not of full rank.
         overidentification statistic not reported, and standard errors and
         model tests should be interpreted with caution.
Possible causes:
         number of clusters insufficient to calculate robust covariance matrix
         singleton dummy variable (dummy with one 1 and N-1 0s or vice versa)
partial option may address problem.
------------------------------------------------------------------------------
Instrumented:         x2
Included instruments: 2.st 3.st 4.st 5.st 6.st 7.st 8.st 9.st 10.st 11.st 12.st
                      13.st 14.st 15.st 16.st 17.st 18.st 19.st 20.st 21.st
                      22.st 23.st 24.st 25.st 26.st 27.st 28.st 29.st 30.st
                      31.st 32.st 33.st 34.st 35.st 36.st 37.st 38.st 39.st
                      40.st 41.st 42.st 43.st 44.st 45.st 2008.year 2010.year
                      2011.year 2012.year 2014.year 2015.year 2016.year
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
------------------------------------------------------------------------------

Contrasts of predictive margins
Model VCE    : Robust

Expression   : Linear prediction, predict()

1._at        : (asobserved)

2._at        : x2              = x

------------------------------------------------
             |         df        chi2     P>chi2
-------------+----------------------------------
         _at |          1        5.56     0.0184
------------------------------------------------

------------------------------------------------------------------
             |            Delta-method
             |   Contrast   Std. Err.     [95% Conf. Interval]
-------------+----------------------------------------------------
         _at |
   (2 vs 1)  |   .1024111   .0434396      .0172709    .1875512
------------------------------------------------------------------
(option xb assumed; fitted values)
(197 real changes made)
(535 real changes made)
(0 real changes made)
(633 real changes made)
(203 real changes made)
(616 real changes made)
(0 real changes made)
(696 real changes made)
(201 real changes made)
(604 real changes made)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F( 52,    44) =      2.58
                                                      Prob > F      =    0.0008
```

```
Total (centered) SS     =  229.6286812                Centered R2   =  -0.0446
Total (uncentered) SS   =        3660                Uncentered R2 =   0.9345
Residual SS             =  239.8677668                Root MSE      =    .2495

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          x2 |   .0464163   .0194353     2.39   0.021     .0072471    .0855855
             |
          st |
           2 |   .0081802   .0233762     0.35   0.728    -.0389314    .0552919
           3 |  -.1024609   .0272626    -3.76   0.001    -.1574051   -.0475167
           4 |  -.0480369   .0084434    -5.69   0.000    -.0650536   -.0310203
           5 |   -.040471   .0015397   -26.29   0.000     -.043574    -.037368
           6 |  -.0665647    .027131    -2.45   0.018    -.1212436   -.0118859
           7 |   -.022104    .028099    -0.79   0.436    -.0787338    .0345258
           8 |   .0420548   .0358609     1.17   0.247    -.0302181    .1143278
           9 |   .0225105   .0308706     0.73   0.470     -.039705    .0847261
          10 |  -.0184607   .0041801    -4.42   0.000    -.0268852   -.0100362
          11 |    .014483     .00703     2.06   0.045     .0003148    .0286511
          12 |  -.0080063   .0352093    -0.23   0.821     -.078966    .0629533
          13 |   -.026148   .0041031    -6.37   0.000    -.0344174   -.0178787
          14 |   -.098332   .0440652    -2.23   0.031    -.1871395   -.0095245
          15 |   .0305215   .0307626     0.99   0.327    -.0314763    .0925194
          16 |  -.0193854   .0077549    -2.50   0.016    -.0350144   -.0037563
          17 |  -.0687643    .006336   -10.85   0.000    -.0815336    -.055995
          18 |   -.006686   .0280402    -0.24   0.813    -.0631973    .0498253
          19 |   -.021907   .0038322    -5.72   0.000    -.0296303   -.0141836
          20 |  -.0611787   .0312624    -1.96   0.057    -.1241838    .0018264
          21 |  -.0060453   .0480181    -0.13   0.900    -.1028194    .0907288
          22 |   .0236838   .0107064     2.21   0.032     .0021066    .0452611
          23 |   -.041655   .0108598    -3.84   0.000    -.0635416   -.0197685
          24 |  -.1263541   .0041367   -30.55   0.000     -.134691   -.1180172
          25 |   .0341415   .0174931     1.95   0.057    -.0011136    .0693966
          26 |   .0558435   .0199212     2.80   0.007      .015695    .0959919
          27 |  -.0517002   .0275554    -1.88   0.067    -.1072345    .0038341
          28 |  -.0632236   .0184837    -3.42   0.001    -.1004751    -.025972
          29 |  -.0882646   .0065253   -13.53   0.000    -.1014154   -.0751138
          30 |  -.0118832   .0248429    -0.48   0.635    -.0619508    .0381845
          31 |  -.0253511   .0272715    -0.93   0.358    -.0803133    .0296111
          32 |  -.0506018   .0323668    -1.56   0.125    -.1158328    .0146291
          33 |  -.0081266   .0241235    -0.34   0.738    -.0567443    .0404912
          34 |   .0398626   .0505203     0.79   0.434    -.0619543    .1416795
          35 |   .0048935   .0242695     0.20   0.841    -.0440185    .0538056
          36 |  -.0498015   .0110113    -4.52   0.000    -.0719933   -.0276097
          37 |  -.1301417   .0101818   -12.78   0.000    -.1506617   -.1096217
          38 |   .0078542   .0314735     0.25   0.804    -.0555765    .0712849
          39 |  -.0168493   .0055243    -3.05   0.004    -.0279828   -.0057159
          40 |  -.0905931   .0451811    -2.01   0.051    -.1816495    .0004633
          41 |   .0685091   .0196894     3.48   0.001     .0288277    .1081906
          42 |  -.0732577   .0067462   -10.86   0.000    -.0868538   -.0596617
          43 |  -.0000107   .0006427    -0.02   0.987     -.001306    .0012847
          44 |   -.124891   .0420358    -2.97   0.005    -.2096086   -.0401734
          45 |  -.0105083   .0014547    -7.22   0.000      -.01344   -.0075767
             |
        year |
        2008 |  -.0652702    .049139    -1.33   0.191    -.1643033    .0337629
        2010 |  -.0561374   .0456993    -1.23   0.226    -.1482382    .0359635
        2011 |   -.009916   .0218423    -0.45   0.652    -.0539363    .0341043
        2012 |   -.047334   .0461101    -1.03   0.310    -.1402628    .0455949
        2014 |  -.0341878   .0448553    -0.76   0.450    -.1245877    .0562121
        2015 |   .0165014   .0217751     0.76   0.453    -.0273834    .0603862
        2016 |  -.0520187   .0486443    -1.07   0.291    -.1500549    .0460174
             |
```

```
       _cons |   .9569042    .051962    18.42   0.000     .8521817    1.061627
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             20.436
                                                    Chi-sq(4) P-val =    0.0004
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               18.325
                         (Kleibergen-Paap rk Wald F statistic):         13.146
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Warning: estimated covariance matrix of moment conditions not of full rank.
         overidentification statistic not reported, and standard errors and
         model tests should be interpreted with caution.
Possible causes:
         number of clusters insufficient to calculate robust covariance matrix
         singleton dummy variable (dummy with one 1 and N-1 0s or vice versa)
partial option may address problem.
------------------------------------------------------------------------------
Instrumented:         x2
Included instruments: 2.st 3.st 4.st 5.st 6.st 7.st 8.st 9.st 10.st 11.st 12.st
                      13.st 14.st 15.st 16.st 17.st 18.st 19.st 20.st 21.st
                      22.st 23.st 24.st 25.st 26.st 27.st 28.st 29.st 30.st
                      31.st 32.st 33.st 34.st 35.st 36.st 37.st 38.st 39.st
                      40.st 41.st 42.st 43.st 44.st 45.st 2008.year 2010.year
                      2011.year 2012.year 2014.year 2015.year 2016.year
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
------------------------------------------------------------------------------

Contrasts of predictive margins
Model VCE    : Robust

Expression   : Linear prediction, predict()

1._at        : (asobserved)

2._at        : x2              = x

------------------------------------------------
             |         df        chi2     P>chi2
-------------+----------------------------------
         _at |          1        5.70     0.0169
------------------------------------------------

------------------------------------------------------------------
             |            Delta-method
             |   Contrast   Std. Err.     [95% Conf. Interval]
-------------+----------------------------------------------------
         _at |
   (2 vs 1)  |   .0399517   .0167284      .0071646    .0727388
------------------------------------------------------------------

.
. foreach var in "TVtotS" "TQtotS" {
  2.         capture drop x* inst*
  3.         gen x=Llnsum4`var'
  4.         capture drop x2
  5.         gen x2=x
```

```
  6.         gen inst=LlnTOTsum4`var'
  7.         ivreghdfe y (x = c.inst#(c.dD1 c.dD6 c.lnland c.HIDTA)), absorb(stateyear)
cluster(state)
  8.         * Calculate percentiles by year:
.         predict p if e(sample)
  9.         forvalues i=2007(1)2016 {
 10.                 quietly: sum x if e(sample) & x>0 & year==`i', detail
 11.                 replace x=r(p10) if year==`i'
 12.         }
 13.
.         * Significance, using margins & contrast with the need of ivreg2
.         ivreg2 y (x2 = c.inst#(c.dD1 c.dD6 c.lnland c.HIDTA)) i.sty if year>2006 &
p~=., cluster(state) sma
> ll
 14.         margins if x2==0,  at((asobserved) _all) at(x2=generate(x))
contrast(atcontrast(r._at))
 15.         drop p
 16. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      4.63
                                                      Prob > F      =    0.0369
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0780
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0780
Residual SS             =  234.1987902                Root MSE      =     .2455

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |   .0142259   .0066113     2.15   0.037     .0009016    .0275502
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             16.052
                                                   Chi-sq(4) P-val =    0.0029
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               11.574
                         (Kleibergen-Paap rk Wald F statistic):         10.276
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.186
                                                   Chi-sq(3) P-val =    0.2420
------------------------------------------------------------------------------
Instrumented:         x
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
```

```
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(option xb assumed; fitted values)
(16 missing values generated)
(201 real changes made)
(548 real changes made)
(0 real changes made)
(639 real changes made)
(207 real changes made)
(659 real changes made)
(0 real changes made)
(758 real changes made)
(215 real changes made)
(653 real changes made)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(131,    44) =      0.01
                                                      Prob > F      =    1.0000
Total (centered) SS     =  227.8164052                Centered R2   =   -0.0280
Total (uncentered) SS   =         3646                Uncentered R2 =    0.9358
Residual SS             =  234.1987902                Root MSE      =     .2497

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          x2 |   .0142259   .0067248     2.12   0.040      .000673    .0277788
             |
         sty |
           2 |    .009567   .0197192     0.49   0.630    -.0301745    .0493085
           3 |  -.0202501   .0055785    -3.63   0.001     -.031493   -.0090073
           4 |   .0649119    .006443    10.07   0.000     .0519269    .0778968
           5 |   .0194455   .0164646     1.18   0.244    -.0137368    .0526277
           6 |  -.0183465   .0014001   -13.10   0.000    -.0211683   -.0155247
           7 |  -.0314546   .0194143    -1.62   0.112    -.0705814    .0076723
           8 |  -.1220376    .003145   -38.80   0.000    -.1283759   -.1156994
           9 |   .0224851   .0136126     1.65   0.106    -.0049494    .0499196
          10 |  -.2349246   .0407509    -5.76   0.000    -.3170527   -.1527965
          12 |  -.0212408   .0056332    -3.77   0.000    -.0325937   -.0098878
          13 |  -.0054724    .015299    -0.36   0.722    -.0363055    .0253606
          15 |  -.0227866    .001248   -18.26   0.000    -.0253018   -.0202714
          16 |  -.0272248   .0045103    -6.04   0.000    -.0363147   -.0181349
          18 |  -.0808024   .0166916    -4.84   0.000     -.114442   -.0471627
          20 |  -.0491197   .0001899  -258.66   0.000    -.0495024    -.048737
          21 |  -.0500998   .0209123    -2.40   0.021    -.0922458   -.0079538
          22 |   .0138479   .0063406     2.18   0.034     .0010692    .0266265
          23 |  -.0225878   .0066795    -3.38   0.002    -.0360494   -.0091262
          24 |  -.0108308    .010453    -1.04   0.306    -.0318975    .0102359
          25 |   .0419635   .0188431     2.23   0.031     .0039876    .0799393
          26 |   .0522018   .0198613     2.63   0.012      .012174    .0922297
          27 |   .0591823   .0111207     5.32   0.000     .0367701    .0815946
          28 |   .0201013   .0190256     1.06   0.296    -.0182423    .0584449
```

29	.0272126	.0033943	8.02	0.000	.0203718	.0340535
30	.0441656	.0033641	13.13	0.000	.0373857	.0509454
31	-.0035682	.0024343	-1.47	0.150	-.0084743	.0013379
32	.0022841	.0001028	22.21	0.000	.0020768	.0024913
33	.0304579	.0049284	6.18	0.000	.0205253	.0403906
34	.0322047	.0031027	10.38	0.000	.0259516	.0384579
35	-.0606481	.0198142	-3.06	0.004	-.100581	-.0207153
36	-.0261643	.0144942	-1.81	0.078	-.0553754	.0030468
37	.0800551	.0136014	5.89	0.000	.0526433	.1074668
38	.0340915	.0143839	2.37	0.022	.0051026	.0630803
39	-.0357303	.0120418	-2.97	0.005	-.0599991	-.0114616
40	.0040986	.0179266	0.23	0.820	-.0320301	.0402273
42	-.0663297	.0030729	-21.59	0.000	-.0725228	-.0601366
44	-.0457556	.0051198	-8.94	0.000	-.056074	-.0354373
45	.0176599	.0270803	0.65	0.518	-.0369167	.0722366
46	.0722891	.0099303	7.28	0.000	.0522759	.0923023
47	.0135794	.0178225	0.76	0.450	-.0223394	.0494983
48	.0112261	.0059447	1.89	0.066	-.0007546	.0232068
49	.032262	.008991	3.59	0.001	.0141419	.0503822
50	-.4322359	.0077913	-55.48	0.000	-.4479382	-.4165336
51	-.125595	.0160816	-7.81	0.000	-.1580054	-.0931846
52	.0287679	.0106427	2.70	0.010	.0073189	.0502169
53	-.01156	.0040589	-2.85	0.007	-.0197403	-.0033798
54	.0336175	.009831	3.42	0.001	.0138044	.0534305
55	.0201217	.0039864	5.05	0.000	.0120875	.0281558
56	-.0277987	.0120586	-2.31	0.026	-.0521011	-.0034963
57	.0120868	.0096935	1.25	0.219	-.0074493	.0316228
58	-.1382207	.0245227	-5.64	0.000	-.1876429	-.0887984
60	-.0259016	.0074876	-3.46	0.001	-.0409918	-.0108114
61	-.0267387	.0106196	-2.52	0.016	-.0481411	-.0053364
62	.0578546	.0118609	4.88	0.000	.0339506	.0817586
63	.0415572	.0221602	1.88	0.067	-.0031038	.0862182
64	.0901519	.0271282	3.32	0.002	.0354786	.1448251
65	.0607855	.0044924	13.53	0.000	.0517317	.0698393
66	.0176851	.0119249	1.48	0.145	-.006348	.0417183
67	.1158424	.0305184	3.80	0.000	.0543365	.1773483
68	-.0268361	.0001481	-181.24	0.000	-.0271345	-.0265377
69	-.0249326	.0124557	-2.00	0.052	-.0500354	.0001703
70	-.064168	.0045144	-14.21	0.000	-.0732661	-.0550699
71	-.1302961	.0012444	-104.71	0.000	-.1328039	-.1277882
72	.0043412	.0151299	0.29	0.776	-.026151	.0348334
73	.0961107	.021191	4.54	0.000	.053403	.1388184
74	.0929839	.019713	4.72	0.000	.053255	.1327127
75	.0798749	.0135162	5.91	0.000	.0526348	.1071149
76	.0786668	.0129451	6.08	0.000	.0525777	.1047559
77	.0406489	.0050264	8.09	0.000	.0305187	.050779
78	.054024	.0012962	41.68	0.000	.0514118	.0566363
79	.1017417	.0238529	4.27	0.000	.0536694	.149814
80	-.5508243	.0305184	-18.05	0.000	-.6123302	-.4893184
81	-.217491	.0305184	-7.13	0.000	-.2789968	-.1559851
82	.1158424	.0305184	3.80	0.000	.0543365	.1773483
83	.0749367	.0111819	6.70	0.000	.0524012	.0974723
84	.1158424	.0305184	3.80	0.000	.0543365	.1773483
85	.0558489	.0021588	25.87	0.000	.0514981	.0601997
86	.0399219	.0053701	7.43	0.000	.0290991	.0507446
88	-.0160248	.0237964	-0.67	0.504	-.0639833	.0319338
90	-.0388644	.0046579	-8.34	0.000	-.0482518	-.029477
92	-.0960358	.003086	-31.12	0.000	-.1022552	-.0898164
93	-.0227041	.0122971	-1.85	0.072	-.0474872	.002079
94	-.0841576	.0305184	-2.76	0.008	-.1456635	-.0226517
96	-.0525831	.0236266	-2.23	0.031	-.1001994	-.0049668
97	.1158424	.0305184	3.80	0.000	.0543365	.1773483
98	.1158424	.0305184	3.80	0.000	.0543365	.1773483
99	-.0060347	.0270943	-0.22	0.825	-.0606396	.0485703
100	.0080256	.0204478	0.39	0.697	-.0331843	.0492355

```
         102  |   .0054642   .0050723     1.08   0.287    -.0047583    .0156867
         103  |    .009297   .0037888     2.45   0.018     .0016612    .0169327
         104  |  -.0582033   .0243514    -2.39   0.021    -.1072804   -.0091262
         105  |  -.0508243   .0305184    -1.67   0.103    -.1123302    .0106816
         106  |   .0594741   .0038725    15.36   0.000     .0516696    .0672786
         107  |  -.1265307   .0094155   -13.44   0.000    -.1455063    -.107555
         108  |  -.0039943   .0016768    -2.38   0.022    -.0073737   -.0006149
         109  |  -.0179323   .0263706    -0.68   0.500    -.0710787    .0352141
         110  |   .0778856   .0125758     6.19   0.000     .0525407    .1032304
         111  |  -.1481057   .0107941   -13.72   0.000    -.1698598   -.1263516
         112  |   .0611592   .0046691    13.10   0.000     .0517494    .0705691
         113  |   .1158424   .0305184     3.80   0.000     .0543365    .1773483
         114  |   .1158424   .0305184     3.80   0.000     .0543365    .1773483
         115  |   .0973223   .0217638     4.47   0.000     .0534603    .1411844
         116  |   .0311333   .0062325     5.00   0.000     .0185725    .0436942
         117  |   .0342875   .0080335     4.27   0.000     .0180969     .050478
         118  |   .0027894   .0081508     0.34   0.734    -.0136375    .0192163
         119  |    .060528   .0043707    13.85   0.000     .0517195    .0693366
         120  |   -.016973    .032265    -0.53   0.601    -.0819988    .0480528
         121  |  -.0445997   .0003043  -146.58   0.000    -.0452129   -.0439865
         122  |  -.0229538   .0174314    -1.32   0.195    -.0580844    .0121768
         123  |  -.0891934   .0033762   -26.42   0.000    -.0959976   -.0823892
         124  |  -.1143189   .0166235    -6.88   0.000    -.1478214   -.0808165
         125  |   .0196744   .0183483     1.07   0.289    -.0173041    .0566529
         127  |    .025029   .0157275     1.59   0.119    -.0066677    .0567257
         128  |   .0251683   .0000955   263.52   0.000     .0249758    .0253608
         129  |   -.068932   .0062017   -11.12   0.000    -.0814306   -.0564333
         130  |    .048279   .0014196    34.01   0.000      .045418      .05114
         131  |  -.0496835   .0062966    -7.89   0.000    -.0623735   -.0369936
         132  |  -.0259243   .0180473    -1.44   0.158    -.0622963    .0104477
         133  |  -.0064921    .002431    -2.67   0.011    -.0113914   -.0015928
         134  |   .0864952   .0166457     5.20   0.000      .052948    .1200423
         136  |  -.0686611    .004175   -16.45   0.000    -.0770752   -.0602469
         137  |   .0305786   .0097868     3.12   0.003     .0108546    .0503025
         139  |  -.0657149   .0142005    -4.63   0.000     -.094334   -.0370957
         140  |  -.0589857   .0521249    -1.13   0.264    -.1640365    .0460651
         142  |    .000668    .010795     0.06   0.951    -.0210879    .0224239
         143  |   .0514465    .011071     4.65   0.000     .0291343    .0737587
         144  |   -.287181   .0118997   -24.13   0.000    -.3111633   -.2631986
         145  |   .0047313   .0305184     0.16   0.878    -.0567746    .0662371
         146  |   .0615556   .0048564    12.68   0.000     .0517681    .0713431
         147  |   -.026474   .0003938   -67.23   0.000    -.0272676   -.0256804
              |
       _cons  |   .8841576   .0305184    28.97   0.000     .8226517    .9456635
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):            16.052
                                                   Chi-sq(4) P-val =    0.0029
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):              11.187
                         (Kleibergen-Paap rk Wald F statistic):         9.932
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Warning: estimated covariance matrix of moment conditions not of full rank.
         overidentification statistic not reported, and standard errors and
         model tests should be interpreted with caution.
Possible causes:
```

```
        number of clusters insufficient to calculate robust covariance matrix
        singleton dummy variable (dummy with one 1 and N-1 0s or vice versa)
partial option may address problem.
------------------------------------------------------------------------------
Instrumented:         x2
Included instruments: 2.sty 3.sty 4.sty 5.sty 6.sty 7.sty 8.sty 9.sty 10.sty
                      12.sty 13.sty 15.sty 16.sty 18.sty 20.sty 21.sty 22.sty
                      23.sty 24.sty 25.sty 26.sty 27.sty 28.sty 29.sty 30.sty
                      31.sty 32.sty 33.sty 34.sty 35.sty 36.sty 37.sty 38.sty
                      39.sty 40.sty 42.sty 44.sty 45.sty 46.sty 47.sty 48.sty
                      49.sty 50.sty 51.sty 52.sty 53.sty 54.sty 55.sty 56.sty
                      57.sty 58.sty 60.sty 61.sty 62.sty 63.sty 64.sty 65.sty
                      66.sty 67.sty 68.sty 69.sty 70.sty 71.sty 72.sty 73.sty
                      74.sty 75.sty 76.sty 77.sty 78.sty 79.sty 80.sty 81.sty
                      82.sty 83.sty 84.sty 85.sty 86.sty 88.sty 90.sty 92.sty
                      93.sty 94.sty 96.sty 97.sty 98.sty 99.sty 100.sty 102.sty
                      103.sty 104.sty 105.sty 106.sty 107.sty 108.sty 109.sty
                      110.sty 111.sty 112.sty 113.sty 114.sty 115.sty 116.sty
                      117.sty 118.sty 119.sty 120.sty 121.sty 122.sty 123.sty
                      124.sty 125.sty 127.sty 128.sty 129.sty 130.sty 131.sty
                      132.sty 133.sty 134.sty 136.sty 137.sty 139.sty 140.sty
                      142.sty 143.sty 144.sty 145.sty 146.sty 147.sty
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
------------------------------------------------------------------------------

Contrasts of predictive margins
Model VCE    : Robust

Expression   : Linear prediction, predict()

1._at        : (asobserved)

2._at        : x2              = x

------------------------------------------------
             |         df        chi2     P>chi2
-------------+----------------------------------
         _at |          1        4.48     0.0344
------------------------------------------------

------------------------------------------------------------------
             |            Delta-method
             |   Contrast   Std. Err.     [95% Conf. Interval]
-------------+----------------------------------------------------
         _at |
   (2 vs 1)  |    .093869    .044373      .0068995    .1808386
------------------------------------------------------------------
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      4.95
                                                      Prob > F      =    0.0313
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0615
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0615
Residual SS             =   230.616456                Root MSE      =     .2436

------------------------------------------------------------------------------
             |               Robust
```

```
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |   .0434332   .0195305     2.22   0.031     .0040721    .0827943
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.779
                                                   Chi-sq(4) P-val =    0.0006
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               17.596
                         (Kleibergen-Paap rk Wald F statistic):         12.961
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.149
                                                   Chi-sq(3) P-val =    0.2459
------------------------------------------------------------------------------
Instrumented:         x
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(option xb assumed; fitted values)
(16 missing values generated)
(197 real changes made)
(535 real changes made)
(0 real changes made)
(633 real changes made)
(203 real changes made)
(616 real changes made)
(0 real changes made)
(696 real changes made)
(201 real changes made)
(604 real changes made)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                  Number of obs =      3889
                                                        F(131,    44) =      0.01
                                                        Prob > F      =    1.0000
Total (centered) SS     =  227.8164052                  Centered R2   =   -0.0123
Total (uncentered) SS   =         3646                  Uncentered R2 =    0.9367
Residual SS             =   230.616456                  Root MSE      =     .2478

------------------------------------------------------------------------------
```

y	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
x2	.0434332	.0198655	2.19	0.034	.0033969	.0834695
sty						
2	.0337071	.0080384	4.19	0.000	.0175067	.0499075
3	-.0003635	.0144934	-0.03	0.980	-.029573	.028846
4	.0794538	.0128852	6.17	0.000	.0534853	.1054223
5	.0178937	.0152209	1.18	0.246	-.012782	.0485694
6	.0020243	.0079625	0.25	0.801	-.0140231	.0180717
7	-.0018921	.0052633	-0.36	0.721	-.0124997	.0087154
8	-.1241611	.0040142	-30.93	0.000	-.1322511	-.116071
9	.0562356	.0022656	24.82	0.000	.0516695	.0608017
10	-.198412	.0227291	-8.73	0.000	-.2442196	-.1526045
12	-.0330937	.0108718	-3.04	0.004	-.0550043	-.011183
13	-.0049931	.0145836	-0.34	0.734	-.0343844	.0243981
15	-.0298378	.0044326	-6.73	0.000	-.0387711	-.0209045
16	-.0202084	.0011549	-17.50	0.000	-.0225359	-.0178809
18	-.0943062	.0223266	-4.22	0.000	-.1393026	-.0493098
20	-.0491076	.0001782	-275.54	0.000	-.0494668	-.0487484
21	-.0400429	.0156342	-2.56	0.014	-.0715517	-.0085342
22	.0045895	.0019004	2.42	0.020	.0007595	.0084195
23	-.0241007	.0057709	-4.18	0.000	-.0357312	-.0124702
24	-.0245581	.0163926	-1.50	0.141	-.0575953	.008479
25	.0337853	.0144915	2.33	0.024	.0045797	.0629909
26	.041546	.0143434	2.90	0.006	.0126388	.0704532
27	.0652966	.0135566	4.82	0.000	.0379751	.0926181
28	.0074987	.0126444	0.59	0.556	-.0179844	.0329818
29	.0368876	.0077094	4.78	0.000	.0213503	.0524248
30	.0398451	.005231	7.62	0.000	.0293026	.0503876
31	-.0164658	.0035437	-4.65	0.000	-.0236078	-.0093239
32	.012424	.0045383	2.74	0.009	.0032776	.0215703
33	.0175704	.0011259	15.61	0.000	.0153013	.0198395
34	.0422482	.0075958	5.56	0.000	.0269399	.0575566
35	-.0687757	.0154542	-4.45	0.000	-.0999215	-.0376298
36	-.0326159	.0110733	-2.95	0.005	-.0549326	-.0102992
37	.0767382	.0116431	6.59	0.000	.0532729	.1002034
38	.0211549	.0080004	2.64	0.011	.005031	.0372787
39	-.0128922	.0012056	-10.69	0.000	-.0153219	-.0104626
40	-.0014451	.0148097	-0.10	0.923	-.031292	.0284018
42	-.0769646	.0078375	-9.82	0.000	-.0927601	-.0611692
44	-.0316432	.001501	-21.08	0.000	-.0346682	-.0286182
45	.0057108	.0207367	0.28	0.784	-.0360812	.0475028
46	.0681355	.0077085	8.84	0.000	.0526001	.0836709
47	-.0147446	.0301993	-0.49	0.628	-.0756074	.0461182
48	.0115784	.005913	1.96	0.057	-.0003384	.0234953
49	.0298418	.0098064	3.04	0.004	.0100784	.0496052
50	-.4379532	.0049236	-88.95	0.000	-.447876	-.4280303
51	-.1214729	.0136747	-8.88	0.000	-.1490324	-.0939134
52	.0139321	.0170831	0.82	0.419	-.0204967	.048361
53	-.0237752	.0016597	-14.32	0.000	-.0271201	-.0204303
54	.0268292	.0064073	4.19	0.000	.0139161	.0397424
55	-.0065555	.0160588	-0.41	0.685	-.0389198	.0258088
56	-.0324151	.0137789	-2.35	0.023	-.0601847	-.0046455
57	.018159	.0121565	1.49	0.142	-.0063408	.0426587
58	-.1475918	.0194412	-7.59	0.000	-.1867729	-.1084106
60	-.0169891	.0113211	-1.50	0.141	-.0398054	.0058271
61	-.0288166	.0112255	-2.57	0.014	-.0514401	-.006193
62	.0521247	.0088554	5.89	0.000	.0342777	.0699716
63	.0337445	.0178681	1.89	0.066	-.0022664	.0697553
64	.0790454	.0211684	3.73	0.001	.0363832	.1217076
65	.0449119	.0029136	15.41	0.000	.0390399	.0507838
66	.0227873	.0138718	1.64	0.108	-.0051695	.0507441
67	.1009577	.0227207	4.44	0.000	.0551671	.1467483

68	-.0306394	.0015963	-19.19	0.000	-.0338565	-.0274223
69	-.020379	.0141345	-1.44	0.156	-.0488652	.0081072
70	-.069299	.0020211	-34.29	0.000	-.0733723	-.0652257
71	-.1322942	.0002901	-455.99	0.000	-.1328789	-.1317094
72	-.0014854	.0119742	-0.12	0.902	-.0256178	.0226471
73	.0872328	.0164432	5.31	0.000	.0540937	.1203718
74	.0819747	.0140382	5.84	0.000	.0536825	.1102669
75	.076033	.0113206	6.72	0.000	.0532178	.0988481
76	.0780692	.0122519	6.37	0.000	.053377	.1027614
77	.0447957	.0029667	15.10	0.000	.0388166	.0507748
78	.0465212	.0021775	21.36	0.000	.0421327	.0509097
79	.0875775	.0166008	5.28	0.000	.0541207	.1210343
80	-.5657089	.0227207	-24.90	0.000	-.6114995	-.5199183
81	-.2323756	.0227207	-10.23	0.000	-.2781662	-.186585
82	.1009577	.0227207	4.44	0.000	.0551671	.1467483
83	.0760933	.0113482	6.71	0.000	.0532225	.0989641
84	.1009577	.0227207	4.44	0.000	.0551671	.1467483
85	.0727854	.0098352	7.40	0.000	.0529638	.092607
86	.0074525	.0200468	0.37	0.712	-.0329492	.0478542
88	-.0225722	.02003	-1.13	0.266	-.06294	.0177957
90	-.0368917	.0054091	-6.82	0.000	-.047793	-.0259903
92	-.1097681	.003295	-33.31	0.000	-.1164087	-.1031275
93	-.0273698	.0097643	-2.80	0.008	-.0470483	-.0076912
94	-.0990423	.0227207	-4.36	0.000	-.1448329	-.0532517
96	-.0656065	.0169037	-3.88	0.000	-.0996737	-.0315394
97	.1009577	.0227207	4.44	0.000	.0551671	.1467483
98	.1009577	.0227207	4.44	0.000	.0551671	.1467483
99	.0523138	.0004719	110.86	0.000	.0513627	.0532648
100	.0487502	.001158	42.10	0.000	.0464164	.051084
102	-.0004156	.0075971	-0.05	0.957	-.0157264	.0148953
103	.0092721	.0036545	2.54	0.015	.0019069	.0166373
104	-.0542501	.0217535	-2.49	0.016	-.0980915	-.0104087
105	-.0657089	.0227207	-2.89	0.006	-.1114995	-.0199183
106	.0734682	.0101475	7.24	0.000	.0530172	.0939192
107	-.1147514	.0037225	-30.83	0.000	-.1222535	-.1072492
108	-.0077127	.0000783	-98.49	0.000	-.0078705	-.0075549
109	-.0278055	.0209995	-1.32	0.192	-.0701272	.0145163
110	.0820377	.0140671	5.83	0.000	.0536874	.110388
111	-.1592856	.0053306	-29.88	0.000	-.1700287	-.1485424
112	.0530919	.0008278	64.14	0.000	.0514236	.0547602
113	.1009577	.0227207	4.44	0.000	.0551671	.1467483
114	.1009577	.0227207	4.44	0.000	.0551671	.1467483
115	.0949715	.0199827	4.75	0.000	.054699	.1352439
116	.0345037	.0075719	4.56	0.000	.0192435	.049764
117	.035506	.0072157	4.92	0.000	.0209638	.0500482
118	.0010317	.0086904	0.12	0.906	-.0164827	.018546
119	.0482638	.0013805	34.96	0.000	.0454815	.051046
120	-.008781	.0274717	-0.32	0.751	-.0641467	.0465846
121	-.0429893	.0004422	-97.23	0.000	-.0438804	-.0420982
122	-.0270027	.0150142	-1.80	0.079	-.0572617	.0032564
123	-.1024372	.0093241	-10.99	0.000	-.1212287	-.0836456
124	-.1144375	.0161386	-7.09	0.000	-.1469626	-.0819123
125	.0078213	.0123318	0.63	0.529	-.0170318	.0326744
127	.0146232	.010458	1.40	0.169	-.0064535	.0357
128	.0171976	.0035532	4.84	0.000	.0100366	.0243587
129	-.0870346	.0022793	-38.19	0.000	-.0916281	-.082441
130	.0634468	.0055639	11.40	0.000	.0522334	.0746601
131	-.0576044	.0024695	-23.33	0.000	-.0625814	-.0526275
132	-.0343417	.0136121	-2.52	0.015	-.061775	-.0069084
133	.0053146	.003048	1.74	0.088	-.0008283	.0114575
134	.0927471	.0189653	4.89	0.000	.054525	.1309693
136	-.0775867	.008122	-9.55	0.000	-.0939556	-.0612179
137	.0436464	.0034924	12.50	0.000	.036608	.0506849
139	-.0361191	.0002033	-177.63	0.000	-.0365289	-.0357092
140	-.0660788	.0536786	-1.23	0.225	-.174261	.0421034

```
        142  |  -.0103107   .0154663    -0.67   0.508    -.0414811    .0208596
        143  |   .0410488   .0059563     6.89   0.000     .0290447    .0530529
        144  |  -.2906339   .0099345   -29.25   0.000    -.3106556   -.2706122
        145  |  -.0101534   .0227207    -0.45   0.657     -.055944    .0356372
        146  |   .0436318   .0034991    12.47   0.000     .0365799    .0506837
        147  |  -.0280089    .001083   -25.86   0.000    -.0301916   -.0258262
             |
       _cons |   .8990423   .0227207    39.57   0.000     .8532517    .9448329
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.779
                                                    Chi-sq(4) P-val =    0.0006
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               17.007
                         (Kleibergen-Paap rk Wald F statistic):         12.527
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Warning: estimated covariance matrix of moment conditions not of full rank.
         overidentification statistic not reported, and standard errors and
         model tests should be interpreted with caution.
Possible causes:
         number of clusters insufficient to calculate robust covariance matrix
         singleton dummy variable (dummy with one 1 and N-1 0s or vice versa)
partial option may address problem.
------------------------------------------------------------------------------
Instrumented:         x2
Included instruments: 2.sty 3.sty 4.sty 5.sty 6.sty 7.sty 8.sty 9.sty 10.sty
                      12.sty 13.sty 15.sty 16.sty 18.sty 20.sty 21.sty 22.sty
                      23.sty 24.sty 25.sty 26.sty 27.sty 28.sty 29.sty 30.sty
                      31.sty 32.sty 33.sty 34.sty 35.sty 36.sty 37.sty 38.sty
                      39.sty 40.sty 42.sty 44.sty 45.sty 46.sty 47.sty 48.sty
                      49.sty 50.sty 51.sty 52.sty 53.sty 54.sty 55.sty 56.sty
                      57.sty 58.sty 60.sty 61.sty 62.sty 63.sty 64.sty 65.sty
                      66.sty 67.sty 68.sty 69.sty 70.sty 71.sty 72.sty 73.sty
                      74.sty 75.sty 76.sty 77.sty 78.sty 79.sty 80.sty 81.sty
                      82.sty 83.sty 84.sty 85.sty 86.sty 88.sty 90.sty 92.sty
                      93.sty 94.sty 96.sty 97.sty 98.sty 99.sty 100.sty 102.sty
                      103.sty 104.sty 105.sty 106.sty 107.sty 108.sty 109.sty
                      110.sty 111.sty 112.sty 113.sty 114.sty 115.sty 116.sty
                      117.sty 118.sty 119.sty 120.sty 121.sty 122.sty 123.sty
                      124.sty 125.sty 127.sty 128.sty 129.sty 130.sty 131.sty
                      132.sty 133.sty 134.sty 136.sty 137.sty 139.sty 140.sty
                      142.sty 143.sty 144.sty 145.sty 146.sty 147.sty
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
------------------------------------------------------------------------------

Contrasts of predictive margins
Model VCE    : Robust

Expression   : Linear prediction, predict()

1._at        : (asobserved)

2._at        : x2              = x

----------------------------------------------
             |         df        chi2     P>chi2
```

```
-------------+----------------------------------
         _at |          1        4.78     0.0288
-------------------------------------------------

------------------------------------------------------------------
             |            Delta-method
             |   Contrast   Std. Err.     [95% Conf. Interval]
-------------+----------------------------------------------------
         _at |
   (2 vs 1)  |   .0373665   .0170907      .0038693    .0708637
------------------------------------------------------------------

.
. * From no transfer to 25th percentile
. foreach var in "TVtotS" "TQtotS" {
  2.         capture drop x* inst*
  3.         gen x=Llnsum4`var'
  4.         capture drop x2
  5.         gen x2=Llnsum4`var'
  6.         gen inst=LlnTOTsum4`var'
  7.         quietly: ivreghdfe y (x = c.inst#(c.dD1 c.dD6 c.lnland c.HIDTA)),
absorb(state year) cluster(sta
> te)
  8.         * Calculate percentiles by year
.         predict p if e(sample)
  9.         forvalues i=2007(1)2016 {
 10.                 quietly: sum x if e(sample) & x>0 & year==`i', detail
 11.                 replace x=r(p25) if year==`i'
 12.         }
 13.
.         * Significance, using margins & contrast with the need of ivreg2
.         ivreg2 y (x2 = c.inst#(c.dD1 c.dD6 c.lnland c.HIDTA)) i.st i.year if
year>2006 & p~=., cluster(stat
> e) small
 14.         margins if x2==0,  at((asobserved) _all) at(x2=generate(x))
contrast(atcontrast(r._at))
 15.         drop p
 16. }
(option xb assumed; fitted values)
(200 real changes made)
(550 real changes made)
(0 real changes made)
(647 real changes made)
(207 real changes made)
(656 real changes made)
(0 real changes made)
(758 real changes made)
(215 real changes made)
(654 real changes made)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F( 52,    44) =      4.22
                                                      Prob > F      =    0.0000
Total (centered) SS     =  229.6286812                Centered R2   =   -0.0653
Total (uncentered) SS   =         3660                Uncentered R2 =    0.9332
Residual SS             =  244.6282826                Root MSE      =      .252

------------------------------------------------------------------------------
             |               Robust
```

y	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
x2	.0155198	.006583	2.36	0.023	.0022526	.0287871
st						
2	.0001346	.020641	0.01	0.995	-.0414646	.0417338
3	-.1165371	.0267652	-4.35	0.000	-.1704788	-.0625955
4	-.0287937	.0013951	-20.64	0.000	-.0316054	-.025982
5	-.0274332	.0069585	-3.94	0.000	-.0414571	-.0134094
6	-.0578946	.0261277	-2.22	0.032	-.1105515	-.0052376
7	-.0039619	.0295847	-0.13	0.894	-.0635859	.0556622
8	.0571225	.0391676	1.46	0.152	-.0218146	.1360596
9	.0342348	.0322123	1.06	0.294	-.0306847	.0991544
10	-.0032744	.0106853	-0.31	0.761	-.0248092	.0182604
11	.0289855	.01323	2.19	0.034	.0023223	.0556487
12	.0086481	.0390073	0.22	0.826	-.0699659	.0872621
13	-.0241898	.0047877	-5.05	0.000	-.0338387	-.0145408
14	-.0873518	.0424338	-2.06	0.045	-.1728714	-.0018321
15	.0482174	.0382101	1.26	0.214	-.02879	.1252249
16	.0083187	.0038972	2.13	0.038	.0004644	.016173
17	-.0563452	.0048126	-11.71	0.000	-.0660443	-.0466461
18	.0188131	.0308923	0.61	0.546	-.0434462	.0810724
19	-.0092725	.0091878	-1.01	0.318	-.0277893	.0092443
20	-.0513793	.0323439	-1.59	0.119	-.1165642	.0138056
21	.0139934	.0496915	0.28	0.780	-.0861533	.1141401
22	.0436829	.0193113	2.26	0.029	.0047636	.0826022
23	-.027746	.0168233	-1.65	0.106	-.0616511	.006159
24	-.1077862	.011877	-9.08	0.000	-.1317227	-.0838497
25	.0575894	.0276139	2.09	0.043	.0019374	.1132415
26	.0710021	.0240028	2.96	0.005	.0226277	.1193765
27	-.0263517	.0344122	-0.77	0.448	-.095705	.0430015
28	-.0482438	.0249673	-1.93	0.060	-.0985622	.0020746
29	-.0652843	.0163722	-3.99	0.000	-.0982803	-.0322884
30	-.0154578	.0231633	-0.67	0.508	-.0621403	.0312248
31	-.0159539	.0266007	-0.60	0.552	-.069564	.0376562
32	-.0490656	.031848	-1.54	0.131	-.1132511	.0151199
33	.0078226	.0277021	0.28	0.779	-.0480073	.0636524
34	.0627336	.0538152	1.17	0.250	-.0457239	.1711911
35	.0123513	.0234748	0.53	0.601	-.0349591	.0596617
36	-.0357505	.0171267	-2.09	0.043	-.070267	-.001234
37	-.1101184	.0022155	-49.70	0.000	-.1145835	-.1056533
38	.0286392	.0355007	0.81	0.424	-.0429077	.1001861
39	-.0036137	.0111225	-0.32	0.747	-.0260297	.0188022
40	-.0784378	.0440701	-1.78	0.082	-.1672553	.0103797
41	.0837909	.026059	3.22	0.002	.0312724	.1363095
42	-.0704627	.0059716	-11.80	0.000	-.0824976	-.0584278
43	.0253627	.010474	2.42	0.020	.0042538	.0464716
44	-.1011795	.0498598	-2.03	0.049	-.2016652	-.0006938
45	.0131788	.0114701	1.15	0.257	-.0099377	.0362953
year						
2008	-.0643061	.0439531	-1.46	0.151	-.1528878	.0242756
2010	-.0553425	.0425228	-1.30	0.200	-.1410417	.0303566
2011	-.007563	.0216295	-0.35	0.728	-.0511543	.0360283
2012	-.0531311	.0415154	-1.28	0.207	-.1367998	.0305377
2014	-.0493079	.0412954	-1.19	0.239	-.1325334	.0339176
2015	.0015603	.0242622	0.06	0.949	-.047337	.0504576
2016	-.0569739	.0459753	-1.24	0.222	-.149631	.0356832
_cons	.9335005	.0543698	17.17	0.000	.8239254	1.043076

Underidentification test (Kleibergen-Paap rk LM statistic): 17.261
Chi-sq(4) P-val = 0.0017

Weak identification test (Cragg-Donald Wald F statistic): 12.333

```
                          (Kleibergen-Paap rk Wald F statistic):         11.411
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Warning: estimated covariance matrix of moment conditions not of full rank.
         overidentification statistic not reported, and standard errors and
         model tests should be interpreted with caution.
Possible causes:
         number of clusters insufficient to calculate robust covariance matrix
         singleton dummy variable (dummy with one 1 and N-1 0s or vice versa)
partial option may address problem.
------------------------------------------------------------------------------
Instrumented:         x2
Included instruments: 2.st 3.st 4.st 5.st 6.st 7.st 8.st 9.st 10.st 11.st 12.st
                      13.st 14.st 15.st 16.st 17.st 18.st 19.st 20.st 21.st
                      22.st 23.st 24.st 25.st 26.st 27.st 28.st 29.st 30.st
                      31.st 32.st 33.st 34.st 35.st 36.st 37.st 38.st 39.st
                      40.st 41.st 42.st 43.st 44.st 45.st 2008.year 2010.year
                      2011.year 2012.year 2014.year 2015.year 2016.year
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
------------------------------------------------------------------------------

Contrasts of predictive margins
Model VCE    : Robust

Expression   : Linear prediction, predict()

1._at        : (asobserved)

2._at        : x2              = x

------------------------------------------------
             |         df        chi2     P>chi2
-------------+----------------------------------
         _at |          1        5.56     0.0184
------------------------------------------------

------------------------------------------------------------
             |            Delta-method
             |   Contrast   Std. Err.     [95% Conf. Interval]
-------------+----------------------------------------------
         _at |
   (2 vs 1)  |   .1246742    .052883      .0210254     .228323
------------------------------------------------------------
(option xb assumed; fitted values)
(201 real changes made)
(535 real changes made)
(0 real changes made)
(613 real changes made)
(202 real changes made)
(635 real changes made)
(0 real changes made)
(722 real changes made)
(210 real changes made)
(640 real changes made)

IV (2SLS) estimation
```

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) = 45 Number of obs = 3905
F(52, 44) = 2.58
Prob > F = 0.0008
Total (centered) SS = 229.6286812 Centered R2 = -0.0446
Total (uncentered) SS = 3660 Uncentered R2 = 0.9345
Residual SS = 239.8677668 Root MSE = .2495

y	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
x2	.0464163	.0194353	2.39	0.021	.0072471	.0855855
st						
2	.0081802	.0233762	0.35	0.728	-.0389314	.0552919
3	-.1024609	.0272626	-3.76	0.001	-.1574051	-.0475167
4	-.0480369	.0084434	-5.69	0.000	-.0650536	-.0310203
5	-.040471	.0015397	-26.29	0.000	-.043574	-.037368
6	-.0665647	.027131	-2.45	0.018	-.1212436	-.0118859
7	-.022104	.028099	-0.79	0.436	-.0787338	.0345258
8	.0420548	.0358609	1.17	0.247	-.0302181	.1143278
9	.0225105	.0308706	0.73	0.470	-.039705	.0847261
10	-.0184607	.0041801	-4.42	0.000	-.0268852	-.0100362
11	.014483	.00703	2.06	0.045	.0003148	.0286511
12	-.0080063	.0352093	-0.23	0.821	-.078966	.0629533
13	-.026148	.0041031	-6.37	0.000	-.0344174	-.0178787
14	-.098332	.0440652	-2.23	0.031	-.1871395	-.0095245
15	.0305215	.0307626	0.99	0.327	-.0314763	.0925194
16	-.0193854	.0077549	-2.50	0.016	-.0350144	-.0037563
17	-.0687643	.006336	-10.85	0.000	-.0815336	-.055995
18	-.006686	.0280402	-0.24	0.813	-.0631973	.0498253
19	-.021907	.0038322	-5.72	0.000	-.0296303	-.0141836
20	-.0611787	.0312624	-1.96	0.057	-.1241838	.0018264
21	-.0060453	.0480181	-0.13	0.900	-.1028194	.0907288
22	.0236838	.0107064	2.21	0.032	.0021066	.0452611
23	-.041655	.0108598	-3.84	0.000	-.0635416	-.0197685
24	-.1263541	.0041367	-30.55	0.000	-.134691	-.1180172
25	.0341415	.0174931	1.95	0.057	-.0011136	.0693966
26	.0558435	.0199212	2.80	0.007	.015695	.0959919
27	-.0517002	.0275554	-1.88	0.067	-.1072345	.0038341
28	-.0632236	.0184837	-3.42	0.001	-.1004751	-.025972
29	-.0882646	.0065253	-13.53	0.000	-.1014154	-.0751138
30	-.0118832	.0248429	-0.48	0.635	-.0619508	.0381845
31	-.0253511	.0272715	-0.93	0.358	-.0803133	.0296111
32	-.0506018	.0323668	-1.56	0.125	-.1158328	.0146291
33	-.0081266	.0241235	-0.34	0.738	-.0567443	.0404912
34	.0398626	.0505203	0.79	0.434	-.0619543	.1416795
35	.0048935	.0242695	0.20	0.841	-.0440185	.0538056
36	-.0498015	.0110113	-4.52	0.000	-.0719933	-.0276097
37	-.1301417	.0101818	-12.78	0.000	-.1506617	-.1096217
38	.0078542	.0314735	0.25	0.804	-.0555765	.0712849
39	-.0168493	.0055243	-3.05	0.004	-.0279828	-.0057159
40	-.0905931	.0451811	-2.01	0.051	-.1816495	.0004633
41	.0685091	.0196894	3.48	0.001	.0288277	.1081906
42	-.0732577	.0067462	-10.86	0.000	-.0868538	-.0596617
43	-.0000107	.0006427	-0.02	0.987	-.001306	.0012847
44	-.124891	.0420358	-2.97	0.005	-.2096086	-.0401734
45	-.0105083	.0014547	-7.22	0.000	-.01344	-.0075767
year						

```
       2008  |  -.0652702    .049139    -1.33   0.191    -.1643033    .0337629
       2010  |  -.0561374   .0456993    -1.23   0.226    -.1482382    .0359635
       2011  |   -.009916   .0218423    -0.45   0.652    -.0539363    .0341043
       2012  |   -.047334   .0461101    -1.03   0.310    -.1402628    .0455949
       2014  |  -.0341878   .0448553    -0.76   0.450    -.1245877    .0562121
       2015  |   .0165014   .0217751     0.76   0.453    -.0273834    .0603862
       2016  |  -.0520187   .0486443    -1.07   0.291    -.1500549    .0460174
             |
       _cons |   .9569042    .051962    18.42   0.000     .8521817    1.061627
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             20.436
                                                    Chi-sq(4) P-val =    0.0004
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               18.325
                         (Kleibergen-Paap rk Wald F statistic):         13.146
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Warning: estimated covariance matrix of moment conditions not of full rank.
         overidentification statistic not reported, and standard errors and
         model tests should be interpreted with caution.
Possible causes:
         number of clusters insufficient to calculate robust covariance matrix
         singleton dummy variable (dummy with one 1 and N-1 0s or vice versa)
partial option may address problem.
------------------------------------------------------------------------------
Instrumented:         x2
Included instruments: 2.st 3.st 4.st 5.st 6.st 7.st 8.st 9.st 10.st 11.st 12.st
                      13.st 14.st 15.st 16.st 17.st 18.st 19.st 20.st 21.st
                      22.st 23.st 24.st 25.st 26.st 27.st 28.st 29.st 30.st
                      31.st 32.st 33.st 34.st 35.st 36.st 37.st 38.st 39.st
                      40.st 41.st 42.st 43.st 44.st 45.st 2008.year 2010.year
                      2011.year 2012.year 2014.year 2015.year 2016.year
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
------------------------------------------------------------------------------

Contrasts of predictive margins
Model VCE    : Robust

Expression   : Linear prediction, predict()

1._at        : (asobserved)

2._at        : x2              = x

------------------------------------------------
             |         df        chi2     P>chi2
-------------+----------------------------------
         _at |          1        5.70     0.0169
------------------------------------------------

------------------------------------------------------------
             |            Delta-method
             |   Contrast   Std. Err.     [95% Conf. Interval]
-------------+----------------------------------------------
         _at |
   (2 vs 1)  |   .0620511   .0259818      .0111277    .1129744
```

```
------------------------------------------------------------

.
. foreach var in "TVtotS" "TQtotS" {
  2.         capture drop x* inst*
  3.         gen x=Llnsum4`var'
  4.         capture drop x2
  5.         gen x2=x
  6.         gen inst=LlnTOTsum4`var'
  7.         ivreghdfe y (x = c.inst#(c.dD1 c.dD6 c.lnland c.HIDTA)), absorb(stateyear)
cluster(state)
  8.         * Calculate percentiles by year:
.         predict p if e(sample)
  9.         forvalues i=2007(1)2016 {
 10.                 quietly: sum x if e(sample) & x>0 & year==`i', detail
 11.                 replace x=r(p25) if year==`i'
 12.         }
 13.
.         * Significance, using margins & contrast with the need of ivreg2
.         ivreg2 y (x2 = c.inst#(c.dD1 c.dD6 c.lnland c.HIDTA)) i.sty if year>2006 &
p~=., cluster(state) sma
> ll
 14.         margins if x2==0,  at((asobserved) _all) at(x2=generate(x))
contrast(atcontrast(r._at))
 15.         drop p
 16. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                 Number of obs =      3889
                                                       F(  1,    44) =      4.63
                                                       Prob > F      =    0.0369
Total (centered) SS     =  217.2529263                 Centered R2   =   -0.0780
Total (uncentered) SS   =  217.2529263                 Uncentered R2 =   -0.0780
Residual SS             =  234.1987902                 Root MSE      =     .2455

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |   .0142259   .0066113     2.15   0.037     .0009016    .0275502
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             16.052
                                                   Chi-sq(4) P-val =    0.0029
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               11.574
                         (Kleibergen-Paap rk Wald F statistic):         10.276
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.186
```

```
                                                      Chi-sq(3) P-val =    0.2420
------------------------------------------------------------------------------
Instrumented:         x
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(option xb assumed; fitted values)
(16 missing values generated)
(200 real changes made)
(550 real changes made)
(0 real changes made)
(653 real changes made)
(208 real changes made)
(657 real changes made)
(0 real changes made)
(758 real changes made)
(215 real changes made)
(654 real changes made)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(131,    44) =      0.01
                                                      Prob > F      =    1.0000
Total (centered) SS     =  227.8164052                Centered R2   =   -0.0280
Total (uncentered) SS   =         3646                Uncentered R2 =    0.9358
Residual SS             =  234.1987902                Root MSE      =     .2497

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          x2 |   .0142259   .0067248     2.12   0.040      .000673    .0277788
             |
         sty |
           2 |    .009567   .0197192     0.49   0.630    -.0301745    .0493085
           3 |  -.0202501   .0055785    -3.63   0.001     -.031493   -.0090073
           4 |   .0649119    .006443    10.07   0.000     .0519269    .0778968
           5 |   .0194455   .0164646     1.18   0.244    -.0137368    .0526277
           6 |  -.0183465   .0014001   -13.10   0.000    -.0211683   -.0155247
           7 |  -.0314546   .0194143    -1.62   0.112    -.0705814    .0076723
           8 |  -.1220376    .003145   -38.80   0.000    -.1283759   -.1156994
           9 |   .0224851   .0136126     1.65   0.106    -.0049494    .0499196
          10 |  -.2349246   .0407509    -5.76   0.000    -.3170527   -.1527965
          12 |  -.0212408   .0056332    -3.77   0.000    -.0325937   -.0098878
          13 |  -.0054724    .015299    -0.36   0.722    -.0363055    .0253606
          15 |  -.0227866    .001248   -18.26   0.000    -.0253018   -.0202714
          16 |  -.0272248   .0045103    -6.04   0.000    -.0363147   -.0181349
          18 |  -.0808024   .0166916    -4.84   0.000     -.114442   -.0471627
          20 |  -.0491197   .0001899  -258.66   0.000    -.0495024    -.048737
```

21	-.0500998	.0209123	-2.40	0.021	-.0922458	-.0079538
22	.0138479	.0063406	2.18	0.034	.0010692	.0266265
23	-.0225878	.0066795	-3.38	0.002	-.0360494	-.0091262
24	-.0108308	.010453	-1.04	0.306	-.0318975	.0102359
25	.0419635	.0188431	2.23	0.031	.0039876	.0799393
26	.0522018	.0198613	2.63	0.012	.012174	.0922297
27	.0591823	.0111207	5.32	0.000	.0367701	.0815946
28	.0201013	.0190256	1.06	0.296	-.0182423	.0584449
29	.0272126	.0033943	8.02	0.000	.0203718	.0340535
30	.0441656	.0033641	13.13	0.000	.0373857	.0509454
31	-.0035682	.0024343	-1.47	0.150	-.0084743	.0013379
32	.0022841	.0001028	22.21	0.000	.0020768	.0024913
33	.0304579	.0049284	6.18	0.000	.0205253	.0403906
34	.0322047	.0031027	10.38	0.000	.0259516	.0384579
35	-.0606481	.0198142	-3.06	0.004	-.100581	-.0207153
36	-.0261643	.0144942	-1.81	0.078	-.0553754	.0030468
37	.0800551	.0136014	5.89	0.000	.0526433	.1074668
38	.0340915	.0143839	2.37	0.022	.0051026	.0630803
39	-.0357303	.0120418	-2.97	0.005	-.0599991	-.0114616
40	.0040986	.0179266	0.23	0.820	-.0320301	.0402273
42	-.0663297	.0030729	-21.59	0.000	-.0725228	-.0601366
44	-.0457556	.0051198	-8.94	0.000	-.056074	-.0354373
45	.0176599	.0270803	0.65	0.518	-.0369167	.0722366
46	.0722891	.0099303	7.28	0.000	.0522759	.0923023
47	.0135794	.0178225	0.76	0.450	-.0223394	.0494983
48	.0112261	.0059447	1.89	0.066	-.0007546	.0232068
49	.032262	.008991	3.59	0.001	.0141419	.0503822
50	-.4322359	.0077913	-55.48	0.000	-.4479382	-.4165336
51	-.125595	.0160816	-7.81	0.000	-.1580054	-.0931846
52	.0287679	.0106427	2.70	0.010	.0073189	.0502169
53	-.01156	.0040589	-2.85	0.007	-.0197403	-.0033798
54	.0336175	.009831	3.42	0.001	.0138044	.0534305
55	.0201217	.0039864	5.05	0.000	.0120875	.0281558
56	-.0277987	.0120586	-2.31	0.026	-.0521011	-.0034963
57	.0120868	.0096935	1.25	0.219	-.0074493	.0316228
58	-.1382207	.0245227	-5.64	0.000	-.1876429	-.0887984
60	-.0259016	.0074876	-3.46	0.001	-.0409918	-.0108114
61	-.0267387	.0106196	-2.52	0.016	-.0481411	-.0053364
62	.0578546	.0118609	4.88	0.000	.0339506	.0817586
63	.0415572	.0221602	1.88	0.067	-.0031038	.0862182
64	.0901519	.0271282	3.32	0.002	.0354786	.1448251
65	.0607855	.0044924	13.53	0.000	.0517317	.0698393
66	.0176851	.0119249	1.48	0.145	-.006348	.0417183
67	.1158424	.0305184	3.80	0.000	.0543365	.1773483
68	-.0268361	.0001481	-181.24	0.000	-.0271345	-.0265377
69	-.0249326	.0124557	-2.00	0.052	-.0500354	.0001703
70	-.064168	.0045144	-14.21	0.000	-.0732661	-.0550699
71	-.1302961	.0012444	-104.71	0.000	-.1328039	-.1277882
72	.0043412	.0151299	0.29	0.776	-.026151	.0348334
73	.0961107	.021191	4.54	0.000	.053403	.1388184
74	.0929839	.019713	4.72	0.000	.053255	.1327127
75	.0798749	.0135162	5.91	0.000	.0526348	.1071149
76	.0786668	.0129451	6.08	0.000	.0525777	.1047559
77	.0406489	.0050264	8.09	0.000	.0305187	.050779
78	.054024	.0012962	41.68	0.000	.0514118	.0566363
79	.1017417	.0238529	4.27	0.000	.0536694	.149814
80	-.5508243	.0305184	-18.05	0.000	-.6123302	-.4893184
81	-.217491	.0305184	-7.13	0.000	-.2789968	-.1559851
82	.1158424	.0305184	3.80	0.000	.0543365	.1773483
83	.0749367	.0111819	6.70	0.000	.0524012	.0974723
84	.1158424	.0305184	3.80	0.000	.0543365	.1773483
85	.0558489	.0021588	25.87	0.000	.0514981	.0601997
86	.0399219	.0053701	7.43	0.000	.0290991	.0507446
88	-.0160248	.0237964	-0.67	0.504	-.0639833	.0319338
90	-.0388644	.0046579	-8.34	0.000	-.0482518	-.029477

```
          92  |  -.0960358    .003086   -31.12   0.000    -.1022552   -.0898164
          93  |  -.0227041   .0122971    -1.85   0.072    -.0474872     .002079
          94  |  -.0841576   .0305184    -2.76   0.008    -.1456635   -.0226517
          96  |  -.0525831   .0236266    -2.23   0.031    -.1001994   -.0049668
          97  |   .1158424   .0305184     3.80   0.000     .0543365    .1773483
          98  |   .1158424   .0305184     3.80   0.000     .0543365    .1773483
          99  |  -.0060347   .0270943    -0.22   0.825    -.0606396    .0485703
         100  |   .0080256   .0204478     0.39   0.697    -.0331843    .0492355
         102  |   .0054642   .0050723     1.08   0.287    -.0047583    .0156867
         103  |    .009297   .0037888     2.45   0.018     .0016612    .0169327
         104  |  -.0582033   .0243514    -2.39   0.021    -.1072804   -.0091262
         105  |  -.0508243   .0305184    -1.67   0.103    -.1123302    .0106816
         106  |   .0594741   .0038725    15.36   0.000     .0516696    .0672786
         107  |  -.1265307   .0094155   -13.44   0.000    -.1455063    -.107555
         108  |  -.0039943   .0016768    -2.38   0.022    -.0073737   -.0006149
         109  |  -.0179323   .0263706    -0.68   0.500    -.0710787    .0352141
         110  |   .0778856   .0125758     6.19   0.000     .0525407    .1032304
         111  |  -.1481057   .0107941   -13.72   0.000    -.1698598   -.1263516
         112  |   .0611592   .0046691    13.10   0.000     .0517494    .0705691
         113  |   .1158424   .0305184     3.80   0.000     .0543365    .1773483
         114  |   .1158424   .0305184     3.80   0.000     .0543365    .1773483
         115  |   .0973223   .0217638     4.47   0.000     .0534603    .1411844
         116  |   .0311333   .0062325     5.00   0.000     .0185725    .0436942
         117  |   .0342875   .0080335     4.27   0.000     .0180969     .050478
         118  |   .0027894   .0081508     0.34   0.734    -.0136375    .0192163
         119  |    .060528   .0043707    13.85   0.000     .0517195    .0693366
         120  |   -.016973    .032265    -0.53   0.601    -.0819988    .0480528
         121  |  -.0445997   .0003043  -146.58   0.000    -.0452129   -.0439865
         122  |  -.0229538   .0174314    -1.32   0.195    -.0580844    .0121768
         123  |  -.0891934   .0033762   -26.42   0.000    -.0959976   -.0823892
         124  |  -.1143189   .0166235    -6.88   0.000    -.1478214   -.0808165
         125  |   .0196744   .0183483     1.07   0.289    -.0173041    .0566529
         127  |    .025029   .0157275     1.59   0.119    -.0066677    .0567257
         128  |   .0251683   .0000955   263.52   0.000     .0249758    .0253608
         129  |   -.068932   .0062017   -11.12   0.000    -.0814306   -.0564333
         130  |    .048279   .0014196    34.01   0.000      .045418      .05114
         131  |  -.0496835   .0062966    -7.89   0.000    -.0623735   -.0369936
         132  |  -.0259243   .0180473    -1.44   0.158    -.0622963    .0104477
         133  |  -.0064921    .002431    -2.67   0.011    -.0113914   -.0015928
         134  |   .0864952   .0166457     5.20   0.000      .052948    .1200423
         136  |  -.0686611    .004175   -16.45   0.000    -.0770752   -.0602469
         137  |   .0305786   .0097868     3.12   0.003     .0108546    .0503025
         139  |  -.0657149   .0142005    -4.63   0.000     -.094334   -.0370957
         140  |  -.0589857   .0521249    -1.13   0.264    -.1640365    .0460651
         142  |    .000668    .010795     0.06   0.951    -.0210879    .0224239
         143  |   .0514465    .011071     4.65   0.000     .0291343    .0737587
         144  |   -.287181   .0118997   -24.13   0.000    -.3111633   -.2631986
         145  |   .0047313   .0305184     0.16   0.878    -.0567746    .0662371
         146  |   .0615556   .0048564    12.68   0.000     .0517681    .0713431
         147  |   -.026474   .0003938   -67.23   0.000    -.0272676   -.0256804
              |
       _cons  |   .8841576   .0305184    28.97   0.000     .8226517    .9456635
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             16.052
                                                   Chi-sq(4) P-val =    0.0029
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               11.187
                         (Kleibergen-Paap rk Wald F statistic):          9.932
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
```

```
                                        25% maximal IV size             8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Warning: estimated covariance matrix of moment conditions not of full rank.
         overidentification statistic not reported, and standard errors and
         model tests should be interpreted with caution.
Possible causes:
         number of clusters insufficient to calculate robust covariance matrix
         singleton dummy variable (dummy with one 1 and N-1 0s or vice versa)
partial option may address problem.
------------------------------------------------------------------------------
Instrumented:         x2
Included instruments: 2.sty 3.sty 4.sty 5.sty 6.sty 7.sty 8.sty 9.sty 10.sty
                      12.sty 13.sty 15.sty 16.sty 18.sty 20.sty 21.sty 22.sty
                      23.sty 24.sty 25.sty 26.sty 27.sty 28.sty 29.sty 30.sty
                      31.sty 32.sty 33.sty 34.sty 35.sty 36.sty 37.sty 38.sty
                      39.sty 40.sty 42.sty 44.sty 45.sty 46.sty 47.sty 48.sty
                      49.sty 50.sty 51.sty 52.sty 53.sty 54.sty 55.sty 56.sty
                      57.sty 58.sty 60.sty 61.sty 62.sty 63.sty 64.sty 65.sty
                      66.sty 67.sty 68.sty 69.sty 70.sty 71.sty 72.sty 73.sty
                      74.sty 75.sty 76.sty 77.sty 78.sty 79.sty 80.sty 81.sty
                      82.sty 83.sty 84.sty 85.sty 86.sty 88.sty 90.sty 92.sty
                      93.sty 94.sty 96.sty 97.sty 98.sty 99.sty 100.sty 102.sty
                      103.sty 104.sty 105.sty 106.sty 107.sty 108.sty 109.sty
                      110.sty 111.sty 112.sty 113.sty 114.sty 115.sty 116.sty
                      117.sty 118.sty 119.sty 120.sty 121.sty 122.sty 123.sty
                      124.sty 125.sty 127.sty 128.sty 129.sty 130.sty 131.sty
                      132.sty 133.sty 134.sty 136.sty 137.sty 139.sty 140.sty
                      142.sty 143.sty 144.sty 145.sty 146.sty 147.sty
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
------------------------------------------------------------------------------

Contrasts of predictive margins
Model VCE    : Robust

Expression   : Linear prediction, predict()

1._at        : (asobserved)

2._at        : x2              = x

-------------------------------------------------
             |         df        chi2     P>chi2
-------------+-----------------------------------
         _at |          1        4.48     0.0344
-------------------------------------------------

------------------------------------------------------------------
             |            Delta-method
             |   Contrast   Std. Err.     [95% Conf. Interval]
-------------+----------------------------------------------------
         _at |
   (2 vs 1)  |   .1142311   .0539984      .0083961    .2200661
------------------------------------------------------------------
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =     3889
```

```
                                                      F(  1,    44) =     4.95
                                                      Prob > F      =   0.0313
Total (centered) SS     =  217.2529263                Centered R2   =  -0.0615
Total (uncentered) SS   =  217.2529263                Uncentered R2 =  -0.0615
Residual SS             =   230.616456                Root MSE      =    .2436

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |   .0434332   .0195305     2.22   0.031     .0040721    .0827943
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.779
                                                      Chi-sq(4) P-val =    0.0006
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               17.596
                         (Kleibergen-Paap rk Wald F statistic):         12.961
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.149
                                                      Chi-sq(3) P-val =    0.2459
------------------------------------------------------------------------------
Instrumented:         x
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(option xb assumed; fitted values)
(16 missing values generated)
(201 real changes made)
(535 real changes made)
(0 real changes made)
(613 real changes made)
(202 real changes made)
(635 real changes made)
(0 real changes made)
(722 real changes made)
(210 real changes made)
(640 real changes made)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state
```

```
Number of clusters (state) =        45                  Number of obs =      3889
                                                        F(131,    44) =      0.01
                                                        Prob > F      =    1.0000
Total (centered) SS     =  227.8164052                  Centered R2   =   -0.0123
Total (uncentered) SS   =         3646                  Uncentered R2 =    0.9367
Residual SS             =   230.616456                  Root MSE      =     .2478

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          x2 |   .0434332   .0198655     2.19   0.034     .0033969    .0834695
             |
         sty |
           2 |   .0337071   .0080384     4.19   0.000     .0175067    .0499075
           3 |  -.0003635   .0144934    -0.03   0.980     -.029573     .028846
           4 |   .0794538   .0128852     6.17   0.000     .0534853    .1054223
           5 |   .0178937   .0152209     1.18   0.246     -.012782    .0485694
           6 |   .0020243   .0079625     0.25   0.801    -.0140231    .0180717
           7 |  -.0018921   .0052633    -0.36   0.721    -.0124997    .0087154
           8 |  -.1241611   .0040142   -30.93   0.000    -.1322511    -.116071
           9 |   .0562356   .0022656    24.82   0.000     .0516695    .0608017
          10 |   -.198412   .0227291    -8.73   0.000    -.2442196   -.1526045
          12 |  -.0330937   .0108718    -3.04   0.004    -.0550043    -.011183
          13 |  -.0049931   .0145836    -0.34   0.734    -.0343844    .0243981
          15 |  -.0298378   .0044326    -6.73   0.000    -.0387711   -.0209045
          16 |  -.0202084   .0011549   -17.50   0.000    -.0225359   -.0178809
          18 |  -.0943062   .0223266    -4.22   0.000    -.1393026   -.0493098
          20 |  -.0491076   .0001782  -275.54   0.000    -.0494668   -.0487484
          21 |  -.0400429   .0156342    -2.56   0.014    -.0715517   -.0085342
          22 |   .0045895   .0019004     2.42   0.020     .0007595    .0084195
          23 |  -.0241007   .0057709    -4.18   0.000    -.0357312   -.0124702
          24 |  -.0245581   .0163926    -1.50   0.141    -.0575953     .008479
          25 |   .0337853   .0144915     2.33   0.024     .0045797    .0629909
          26 |    .041546   .0143434     2.90   0.006     .0126388    .0704532
          27 |   .0652966   .0135566     4.82   0.000     .0379751    .0926181
          28 |   .0074987   .0126444     0.59   0.556    -.0179844    .0329818
          29 |   .0368876   .0077094     4.78   0.000     .0213503    .0524248
          30 |   .0398451    .005231     7.62   0.000     .0293026    .0503876
          31 |  -.0164658   .0035437    -4.65   0.000    -.0236078   -.0093239
          32 |    .012424   .0045383     2.74   0.009     .0032776    .0215703
          33 |   .0175704   .0011259    15.61   0.000     .0153013    .0198395
          34 |   .0422482   .0075958     5.56   0.000     .0269399    .0575566
          35 |  -.0687757   .0154542    -4.45   0.000    -.0999215   -.0376298
          36 |  -.0326159   .0110733    -2.95   0.005    -.0549326   -.0102992
          37 |   .0767382   .0116431     6.59   0.000     .0532729    .1002034
          38 |   .0211549   .0080004     2.64   0.011      .005031    .0372787
          39 |  -.0128922   .0012056   -10.69   0.000    -.0153219   -.0104626
          40 |  -.0014451   .0148097    -0.10   0.923     -.031292    .0284018
          42 |  -.0769646   .0078375    -9.82   0.000    -.0927601   -.0611692
          44 |  -.0316432    .001501   -21.08   0.000    -.0346682   -.0286182
          45 |   .0057108   .0207367     0.28   0.784    -.0360812    .0475028
          46 |   .0681355   .0077085     8.84   0.000     .0526001    .0836709
          47 |  -.0147446   .0301993    -0.49   0.628    -.0756074    .0461182
          48 |   .0115784    .005913     1.96   0.057    -.0003384    .0234953
          49 |   .0298418   .0098064     3.04   0.004     .0100784    .0496052
          50 |  -.4379532   .0049236   -88.95   0.000     -.447876   -.4280303
          51 |  -.1214729   .0136747    -8.88   0.000    -.1490324   -.0939134
          52 |   .0139321   .0170831     0.82   0.419    -.0204967     .048361
          53 |  -.0237752   .0016597   -14.32   0.000    -.0271201   -.0204303
          54 |   .0268292   .0064073     4.19   0.000     .0139161    .0397424
          55 |  -.0065555   .0160588    -0.41   0.685    -.0389198    .0258088
          56 |  -.0324151   .0137789    -2.35   0.023    -.0601847   -.0046455
          57 |    .018159   .0121565     1.49   0.142    -.0063408    .0426587
          58 |  -.1475918   .0194412    -7.59   0.000    -.1867729   -.1084106
```

60	-.0169891	.0113211	-1.50	0.141	-.0398054	.0058271
61	-.0288166	.0112255	-2.57	0.014	-.0514401	-.006193
62	.0521247	.0088554	5.89	0.000	.0342777	.0699716
63	.0337445	.0178681	1.89	0.066	-.0022664	.0697553
64	.0790454	.0211684	3.73	0.001	.0363832	.1217076
65	.0449119	.0029136	15.41	0.000	.0390399	.0507838
66	.0227873	.0138718	1.64	0.108	-.0051695	.0507441
67	.1009577	.0227207	4.44	0.000	.0551671	.1467483
68	-.0306394	.0015963	-19.19	0.000	-.0338565	-.0274223
69	-.020379	.0141345	-1.44	0.156	-.0488652	.0081072
70	-.069299	.0020211	-34.29	0.000	-.0733723	-.0652257
71	-.1322942	.0002901	-455.99	0.000	-.1328789	-.1317094
72	-.0014854	.0119742	-0.12	0.902	-.0256178	.0226471
73	.0872328	.0164432	5.31	0.000	.0540937	.1203718
74	.0819747	.0140382	5.84	0.000	.0536825	.1102669
75	.076033	.0113206	6.72	0.000	.0532178	.0988481
76	.0780692	.0122519	6.37	0.000	.053377	.1027614
77	.0447957	.0029667	15.10	0.000	.0388166	.0507748
78	.0465212	.0021775	21.36	0.000	.0421327	.0509097
79	.0875775	.0166008	5.28	0.000	.0541207	.1210343
80	-.5657089	.0227207	-24.90	0.000	-.6114995	-.5199183
81	-.2323756	.0227207	-10.23	0.000	-.2781662	-.186585
82	.1009577	.0227207	4.44	0.000	.0551671	.1467483
83	.0760933	.0113482	6.71	0.000	.0532225	.0989641
84	.1009577	.0227207	4.44	0.000	.0551671	.1467483
85	.0727854	.0098352	7.40	0.000	.0529638	.092607
86	.0074525	.0200468	0.37	0.712	-.0329492	.0478542
88	-.0225722	.02003	-1.13	0.266	-.06294	.0177957
90	-.0368917	.0054091	-6.82	0.000	-.047793	-.0259903
92	-.1097681	.003295	-33.31	0.000	-.1164087	-.1031275
93	-.0273698	.0097643	-2.80	0.008	-.0470483	-.0076912
94	-.0990423	.0227207	-4.36	0.000	-.1448329	-.0532517
96	-.0656065	.0169037	-3.88	0.000	-.0996737	-.0315394
97	.1009577	.0227207	4.44	0.000	.0551671	.1467483
98	.1009577	.0227207	4.44	0.000	.0551671	.1467483
99	.0523138	.0004719	110.86	0.000	.0513627	.0532648
100	.0487502	.001158	42.10	0.000	.0464164	.051084
102	-.0004156	.0075971	-0.05	0.957	-.0157264	.0148953
103	.0092721	.0036545	2.54	0.015	.0019069	.0166373
104	-.0542501	.0217535	-2.49	0.016	-.0980915	-.0104087
105	-.0657089	.0227207	-2.89	0.006	-.1114995	-.0199183
106	.0734682	.0101475	7.24	0.000	.0530172	.0939192
107	-.1147514	.0037225	-30.83	0.000	-.1222535	-.1072492
108	-.0077127	.0000783	-98.49	0.000	-.0078705	-.0075549
109	-.0278055	.0209995	-1.32	0.192	-.0701272	.0145163
110	.0820377	.0140671	5.83	0.000	.0536874	.110388
111	-.1592856	.0053306	-29.88	0.000	-.1700287	-.1485424
112	.0530919	.0008278	64.14	0.000	.0514236	.0547602
113	.1009577	.0227207	4.44	0.000	.0551671	.1467483
114	.1009577	.0227207	4.44	0.000	.0551671	.1467483
115	.0949715	.0199827	4.75	0.000	.054699	.1352439
116	.0345037	.0075719	4.56	0.000	.0192435	.049764
117	.035506	.0072157	4.92	0.000	.0209638	.0500482
118	.0010317	.0086904	0.12	0.906	-.0164827	.018546
119	.0482638	.0013805	34.96	0.000	.0454815	.051046
120	-.008781	.0274717	-0.32	0.751	-.0641467	.0465846
121	-.0429893	.0004422	-97.23	0.000	-.0438804	-.0420982
122	-.0270027	.0150142	-1.80	0.079	-.0572617	.0032564
123	-.1024372	.0093241	-10.99	0.000	-.1212287	-.0836456
124	-.1144375	.0161386	-7.09	0.000	-.1469626	-.0819123
125	.0078213	.0123318	0.63	0.529	-.0170318	.0326744
127	.0146232	.010458	1.40	0.169	-.0064535	.0357
128	.0171976	.0035532	4.84	0.000	.0100366	.0243587
129	-.0870346	.0022793	-38.19	0.000	-.0916281	-.082441
130	.0634468	.0055639	11.40	0.000	.0522334	.0746601

```
        131  |  -.0576044   .0024695   -23.33   0.000    -.0625814   -.0526275
        132  |  -.0343417   .0136121    -2.52   0.015     -.061775   -.0069084
        133  |   .0053146    .003048     1.74   0.088    -.0008283    .0114575
        134  |   .0927471   .0189653     4.89   0.000      .054525    .1309693
        136  |  -.0775867    .008122    -9.55   0.000    -.0939556   -.0612179
        137  |   .0436464   .0034924    12.50   0.000      .036608    .0506849
        139  |  -.0361191   .0002033  -177.63   0.000    -.0365289   -.0357092
        140  |  -.0660788   .0536786    -1.23   0.225     -.174261    .0421034
        142  |  -.0103107   .0154663    -0.67   0.508    -.0414811    .0208596
        143  |   .0410488   .0059563     6.89   0.000     .0290447    .0530529
        144  |  -.2906339   .0099345   -29.25   0.000    -.3106556   -.2706122
        145  |  -.0101534   .0227207    -0.45   0.657     -.055944    .0356372
        146  |   .0436318   .0034991    12.47   0.000     .0365799    .0506837
        147  |  -.0280089    .001083   -25.86   0.000    -.0301916   -.0258262
             |
       _cons |   .8990423   .0227207    39.57   0.000     .8532517    .9448329
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.779
                                                      Chi-sq(4) P-val =    0.0006
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                17.007
                         (Kleibergen-Paap rk Wald F statistic):          12.527
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Warning: estimated covariance matrix of moment conditions not of full rank.
         overidentification statistic not reported, and standard errors and
         model tests should be interpreted with caution.
Possible causes:
         number of clusters insufficient to calculate robust covariance matrix
         singleton dummy variable (dummy with one 1 and N-1 0s or vice versa)
partial option may address problem.
------------------------------------------------------------------------------
Instrumented:         x2
Included instruments: 2.sty 3.sty 4.sty 5.sty 6.sty 7.sty 8.sty 9.sty 10.sty
                      12.sty 13.sty 15.sty 16.sty 18.sty 20.sty 21.sty 22.sty
                      23.sty 24.sty 25.sty 26.sty 27.sty 28.sty 29.sty 30.sty
                      31.sty 32.sty 33.sty 34.sty 35.sty 36.sty 37.sty 38.sty
                      39.sty 40.sty 42.sty 44.sty 45.sty 46.sty 47.sty 48.sty
                      49.sty 50.sty 51.sty 52.sty 53.sty 54.sty 55.sty 56.sty
                      57.sty 58.sty 60.sty 61.sty 62.sty 63.sty 64.sty 65.sty
                      66.sty 67.sty 68.sty 69.sty 70.sty 71.sty 72.sty 73.sty
                      74.sty 75.sty 76.sty 77.sty 78.sty 79.sty 80.sty 81.sty
                      82.sty 83.sty 84.sty 85.sty 86.sty 88.sty 90.sty 92.sty
                      93.sty 94.sty 96.sty 97.sty 98.sty 99.sty 100.sty 102.sty
                      103.sty 104.sty 105.sty 106.sty 107.sty 108.sty 109.sty
                      110.sty 111.sty 112.sty 113.sty 114.sty 115.sty 116.sty
                      117.sty 118.sty 119.sty 120.sty 121.sty 122.sty 123.sty
                      124.sty 125.sty 127.sty 128.sty 129.sty 130.sty 131.sty
                      132.sty 133.sty 134.sty 136.sty 137.sty 139.sty 140.sty
                      142.sty 143.sty 144.sty 145.sty 146.sty 147.sty
Excluded instruments: c.inst#c.dD1 c.inst#c.dD6 c.inst#c.lnland c.inst#c.HIDTA
------------------------------------------------------------------------------

Contrasts of predictive margins
Model VCE    : Robust
```

```
Expression   : Linear prediction, predict()

1._at        : (asobserved)

2._at        : x2              = x

------------------------------------------------
             |         df        chi2     P>chi2
-------------+----------------------------------
         _at |          1        4.78     0.0288
------------------------------------------------

------------------------------------------------------------------
             |            Delta-method
             |   Contrast   Std. Err.     [95% Conf. Interval]
-------------+----------------------------------------------------
         _at |
   (2 vs 1)  |   .0580457    .026549      .0060106    .1100807
------------------------------------------------------------------

.
.
. * Table 4
. * Panel A: size of counties
. foreach var in "TVtotS" "TQtotS" {
  2.         capture drop x*
  3.         gen x=Llnsum4`var'
  4.         gen x_pop=x*tot_pop
  5.         ivreghdfe y (x x_pop = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)##c.tot_pop) tot_pop, abs
> orb(state year) cluster(state)
  6.         sum tot_pop if e(sample), detail
  7.         test x+x_pop*0.487317=0
  8. }
Warning - duplicate variables detected
Duplicates:         tot_pop
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  3,     44) =      3.70
                                                      Prob > F      =    0.0185
Total (centered) SS     =  224.3009732                Centered R2   =   -0.2266
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.2266
Residual SS             =  275.1236031                Root MSE      =     .2658

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |   .0200982   .0071887     2.80   0.008     .0056102    .0345861
       x_pop |   .0225537   .0289849     0.78   0.441    -.0358616     .080969
     tot_pop |  -.1463852   .1745532    -0.84   0.406    -.4981742    .2054037
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             6.139
                                                    Chi-sq(7) P-val =    0.5236
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               8.805
                         (Kleibergen-Paap rk Wald F statistic):         2.459
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
```

```
                                          10% maximal IV relative bias    10.22
                                          20% maximal IV relative bias     6.20
                                          30% maximal IV relative bias     4.73
                                          10% maximal IV size             25.64
                                          15% maximal IV size             14.31
                                          20% maximal IV size             10.41
                                          25% maximal IV size              8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         6.922
                                                    Chi-sq(6) P-val =    0.3281
------------------------------------------------------------------------------
Instrumented:         x x_pop
Included instruments: tot_pop
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
                      c.LlnTOTsum4TVtotSinst#c.dD1#c.tot_pop
                      c.LlnTOTsum4TVtotSinst#c.dD6#c.tot_pop
                      c.LlnTOTsum4TVtotSinst#c.lnland#c.tot_pop
                      c.LlnTOTsum4TVtotSinst#c.HIDTA#c.tot_pop
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Duplicates:           tot_pop
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

                          tot_pop
-------------------------------------------------------------
      Percentiles      Smallest
 1%      .001373       .000045
 5%      .004442       .000086
10%      .007133       .000539       Obs               3,905
25%      .014449       .000647       Sum of Wgt.       3,905

50%      .031973                     Mean           .1148327
                       Largest       Std. Dev.       .331447
75%      .087375       4.262689
90%      .256997       5.194675       Variance       .1098571
95%      .487317       5.253756       Skewness        12.2812
99%     1.245762       9.818605       Kurtosis       253.8997

 ( 1)  x + .487317*x_pop = 0

       F(  1,    44) =    4.48
            Prob > F =    0.0400
Warning - duplicate variables detected
Duplicates:         tot_pop
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
```

```
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  3,    44) =      3.97
                                                      Prob > F      =    0.0138
Total (centered) SS     =  224.3009732                Centered R2   =   -0.4012
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.4012
Residual SS             =  314.2825746                Root MSE      =     .2841

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |   .0893148    .026806     3.33   0.002     .0352908    .1433388
       x_pop |    .069464    .067341     1.03   0.308    -.0662528    .2051808
     tot_pop |  -.2065229   .1429807    -1.44   0.156    -.4946816    .0816357
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):              7.228
                                                    Chi-sq(7) P-val =    0.4055
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                6.814
                         (Kleibergen-Paap rk Wald F statistic):          1.990
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
                                         10% maximal IV relative bias    10.22
                                         20% maximal IV relative bias     6.20
                                         30% maximal IV relative bias     4.73
                                         10% maximal IV size             25.64
                                         15% maximal IV size             14.31
                                         20% maximal IV size             10.41
                                         25% maximal IV size              8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.770
                                                    Chi-sq(6) P-val =    0.5736
------------------------------------------------------------------------------
Instrumented:         x x_pop
Included instruments: tot_pop
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
                      c.LlnTOTsum4TQtotSinst#c.dD1#c.tot_pop
                      c.LlnTOTsum4TQtotSinst#c.dD6#c.tot_pop
                      c.LlnTOTsum4TQtotSinst#c.lnland#c.tot_pop
                      c.LlnTOTsum4TQtotSinst#c.HIDTA#c.tot_pop
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Duplicates:           tot_pop
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

                           tot_pop
-------------------------------------------------------------
      Percentiles      Smallest
 1%      .001373        .000045
```

```
 5%      .004442        .000086
10%      .007133        .000539       Obs               3,905
25%      .014449        .000647       Sum of Wgt.       3,905

50%      .031973                      Mean           .1148327
                        Largest       Std. Dev.       .331447
75%      .087375       4.262689
90%      .256997       5.194675       Variance       .1098571
95%      .487317       5.253756       Skewness        12.2812
99%     1.245762       9.818605       Kurtosis       253.8997

 ( 1)  x + .487317*x_pop = 0

       F(  1,    44) =    7.24
            Prob > F =    0.0101


.
. foreach var in "TVtotS" "TQtotS" {
  2.         capture drop x*
  3.         gen x=Llnsum4`var'
  4.         gen x_pop=x*tot_pop
  5.         ivreghdfe y (x x_pop = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)##c.tot_pop) tot_pop, abs
> orb(stateyear) cluster(state)
  6.         sum tot_pop if e(sample), detail
  7.         test x+x_pop*0.474768 =0
  8. }
(dropped 16 singleton observations)
Warning - duplicate variables detected
Duplicates:         tot_pop
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  3,    44) =      3.75
                                                      Prob > F      =    0.0174
Total (centered) SS     =  217.2529263                Centered R2   =   -0.2144
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.2144
Residual SS             =  263.8320304                Root MSE      =     .2606

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |    .019185    .007025     2.73   0.009     .0050271    .0333429
       x_pop |   .0224098   .0252326     0.89   0.379    -.0284431    .0732627
     tot_pop |  -.1445058   .1573983    -0.92   0.364    -.4617213    .1727096
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):               5.331
                                                    Chi-sq(7) P-val =    0.6197
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                11.647
                         (Kleibergen-Paap rk Wald F statistic):           2.270
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
                                         10% maximal IV relative bias    10.22
                                         20% maximal IV relative bias     6.20
                                         30% maximal IV relative bias     4.73
                                         10% maximal IV size             25.64
                                         15% maximal IV size             14.31
                                         20% maximal IV size             10.41
```

```
                                          25% maximal IV size              8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         7.107
                                                     Chi-sq(6) P-val =    0.3110
------------------------------------------------------------------------------
Instrumented:         x x_pop
Included instruments: tot_pop
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
                      c.LlnTOTsum4TVtotSinst#c.dD1#c.tot_pop
                      c.LlnTOTsum4TVtotSinst#c.dD6#c.tot_pop
                      c.LlnTOTsum4TVtotSinst#c.lnland#c.tot_pop
                      c.LlnTOTsum4TVtotSinst#c.HIDTA#c.tot_pop
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Duplicates:           tot_pop
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

                          tot_pop
-------------------------------------------------------------
      Percentiles      Smallest
 1%      .001364        .000045
 5%      .004436        .000086
10%      .007125        .000539       Obs               3,889
25%      .014361        .000647       Sum of Wgt.       3,889

50%      .031884                      Mean           .1135779
                        Largest       Std. Dev.      .3308005
75%      .086271       4.262689
90%      .251577       5.194675       Variance        .109429
95%      .474768       5.253756       Skewness       12.39876
99%     1.269629       9.818605       Kurtosis        257.095

 ( 1)  x + .474768*x_pop = 0

       F(  1,    44) =    5.47
            Prob > F =    0.0239
(dropped 16 singleton observations)
Warning - duplicate variables detected
Duplicates:         tot_pop
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  3,    44) =      4.23
                                                      Prob > F      =    0.0104
Total (centered) SS     =  217.2529263                Centered R2   =   -0.3325
```

```
Total (uncentered) SS   =  217.2529263                Uncentered R2 =  -0.3325
Residual SS             =  289.4919996                Root MSE      =     .273

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |   .0828483     .02423     3.42   0.001      .034016    .1316806
       x_pop |   .0593847   .0556318     1.07   0.292    -.0527338    .1715032
     tot_pop |     -.1789   .1259789    -1.42   0.163    -.4327937    .0749937
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             7.280
                                                    Chi-sq(7) P-val =    0.4003
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               8.076
                         (Kleibergen-Paap rk Wald F statistic):         2.252
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
                                         10% maximal IV relative bias    10.22
                                         20% maximal IV relative bias     6.20
                                         30% maximal IV relative bias     4.73
                                         10% maximal IV size             25.64
                                         15% maximal IV size             14.31
                                         20% maximal IV size             10.41
                                         25% maximal IV size              8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):        5.172
                                                    Chi-sq(6) P-val =    0.5220
------------------------------------------------------------------------------
Instrumented:         x x_pop
Included instruments: tot_pop
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
                      c.LlnTOTsum4TQtotSinst#c.dD1#c.tot_pop
                      c.LlnTOTsum4TQtotSinst#c.dD6#c.tot_pop
                      c.LlnTOTsum4TQtotSinst#c.lnland#c.tot_pop
                      c.LlnTOTsum4TQtotSinst#c.HIDTA#c.tot_pop
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Duplicates:           tot_pop
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

                          tot_pop
-------------------------------------------------------------
      Percentiles      Smallest
 1%      .001364        .000045
 5%      .004436        .000086
10%      .007125        .000539       Obs               3,889
25%      .014361        .000647       Sum of Wgt.       3,889

50%      .031884                      Mean           .1135779
                        Largest       Std. Dev.      .3308005
75%      .086271       4.262689
```

```
90%      .251577       5.194675       Variance        .109429
95%      .474768       5.253756       Skewness       12.39876
99%     1.269629       9.818605       Kurtosis        257.095

 ( 1)  x + .474768*x_pop = 0

       F(  1,    44) =    8.20
            Prob > F =    0.0064


.
. * Panel B: newspaper availability
. foreach var in "TVtotS" "TQtotS" {
  2.         capture drop x*
  3.         gen x=Llnsum4`var'
  4.         gen x_newsd=x*newsd
  5.         ivreghdfe y (x x_newsd = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)##i.newsd) newsd, absor
> b(state year) cluster(state)
  6.         test x+x_newsd=0
  7. }
Warning - collinearities detected
Vars dropped:       1.newsdummy
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  3,    44) =      5.38
                                                      Prob > F      =    0.0030
Total (centered) SS     =  224.3009732                Centered R2   =   -0.2906
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.2906
Residual SS             =  289.4828385                Root MSE      =     .2727

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |  -.0382314   .0257506    -1.48   0.145    -.0901283    .0136655
     x_newsd |   .0625457   .0257014     2.43   0.019      .010748    .1143434
   newsdummy |  -.2125695   .0864626    -2.46   0.018    -.3868234   -.0383157
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             9.042
                                                   Chi-sq(7) P-val =    0.2497
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               3.311
                         (Kleibergen-Paap rk Wald F statistic):         1.918
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
                                         10% maximal IV relative bias    10.22
                                         20% maximal IV relative bias     6.20
                                         30% maximal IV relative bias     4.73
                                         10% maximal IV size             25.64
                                         15% maximal IV size             14.31
                                         20% maximal IV size             10.41
                                         25% maximal IV size              8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):        5.775
                                                   Chi-sq(6) P-val =    0.4489
------------------------------------------------------------------------------
Instrumented:         x x_newsd
```

```
Included instruments: newsdummy
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
                      1.newsdummy#c.LlnTOTsum4TVtotSinst#c.dD1
                      1.newsdummy#c.LlnTOTsum4TVtotSinst#c.dD6
                      1.newsdummy#c.LlnTOTsum4TVtotSinst#c.lnland
                      1.newsdummy#c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Dropped collinear:    1.newsdummy
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

 ( 1)  x + x_newsd = 0

       F(  1,    44) =    7.86
            Prob > F =    0.0075
Warning - collinearities detected
Vars dropped:       1.newsdummy
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  3,    44) =      3.67
                                                      Prob > F      =    0.0191
Total (centered) SS     =  224.3009732                Centered R2   =   -0.1784
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.1784
Residual SS             =  264.3266549                Root MSE      =     .2605

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |  -.1065314   .0867319    -1.23   0.226    -.2813281    .0682652
     x_newsd |    .171138   .0877821     1.95   0.058    -.0057751    .3480512
   newsdummy |   -.144846    .068198    -2.12   0.039    -.2822901   -.0074019
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             6.780
                                                    Chi-sq(7) P-val =    0.4522
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               4.795
                         (Kleibergen-Paap rk Wald F statistic):         1.484
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
                                         10% maximal IV relative bias    10.22
                                         20% maximal IV relative bias     6.20
                                         30% maximal IV relative bias     4.73
                                         10% maximal IV size             25.64
                                         15% maximal IV size             14.31
                                         20% maximal IV size             10.41
```

```
                                          25% maximal IV size             8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         7.683
                                                     Chi-sq(6) P-val =    0.2623
------------------------------------------------------------------------------
Instrumented:         x x_newsd
Included instruments: newsdummy
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
                      1.newsdummy#c.LlnTOTsum4TQtotSinst#c.dD1
                      1.newsdummy#c.LlnTOTsum4TQtotSinst#c.dD6
                      1.newsdummy#c.LlnTOTsum4TQtotSinst#c.lnland
                      1.newsdummy#c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Dropped collinear:    1.newsdummy
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

 ( 1)  x + x_newsd = 0

       F(  1,    44) =    8.00
            Prob > F =    0.0070


.
. foreach var in "TVtotS" "TQtotS" {
  2.         capture drop x*
  3.         gen x=Llnsum4`var'
  4.         gen x_newsd=x*newsd
  5.         ivreghdfe y (x x_newsd = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)##i.newsd) newsd, absor
> b(stateyear) cluster(state)
  6.         test x+x_newsd=0
  7. }
(dropped 16 singleton observations)
Warning - collinearities detected
Vars dropped:       1.newsdummy
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  3,    44) =      4.54
                                                      Prob > F      =    0.0074
Total (centered) SS     =  217.2529263                Centered R2   =   -0.2842
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.2842
Residual SS             =  278.9916408                Root MSE      =      .268
```

```
------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |  -.0378294   .0252687    -1.50   0.142    -.0887552    .0130963
     x_newsd |   .0615311   .0262811     2.34   0.024      .008565    .1144972
   newsdummy |  -.2079983   .0902326    -2.31   0.026    -.3898501   -.0261465
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             9.914
                                                   Chi-sq(7) P-val =    0.1935
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               3.554
                         (Kleibergen-Paap rk Wald F statistic):         2.137
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
                                         10% maximal IV relative bias    10.22
                                         20% maximal IV relative bias     6.20
                                         30% maximal IV relative bias     4.73
                                         10% maximal IV size             25.64
                                         15% maximal IV size             14.31
                                         20% maximal IV size             10.41
                                         25% maximal IV size              8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):        6.035
                                                   Chi-sq(6) P-val =    0.4193
------------------------------------------------------------------------------
Instrumented:         x x_newsd
Included instruments: newsdummy
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
                      1.newsdummy#c.LlnTOTsum4TVtotSinst#c.dD1
                      1.newsdummy#c.LlnTOTsum4TVtotSinst#c.dD6
                      1.newsdummy#c.LlnTOTsum4TVtotSinst#c.lnland
                      1.newsdummy#c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Dropped collinear:    1.newsdummy
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

 ( 1)  x + x_newsd = 0

       F(  1,    44) =    6.54
            Prob > F =    0.0141
(dropped 16 singleton observations)
Warning - collinearities detected
Vars dropped:       1.newsdummy
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state
```

```
Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  3,     44) =      3.40
                                                      Prob > F      =    0.0259
Total (centered) SS     =  217.2529263                Centered R2   =   -0.1668
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.1668
Residual SS             =  253.4937394                Root MSE      =     .2554

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |  -.1004649   .0748078    -1.34   0.186      -.25123    .0503002
     x_newsd |    .163935   .0776464     2.11   0.040     .0074489    .3204211
   newsdummy |  -.1384889   .0628647    -2.20   0.033    -.2651843   -.0117935
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):              9.080
                                                   Chi-sq(7) P-val =    0.2470
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                5.779
                         (Kleibergen-Paap rk Wald F statistic):          2.407
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
                                         10% maximal IV relative bias    10.22
                                         20% maximal IV relative bias     6.20
                                         30% maximal IV relative bias     4.73
                                         10% maximal IV size             25.64
                                         15% maximal IV size             14.31
                                         20% maximal IV size             10.41
                                         25% maximal IV size              8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         6.717
                                                   Chi-sq(6) P-val =    0.3478
------------------------------------------------------------------------------
Instrumented:         x x_newsd
Included instruments: newsdummy
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
                      1.newsdummy#c.LlnTOTsum4TQtotSinst#c.dD1
                      1.newsdummy#c.LlnTOTsum4TQtotSinst#c.dD6
                      1.newsdummy#c.LlnTOTsum4TQtotSinst#c.lnland
                      1.newsdummy#c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Dropped collinear:    1.newsdummy
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

 ( 1)  x + x_newsd = 0

       F(  1,    44) =    7.08
            Prob > F =    0.0109

.
```

```
. * Panel C: Democratic-leaning counties
. label var D_share_All "Dem share in previous election"

. foreach var in "TVtotS" "TQtotS" {
  2.         capture drop x*
  3.         gen x=Llnsum4`var'
  4.         gen x_dem=x*D_share_All
  5.         ivreghdfe y (x x_dem = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)##c.D_share_All) D_share_
> All, absorb(state year) cluster(state)
  6.         sum D_share_All if e(sample),detail
  7.         test x+x_dem*0.5019286=0
  8. }
(1 missing value generated)
Warning - duplicate variables detected
Duplicates:         D_share_All
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3904
                                                      F(  3,    44) =      2.25
                                                      Prob > F      =    0.0960
Total (centered) SS     =  224.2976005                Centered R2   =   -0.0740
Total (uncentered) SS   =  224.2976005                Uncentered R2 =   -0.0740
Residual SS             =  240.8952739                Root MSE      =     .2488

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |   .0177872   .0100086     1.78   0.082    -.0023839    .0379583
       x_dem |   -.009887   .0241291    -0.41   0.684     -.058516     .038742
 D_share_All |   .0732286   .1017951     0.72   0.476    -.1319259    .2783831
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             18.125
                                                    Chi-sq(7) P-val =    0.0114
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                6.990
                         (Kleibergen-Paap rk Wald F statistic):          6.293
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
                                         10% maximal IV relative bias    10.22
                                         20% maximal IV relative bias     6.20
                                         30% maximal IV relative bias     4.73
                                         10% maximal IV size             25.64
                                         15% maximal IV size             14.31
                                         20% maximal IV size             10.41
                                         25% maximal IV size              8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         6.174
                                                    Chi-sq(6) P-val =    0.4039
------------------------------------------------------------------------------
Instrumented:         x x_dem
Included instruments: D_share_All
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
                      c.LlnTOTsum4TVtotSinst#c.dD1#c.D_share_All
                      c.LlnTOTsum4TVtotSinst#c.dD6#c.D_share_All
```

```
                      c.LlnTOTsum4TVtotSinst#c.lnland#c.D_share_All
                      c.LlnTOTsum4TVtotSinst#c.HIDTA#c.D_share_All
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Duplicates:           D_share_All
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

               Dem share in previous election
-------------------------------------------------------------
      Percentiles      Smallest
 1%           0              0
 5%      .131548             0
10%     .1758518             0       Obs               3,904
25%     .2712393             0       Sum of Wgt.       3,904

50%     .3842783                     Mean           .3884684
                        Largest      Std. Dev.      .1631163
75%     .5019286       .8774545
90%     .6000174        .887653      Variance       .0266069
95%     .6625819       .8886813      Skewness       .1445353
99%     .7772173       .9200308      Kurtosis       2.711064

 ( 1)  x + .5019286*x_dem = 0

       F(  1,    44) =    3.45
            Prob > F =    0.0701
(1 missing value generated)
Warning - duplicate variables detected
Duplicates:         D_share_All
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3904
                                                      F(  3,    44) =      3.72
                                                      Prob > F      =    0.0181
Total (centered) SS     =  224.2976005                Centered R2   =   -0.0829
Total (uncentered) SS   =  224.2976005                Uncentered R2 =   -0.0829
Residual SS             =  242.8988787                Root MSE      =     .2498

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |   .0829546   .0272311     3.05   0.004      .028074    .1378352
       x_dem |  -.0885677   .0597975    -1.48   0.146    -.2090817    .0319463
 D_share_All |   .1128505   .0652341     1.73   0.091    -.0186202    .2443212
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.182
                                                      Chi-sq(7) P-val =    0.0076
```

```
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                 8.802
                         (Kleibergen-Paap rk Wald F statistic):          13.125
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
                                         10% maximal IV relative bias    10.22
                                         20% maximal IV relative bias     6.20
                                         30% maximal IV relative bias     4.73
                                         10% maximal IV size             25.64
                                         15% maximal IV size             14.31
                                         20% maximal IV size             10.41
                                         25% maximal IV size              8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):          5.041
                                                      Chi-sq(6) P-val =    0.5386
------------------------------------------------------------------------------
Instrumented:         x x_dem
Included instruments: D_share_All
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
                      c.LlnTOTsum4TQtotSinst#c.dD1#c.D_share_All
                      c.LlnTOTsum4TQtotSinst#c.dD6#c.D_share_All
                      c.LlnTOTsum4TQtotSinst#c.lnland#c.D_share_All
                      c.LlnTOTsum4TQtotSinst#c.HIDTA#c.D_share_All
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Duplicates:           D_share_All
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

               Dem share in previous election
-------------------------------------------------------------
      Percentiles      Smallest
 1%           0              0
 5%      .131548             0
10%     .1758518             0       Obs               3,904
25%     .2712393             0       Sum of Wgt.       3,904

50%     .3842783                     Mean           .3884684
                        Largest      Std. Dev.      .1631163
75%     .5019286       .8774545
90%     .6000174        .887653      Variance       .0266069
95%     .6625819       .8886813      Skewness       .1445353
99%     .7772173       .9200308      Kurtosis       2.711064

 ( 1)  x + .5019286*x_dem = 0

       F(  1,    44) =    3.77
            Prob > F =    0.0586


.
. foreach var in "TVtotS" "TQtotS" {
  2.         capture drop x*
```

```
  3.         gen x=Llnsum4`var'
  4.         gen x_dem=x*D_share_All
  5.         ivreghdfe y (x x_dem = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)##c.D_share_All) D_share_
> All, absorb(stateyear) cluster(state)
  6.         sum D_share_All if e(sample),detail
  7.         test x+x_dem*0.5010982=0
  8. }
(1 missing value generated)
(dropped 16 singleton observations)
Warning - duplicate variables detected
Duplicates:         D_share_All
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                 Number of obs =      3888
                                                       F(  3,    44) =      1.83
                                                       Prob > F      =    0.1557
Total (centered) SS     =   217.249565                 Centered R2   =   -0.0497
Total (uncentered) SS   =   217.249565                 Uncentered R2 =   -0.0497
Residual SS             =  228.0388026                 Root MSE      =     .2423

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |   .0141184   .0108959     1.30   0.202    -.0078409    .0360776
       x_dem |  -.0071482   .0265473    -0.27   0.789    -.0606508    .0463545
 D_share_All |   .0700518   .1087882     0.64   0.523    -.1491964       .2893
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             18.316
                                                   Chi-sq(7) P-val =    0.0106
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                6.735
                         (Kleibergen-Paap rk Wald F statistic):          5.931
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
                                         10% maximal IV relative bias    10.22
                                         20% maximal IV relative bias     6.20
                                         30% maximal IV relative bias     4.73
                                         10% maximal IV size             25.64
                                         15% maximal IV size             14.31
                                         20% maximal IV size             10.41
                                         25% maximal IV size              8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         6.839
                                                   Chi-sq(6) P-val =    0.3360
------------------------------------------------------------------------------
Instrumented:         x x_dem
Included instruments: D_share_All
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
                      c.LlnTOTsum4TVtotSinst#c.dD1#c.D_share_All
                      c.LlnTOTsum4TVtotSinst#c.dD6#c.D_share_All
                      c.LlnTOTsum4TVtotSinst#c.lnland#c.D_share_All
                      c.LlnTOTsum4TVtotSinst#c.HIDTA#c.D_share_All
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
```

```
                        any small-sample adjustments include partialled-out
                        variables in regressor count K
Duplicates:           D_share_All
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

               Dem share in previous election
-------------------------------------------------------------
      Percentiles      Smallest
 1%           0              0
 5%     .1314815              0
10%     .1757436              0       Obs               3,888
25%     .2709854              0       Sum of Wgt.       3,888

50%     .3837468                      Mean           .3879709
                        Largest       Std. Dev.      .1628973
75%     .5010982       .8774545
90%     .5994092        .887653       Variance       .0265355
95%     .6608067       .8886813       Skewness       .1407106
99%     .7761928       .9200308       Kurtosis       2.704382

 ( 1)  x + .5010982*x_dem = 0

       F(  1,    44) =    2.14
            Prob > F =    0.1507
(1 missing value generated)
(dropped 16 singleton observations)
Warning - duplicate variables detected
Duplicates:         D_share_All
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3888
                                                      F(  3,    44) =      2.74
                                                      Prob > F      =    0.0548
Total (centered) SS     =   217.249565                Centered R2   =   -0.0594
Total (uncentered) SS   =   217.249565                Uncentered R2 =   -0.0594
Residual SS             =  230.1527093                Root MSE      =     .2434

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
           x |   .0630649   .0309602     2.04   0.048     .0006688    .1254611
       x_dem |  -.0533079   .0712644    -0.75   0.458    -.1969317     .090316
 D_share_All |   .0879104   .0735803     1.19   0.239    -.0603811    .2362018
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.318
                                                   Chi-sq(7) P-val =    0.0072
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                8.694
                         (Kleibergen-Paap rk Wald F statistic):         11.227
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    17.70
```

```
                                          10% maximal IV relative bias    10.22
                                          20% maximal IV relative bias     6.20
                                          30% maximal IV relative bias     4.73
                                          10% maximal IV size             25.64
                                          15% maximal IV size             14.31
                                          20% maximal IV size             10.41
                                          25% maximal IV size              8.39
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         5.412
                                                     Chi-sq(6) P-val =    0.4922
------------------------------------------------------------------------------
Instrumented:         x x_dem
Included instruments: D_share_All
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
                      c.LlnTOTsum4TQtotSinst#c.dD1#c.D_share_All
                      c.LlnTOTsum4TQtotSinst#c.dD6#c.D_share_All
                      c.LlnTOTsum4TQtotSinst#c.lnland#c.D_share_All
                      c.LlnTOTsum4TQtotSinst#c.HIDTA#c.D_share_All
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Duplicates:           D_share_All
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

               Dem share in previous election
-------------------------------------------------------------
      Percentiles      Smallest
 1%           0              0
 5%     .1314815              0
10%     .1757436              0       Obs                3,888
25%     .2709854              0       Sum of Wgt.        3,888

50%     .3837468                      Mean           .3879709
                        Largest       Std. Dev.      .1628973
75%     .5010982       .8774545
90%     .5994092        .887653       Variance       .0265355
95%     .6608067       .8886813       Skewness       .1407106
99%     .7761928       .9200308       Kurtosis       2.704382

 ( 1)  x + .5010982*x_dem = 0

       F(  1,    44) =    3.17
            Prob > F =    0.0819


.
. * Table 5: Adding control variables
. * Panel A: socio-economic controls
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)) MedianHouseholdInc
> ome tot_pop shareblack past_share crime, absorb(state year) cluster(state)
  3. }
```

```
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                  Number of obs =      3682
                                                        F(  6,    44) =     15.08
                                                        Prob > F      =    0.0000
Total (centered) SS     =  214.3587581                  Centered R2   =   -0.1315
Total (uncentered) SS   =  214.3587581                  Uncentered R2 =   -0.1315
Residual SS             =  242.5546435                  Root MSE      =     .2572

------------------------------------------------------------------------------
                     |               Robust
                   y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------------------+--------------------------------------------------------------------
        Llnsum4TVtotS |   .0205975    .009104     2.26   0.029     .0022496    .0389454
MedianHouseholdIncome |   .0005375   .0004405     1.22   0.229    -.0003502    .0014253
              tot_pop |  -.0034792   .0119765    -0.29   0.773    -.0276162    .0206579
           shareblack |   .0649322   .0305882     2.12   0.039     .0032857    .1265787
           past_share |   .2075425   .0309153     6.71   0.000     .1452367    .2698483
                crime |    .236616   .1644428     1.44   0.157    -.0947967    .5680286
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             15.609
                                                   Chi-sq(4) P-val =    0.0036
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                6.314
                         (Kleibergen-Paap rk Wald F statistic):          6.559
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.413
                                                   Chi-sq(3) P-val =    0.3322
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Included instruments: MedianHouseholdIncome tot_pop shareblack past_share crime
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)
```

```
IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3682
                                                      F(  6,    44) =     14.20
                                                      Prob > F      =    0.0000
Total (centered) SS     =  214.3587581                Centered R2   =   -0.0977
Total (uncentered) SS   =  214.3587581                Uncentered R2 =   -0.0977
Residual SS             =  235.3115235                Root MSE      =     .2533

------------------------------------------------------------------------------
                     |               Robust
                   y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------------------+--------------------------------------------------------------------
        LlnsumTQtotS |   .0613218   .0269834     2.27   0.028     .0069404    .1157032
MedianHouseholdIncome |   .0004296   .0004377     0.98   0.332    -.0004524    .0013117
              tot_pop |  -.0136925   .0124292    -1.10   0.277     -.038742    .0113569
           shareblack |   .0418088   .0267457     1.56   0.125    -.0120936    .0957112
           past_share |   .2021172   .0314438     6.43   0.000     .1387464     .265488
                crime |   .2491775   .1609074     1.55   0.129    -.0751099     .573465
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             16.343
                                                      Chi-sq(4) P-val =    0.0026
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                8.545
                         (Kleibergen-Paap rk Wald F statistic):          6.597
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.826
                                                      Chi-sq(3) P-val =    0.2808
------------------------------------------------------------------------------
Instrumented:         LlnsumTQtotS
Included instruments: MedianHouseholdIncome tot_pop shareblack past_share crime
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
```

```
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)) MedianHouseholdInc
> ome tot_pop shareblack past_share crime, absorb(stateyear) cluster(state)
  3. }
(dropped 15 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3667
                                                      F(  6,    44) =     16.53
                                                      Prob > F      =    0.0000
Total (centered) SS     =  206.9781984                Centered R2   =   -0.0745
Total (uncentered) SS   =  206.9781984                Uncentered R2 =   -0.0745
Residual SS             =  222.3922596                Root MSE      =     .2465

------------------------------------------------------------------------------
                   |               Robust
                 y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------------+----------------------------------------------------------------
       Llnsum4TVtotS |   .0162996   .0093623     1.74   0.089    -.0025689     .035168
MedianHouseholdIncome |   .0007074   .0004807     1.47   0.148    -.0002613    .0016761
             tot_pop |  -.0011295   .0116206    -0.10   0.923    -.0245492    .0222902
          shareblack |   .0663504   .0311613     2.13   0.039     .0035489    .1291519
          past_share |   .2030654   .0316856     6.41   0.000     .1392073    .2669235
               crime |   .2368737   .1494026     1.59   0.120    -.0642275    .5379748
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             14.229
                                                    Chi-sq(4) P-val =    0.0066
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                5.381
                         (Kleibergen-Paap rk Wald F statistic):          5.388
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.536
                                                    Chi-sq(3) P-val =    0.3161
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Included instruments: MedianHouseholdIncome tot_pop shareblack past_share crime
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
```

```
-------------+----------------------------------------|
   stateyear |       131         131           0    *|
-------------+----------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 15 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                  Number of obs =      3667
                                                        F(  6,    44) =     15.44
                                                        Prob > F      =    0.0000
Total (centered) SS     =  206.9781984                  Centered R2   =   -0.0559
Total (uncentered) SS   =  206.9781984                  Uncentered R2 =   -0.0559
Residual SS             =  218.5528196                  Root MSE      =     .2444

------------------------------------------------------------------------------
                   |               Robust
                 y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------------+----------------------------------------------------------------
       Llnsum4TQtotS |   .0497943   .0273162     1.82   0.075     -.005258    .1048465
MedianHouseholdIncome |   .0006278   .0004671     1.34   0.186    -.0003135    .0015691
             tot_pop |  -.0098519   .0121747    -0.81   0.423    -.0343883    .0146846
          shareblack |   .0466362   .0282786     1.65   0.106    -.0103556     .103628
          past_share |   .1987636   .0321735     6.18   0.000     .1339222    .2636049
               crime |   .2517543    .145137     1.73   0.090    -.0407502    .5442588
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             14.212
                                                   Chi-sq(4) P-val =    0.0066
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                7.528
                         (Kleibergen-Paap rk Wald F statistic):          5.185
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.639
                                                   Chi-sq(3) P-val =    0.3032
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Included instruments: MedianHouseholdIncome tot_pop shareblack past_share crime
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
```

```
   stateyear |       131         131           0    *|
-------------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Panel B: distance from closest military base
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)) i.year#c.dD1mil if
>  year>2006 & year~=2009 & year~=2013, absorb(state year) cluster(state)
  3. }
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                 Number of obs =      3905
                                                       F(  9,     44) =     24.48
                                                       Prob > F      =    0.0000
Total (centered) SS     =  224.3009732                 Centered R2   =   -0.0782
Total (uncentered) SS   =  224.3009732                 Uncentered R2 =   -0.0782
Residual SS             =  241.8470806                 Root MSE      =     .2494

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTVtotS |   .0147978   .0059243     2.50   0.016     .0028581    .0267375
             |
year#c.dD1mil |
        2007  |   .4393092   .4810035     0.91   0.366    -.5300897    1.408708
        2008  |   .1679966   .1955708     0.86   0.395    -.2261504    .5621436
        2010  |  -.0317634   .4406074    -0.07   0.943    -.9197493    .8562224
        2011  |   .8169445   .1956214     4.18   0.000     .4226954    1.211193
        2012  |   .0230883   .0522872     0.44   0.661    -.0822896    .1284662
        2014  |  -1.103139    .506618    -2.18   0.035     -2.12416   -.0821175
        2015  |   .3340466    .438016     0.76   0.450    -.5487166     1.21681
        2016  |  -.1489404   .2031449    -0.73   0.467    -.5583521    .2604712
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             15.926
                                                   Chi-sq(4) P-val =    0.0031
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               11.731
                         (Kleibergen-Paap rk Wald F statistic):         11.620
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.884
                                                   Chi-sq(3) P-val =    0.1805
------------------------------------------------------------------------------
Instrumented:         LlnsumTVtotS
Included instruments: 2007b.year#c.dD1mil 2008.year#c.dD1mil 2010.year#c.dD1mil
                      2011.year#c.dD1mil 2012.year#c.dD1mil 2014.year#c.dD1mil
                      2015.year#c.dD1mil 2016.year#c.dD1mil
```

```
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  9,    44) =     16.85
                                                      Prob > F      =    0.0000
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0678
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.0678
Residual SS             =  239.4999837                Root MSE      =     .2482

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTQtotS |   .0469923   .0185606     2.53   0.015     .0095858    .0843988
             |
year#c.dD1mil |
        2007  |   .3575469   .4792292     0.75   0.460     -.608276     1.32337
        2008  |   .1287627   .2026009     0.64   0.528    -.2795526    .5370781
        2010  |  -.0296389    .430491    -0.07   0.945    -.8972366    .8379588
        2011  |     .79515   .1930486     4.12   0.000     .4060862    1.184214
        2012  |   .0149193   .0474039     0.31   0.754     -.080617    .1104556
        2014  |   -1.03897   .4647707    -2.24   0.031    -1.975654   -.1022865
        2015  |   .1236288   .2870148     0.43   0.669    -.4548115    .7020692
        2016  |  -.0700576   .2285792    -0.31   0.761    -.5307287    .3906135
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             20.334
                                                   Chi-sq(4) P-val =    0.0004
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               16.704
                         (Kleibergen-Paap rk Wald F statistic):         12.786
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         5.176
```

```
                                                      Chi-sq(3) P-val =    0.1594
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Included instruments: 2007b.year#c.dD1mil 2008.year#c.dD1mil 2010.year#c.dD1mil
                      2011.year#c.dD1mil 2012.year#c.dD1mil 2014.year#c.dD1mil
                      2015.year#c.dD1mil 2016.year#c.dD1mil
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)) i.year#c.dD1mil if
>  year>2006 & year~=2009 & year~=2013, absorb(stateyear) cluster(state)
  3. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  9,    44) =     45.23
                                                      Prob > F      =    0.0000
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0652
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0652
Residual SS             =  231.4074793                Root MSE      =     .2442

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   .0134115   .0059388     2.26   0.029     .0014425    .0253804
             |
year#c.dD1mil |
        2007  |   .4236833   .3862743     1.10   0.279    -.3548015    1.202168
        2008  |    .139833   .2560091     0.55   0.588    -.3761193    .6557854
        2010  |  -.0490695   .4930381    -0.10   0.921    -1.042723    .9445835
        2011  |   .8384406    .218925     3.83   0.000     .3972262    1.279655
        2012  |  -.0108154   .0471106    -0.23   0.819    -.1057605    .0841297
        2014  |  -1.161246   .4898332    -2.37   0.022    -2.148439   -.1740516
        2015  |   .3773181    .355907     1.06   0.295    -.3399653    1.094601
        2016  |  -.0320443   .2027013    -0.16   0.875     -.440562    .3764734
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             14.599
                                                      Chi-sq(4) P-val =    0.0056
------------------------------------------------------------------------------
```

```
Weak identification test (Cragg-Donald Wald F statistic):                10.774
                         (Kleibergen-Paap rk Wald F statistic):          10.156
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         5.127
                                                     Chi-sq(3) P-val =    0.1628
------------------------------------------------------------------------------
Instrumented:         LlnsumTVtotS
Included instruments: 2007b.year#c.dD1mil 2008.year#c.dD1mil 2010.year#c.dD1mil
                      2011.year#c.dD1mil 2012.year#c.dD1mil 2014.year#c.dD1mil
                      2015.year#c.dD1mil 2016.year#c.dD1mil
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  9,    44) =     33.29
                                                      Prob > F      =    0.0000
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0572
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0572
Residual SS             =  229.6834208                Root MSE      =     .2433

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTQtotS |   .0432663   .0188275     2.30   0.026     .0053219    .0812107
             |
year#c.dD1mil |
        2007 |   .3807444   .3831555     0.99   0.326    -.3914548    1.152944
        2008 |   .1066094   .2670899     0.40   0.692    -.4316749    .6448937
        2010 |  -.0392811    .487097    -0.08   0.936    -1.020961    .9423984
        2011 |   .8704035   .2277941     3.82   0.000     .4113146    1.329492
        2012 |  -.0191832   .0405082    -0.47   0.638    -.1008222    .0624557
        2014 |   -1.09678   .4518978    -2.43   0.019     -2.00752     -.18604
```

```
        2015  |   .1043425   .2487835     0.42   0.677    -.3970478    .6057328
        2016  |    .048304   .2226646     0.22   0.829     -.400447    .4970549
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.436
                                                      Chi-sq(4) P-val =    0.0006
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               15.733
                         (Kleibergen-Paap rk Wald F statistic):         12.004
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.924
                                                      Chi-sq(3) P-val =    0.1774
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Included instruments: 2007b.year#c.dD1mil 2008.year#c.dD1mil 2010.year#c.dD1mil
                      2011.year#c.dD1mil 2012.year#c.dD1mil 2014.year#c.dD1mil
                      2015.year#c.dD1mil 2016.year#c.dD1mil
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Table 6: Other dependent variables
. * Panel A: change in vote share
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe change_share (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6
c.lnland c.HIDTA)), absorb
> (state year) cluster(state)
  3. }
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3611
                                                      F(  1,    44) =      4.72
                                                      Prob > F      =    0.0352
Total (centered) SS     =  178.0070356                Centered R2   =   -0.0575
Total (uncentered) SS   =  178.0070356                Uncentered R2 =   -0.0575
Residual SS             =  188.2415317                Root MSE      =     .2286
```

```
------------------------------------------------------------------------------
             |               Robust
 change_share |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
Llnsum4TVtotS |   .0127104   .0058499     2.17   0.035     .0009207       .0245
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             17.258
                                                    Chi-sq(4) P-val =    0.0017
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                9.096
                         (Kleibergen-Paap rk Wald F statistic):          9.556
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         5.009
                                                    Chi-sq(3) P-val =    0.1712
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3611
                                                      F(  1,    44) =      4.80
                                                      Prob > F      =    0.0338
Total (centered) SS     =  178.0070356                Centered R2   =   -0.0287
Total (uncentered) SS   =  178.0070356                Uncentered R2 =   -0.0287
Residual SS             =  183.1229935                Root MSE      =     .2255

------------------------------------------------------------------------------
             |               Robust
 change_share |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
LlnsumTQtotS |   .0288057   .0131489     2.19   0.034     .0023059    .0553054
------------------------------------------------------------------------------
```

```
Underidentification test (Kleibergen-Paap rk LM statistic):             20.729
                                                      Chi-sq(4) P-val =    0.0004
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               16.482
                         (Kleibergen-Paap rk Wald F statistic):         12.916
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         6.202
                                                      Chi-sq(3) P-val =    0.1022
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe change_share (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6
c.lnland c.HIDTA)), absorb
> (stateyear) cluster(state)
  3. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3595
                                                      F(  1,    44) =      3.54
                                                      Prob > F      =    0.0664
Total (centered) SS     =  171.5948151                Centered R2   =   -0.0521
Total (uncentered) SS   =  171.5948151                Uncentered R2 =   -0.0521
Residual SS             =  180.5377402                Root MSE      =     .2242

------------------------------------------------------------------------------
             |               Robust
 change_share |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
Llnsum4TVtotS |   .0120203   .0063861     1.88   0.066      -.00085    .0248907
```

```
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             15.620
                                                  Chi-sq(4) P-val =    0.0036
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                8.093
                         (Kleibergen-Paap rk Wald F statistic):          8.201
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         5.329
                                                  Chi-sq(3) P-val =    0.1493
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       129         129           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3595
                                                      F(  1,    44) =      3.51
                                                      Prob > F      =    0.0677
Total (centered) SS     =  171.5948151                Centered R2   =   -0.0241
Total (uncentered) SS   =  171.5948151                Uncentered R2 =   -0.0241
Residual SS             =  175.7312651                Root MSE      =     .2212

------------------------------------------------------------------------------
             |               Robust
 change_share |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TQtotS |   .0260065   .0138843     1.87   0.068    -.0019754    .0539884
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.483
                                                  Chi-sq(4) P-val =    0.0006
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               15.169
                         (Kleibergen-Paap rk Wald F statistic):         11.854
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
```

```
                                          10% maximal IV relative bias    10.27
                                          20% maximal IV relative bias     6.71
                                          30% maximal IV relative bias     5.34
                                          10% maximal IV size             24.58
                                          15% maximal IV size             13.96
                                          20% maximal IV size             10.26
                                          25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         6.416
                                                    Chi-sq(3) P-val =    0.0930
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       129         129           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Panel B: change in votes for incumbent
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe change_votes (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6
c.lnland c.HIDTA)), absorb
> (state year) cluster(state)
  3. }
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3482
                                                      F(  1,    44) =     12.87
                                                      Prob > F      =    0.0008
Total (centered) SS     =  6.53604e+11                Centered R2   =   -1.2008
Total (uncentered) SS   =  6.53604e+11                Uncentered R2 =   -1.2008
Residual SS             =  1.43842e+12                Root MSE      =     20351

------------------------------------------------------------------------------
             |               Robust
 change_votes |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   3254.353   907.0611     3.59   0.001     1426.292    5082.415
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             15.653
                                                    Chi-sq(4) P-val =    0.0035
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                8.093
                         (Kleibergen-Paap rk Wald F statistic):          8.332
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
```

```
                                        10% maximal IV relative bias    10.27
                                        20% maximal IV relative bias     6.71
                                        30% maximal IV relative bias     5.34
                                        10% maximal IV size             24.58
                                        15% maximal IV size             13.96
                                        20% maximal IV size             10.26
                                        25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         2.283
                                                    Chi-sq(3) P-val =    0.5158
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3482
                                                      F(  1,    44) =     13.20
                                                      Prob > F      =    0.0007
Total (centered) SS     =  6.53604e+11                Centered R2   =   -0.6982
Total (uncentered) SS   =  6.53604e+11                Uncentered R2 =   -0.6982
Residual SS             =  1.10996e+12                Root MSE      =     17877

------------------------------------------------------------------------------
             |               Robust
 change_votes |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
LlnsumTQtotS |   8290.238   2281.398     3.63   0.001     3692.383    12888.09
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.507
                                                    Chi-sq(4) P-val =    0.0006
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               14.637
                         (Kleibergen-Paap rk Wald F statistic):         11.851
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                        10% maximal IV relative bias    10.27
                                        20% maximal IV relative bias     6.71
                                        30% maximal IV relative bias     5.34
                                        10% maximal IV size             24.58
                                        15% maximal IV size             13.96
                                        20% maximal IV size             10.26
                                        25% maximal IV size              8.31
```

```
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.325
                                                     Chi-sq(3) P-val =    0.2285
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe change_votes (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6
c.lnland c.HIDTA)), absorb
> (stateyear) cluster(state)
  3. }
(dropped 15 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3467
                                                      F(  1,    44) =     12.16
                                                      Prob > F      =    0.0011
Total (centered) SS     =  5.14538e+11                Centered R2   =   -1.5460
Total (uncentered) SS   =  5.14538e+11                Uncentered R2 =   -1.5460
Residual SS             =  1.31002e+12                Root MSE      =     19444

------------------------------------------------------------------------------
             |               Robust
 change_votes |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
Llnsum4TVtotS |   3376.209   968.3193     3.49   0.001     1424.689    5327.728
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             13.689
                                                     Chi-sq(4) P-val =    0.0084
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                7.112
                         (Kleibergen-Paap rk Wald F statistic):          6.925
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
```

```
                                          25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.314
                                                     Chi-sq(3) P-val =    0.3458
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       129         129           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 15 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3467
                                                      F(  1,    44) =     12.80
                                                      Prob > F      =    0.0009
Total (centered) SS     =  5.14538e+11                Centered R2   =   -0.8793
Total (uncentered) SS   =  5.14538e+11                Uncentered R2 =   -0.8793
Residual SS             =  9.66993e+11                Root MSE      =     16706

------------------------------------------------------------------------------
             |               Robust
 change_votes |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+---------------------------------------------------------------
LlnsumTQtotS |   8449.389    2362.07     3.58   0.001     3688.949    13209.83
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             18.186
                                                     Chi-sq(4) P-val =    0.0011
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               13.350
                         (Kleibergen-Paap rk Wald F statistic):         10.907
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         5.060
                                                     Chi-sq(3) P-val =    0.1675
------------------------------------------------------------------------------
```

```
Instrumented:         Llnsum4TQtotS
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       129         129           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Panel C: change in total votes
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe change_CASTvotes (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6
c.lnland c.HIDTA)), ab
> sorb(state year) cluster(state)
  3. }
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3484
                                                      F(  1,    44) =      0.42
                                                      Prob > F      =    0.5180
Total (centered) SS     =  1.30059e+12                Centered R2   =   -0.0823
Total (uncentered) SS   =  1.30059e+12                Uncentered R2 =   -0.0823
Residual SS             =  1.40762e+12                Root MSE      =     20126

------------------------------------------------------------------------------
             |               Robust
change_CAST~s |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTVtotS |   1131.796    1736.74     0.65   0.518    -2368.374    4631.966
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             15.860
                                                   Chi-sq(4) P-val =    0.0032
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                8.192
                         (Kleibergen-Paap rk Wald F statistic):          8.442
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         1.549
                                                   Chi-sq(3) P-val =    0.6710
------------------------------------------------------------------------------
```

```
Instrumented:         Llnsum4TVtotS
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3484
                                                      F(  1,    44) =      0.64
                                                      Prob > F      =    0.4266
Total (centered) SS     =  1.30059e+12                Centered R2   =   -0.0750
Total (uncentered) SS   =  1.30059e+12                Uncentered R2 =   -0.0750
Residual SS             =  1.39810e+12                Root MSE      =     20058

------------------------------------------------------------------------------
             |               Robust
change_CAST~s |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTQtotS |   3684.612   4591.824     0.80   0.427    -5569.601    12938.82
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.626
                                                      Chi-sq(4) P-val =    0.0006
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               14.722
                         (Kleibergen-Paap rk Wald F statistic):         11.923
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         0.926
                                                      Chi-sq(3) P-val =    0.8192
------------------------------------------------------------------------------
Instrumented:         LlnsumTQtotS
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
```

```
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe change_CASTvotes (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6
c.lnland c.HIDTA)), ab
> sorb(stateyear) cluster(state)
  3. }
(dropped 15 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3469
                                                      F(  1,    44) =      0.51
                                                      Prob > F      =    0.4774
Total (centered) SS     =  1.07482e+12                Centered R2   =   -0.1242
Total (uncentered) SS   =  1.07482e+12                Uncentered R2 =   -0.1242
Residual SS             =  1.20828e+12                Root MSE      =     18668

------------------------------------------------------------------------------
             |               Robust
change_CAST~s |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   1342.829   1873.971     0.72   0.477    -2433.911     5119.57
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             13.702
                                                      Chi-sq(4) P-val =    0.0083
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                7.115
                         (Kleibergen-Paap rk Wald F statistic):          6.932
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         0.831
                                                      Chi-sq(3) P-val =    0.8421
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
```

```
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       130         130           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 15 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3469
                                                      F(  1,    44) =      0.70
                                                      Prob > F      =    0.4084
Total (centered) SS     =  1.07482e+12                Centered R2   =   -0.1062
Total (uncentered) SS   =  1.07482e+12                Uncentered R2 =   -0.1062
Residual SS             =  1.18892e+12                Root MSE      =     18518

------------------------------------------------------------------------------
             |               Robust
change_CAST~s |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TQtotS |   4179.081   5006.261     0.83   0.408    -5910.376    14268.54
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             18.197
                                                   Chi-sq(4) P-val =    0.0011
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               13.353
                         (Kleibergen-Paap rk Wald F statistic):         10.917
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         0.544
                                                   Chi-sq(3) P-val =    0.9090
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
```

```
-------------+-----------------------------------------|
   stateyear |       130         130           0    *|
-------------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Table 7: Robustness checks on regressor
. * Panel A: equipment received over past 2 years
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum2`var' = c.LlnTOTsum2`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)), absorb(state year
> ) cluster(state)
  3. }
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                 Number of obs =      3905
                                                       F(  1,    44) =      5.78
                                                       Prob > F      =    0.0205
Total (centered) SS     =  224.3009732                 Centered R2   =   -0.0862
Total (uncentered) SS   =  224.3009732                 Uncentered R2 =   -0.0862
Residual SS             =  243.6414189                 Root MSE      =     .2501

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum2TVtotS |   .0171122   .0071167     2.40   0.020     .0027694    .0314549
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             18.219
                                                   Chi-sq(4) P-val =    0.0011
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               13.783
                         (Kleibergen-Paap rk Wald F statistic):         16.160
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.623
                                                   Chi-sq(3) P-val =    0.3051
------------------------------------------------------------------------------
Instrumented:         Llnsum2TVtotS
Excluded instruments: c.LlnTOTsum2TVtotS#c.dD1 c.LlnTOTsum2TVtotS#c.dD6
                      c.LlnTOTsum2TVtotS#c.lnland c.LlnTOTsum2TVtotS#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
```

```
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-------------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      4.90
                                                      Prob > F      =    0.0320
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0722
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.0722
Residual SS             =  240.4972557                Root MSE      =     .2485

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTQtotS |   .0532899   .0240631     2.21   0.032     .0047939    .1017858
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             17.209
                                                   Chi-sq(4) P-val =    0.0018
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               16.645
                         (Kleibergen-Paap rk Wald F statistic):         11.485
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.522
                                                   Chi-sq(3) P-val =    0.2104
------------------------------------------------------------------------------
Instrumented:         LlnsumTQtotS
Excluded instruments: c.LlnTOTsumTQtotS#c.dD1 c.LlnTOTsumTQtotS#c.dD6
                      c.LlnTOTsumTQtotS#c.lnland c.LlnTOTsumTQtotS#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-------------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-------------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
```

```
  2.         ivreghdfe y (Llnsum2`var' = c.LlnTOTsum2`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)), absorb(stateyear)
>  cluster(state)
  3. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      5.18
                                                      Prob > F      =    0.0278
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0776
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0776
Residual SS             =  234.1180722                Root MSE      =     .2454

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum2TVtotS |   .0161689   .0071035     2.28   0.028     .0018528    .0304849
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             17.261
                                                   Chi-sq(4) P-val =    0.0017
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               13.063
                         (Kleibergen-Paap rk Wald F statistic):         14.204
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.637
                                                   Chi-sq(3) P-val =    0.3034
------------------------------------------------------------------------------
Instrumented:         Llnsum2TVtotS
Excluded instruments: c.LlnTOTsum2TVtotS#c.dD1 c.LlnTOTsum2TVtotS#c.dD6
                      c.LlnTOTsum2TVtotS#c.lnland c.LlnTOTsum2TVtotS#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
```

```
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      4.26
                                                      Prob > F      =    0.0449
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0634
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0634
Residual SS             =  231.0256755                Root MSE      =     .2438

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTQtotS |   .0500798   .0242524     2.06   0.045     .0012022    .0989574
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             17.142
                                                      Chi-sq(4) P-val =    0.0018
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               15.596
                         (Kleibergen-Paap rk Wald F statistic):         12.571
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.225
                                                      Chi-sq(3) P-val =    0.2382
------------------------------------------------------------------------------
Instrumented:         LlnsumTQtotS
Excluded instruments: c.LlnTOTsumTQtotS#c.dD1 c.LlnTOTsumTQtotS#c.dD6
                      c.LlnTOTsumTQtotS#c.lnland c.LlnTOTsumTQtotS#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Panel B: equipment received over all past years
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum`var' = c.LlnTOTsum`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)), absorb(state year)
> cluster(state)
  3. }
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------
```

```
Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      6.09
                                                      Prob > F      =    0.0175
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0434
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.0434
Residual SS             =  234.0247385                Root MSE      =     .2451

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTVtotS |   .0122048   .0049445     2.47   0.018     .0022399    .0221698
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             15.617
                                                      Chi-sq(4) P-val =    0.0036
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               22.743
                         (Kleibergen-Paap rk Wald F statistic):          9.786
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.839
                                                      Chi-sq(3) P-val =    0.1839
------------------------------------------------------------------------------
Instrumented:         LlnsumTVtotS
Excluded instruments: c.LlnTOTsumTVtotS#c.dD1 c.LlnTOTsumTVtotS#c.dD6
                      c.LlnTOTsumTVtotS#c.lnland c.LlnTOTsumTVtotS#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      7.08
                                                      Prob > F      =    0.0108
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0395
```

```
Total (uncentered) SS   =  224.3009732                Uncentered R2 =  -0.0395
Residual SS             =  233.1624446                Root MSE      =    .2446

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTQtotS |   .0354993   .0133381     2.66   0.011     .0086182    .0623805
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             20.851
                                                   Chi-sq(4) P-val =    0.0003
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               30.764
                         (Kleibergen-Paap rk Wald F statistic):         11.090
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.721
                                                   Chi-sq(3) P-val =    0.1934
------------------------------------------------------------------------------
Instrumented:         LlnsumTQtotS
Excluded instruments: c.LlnTOTsumTQtotS#c.dD1 c.LlnTOTsumTQtotS#c.dD6
                      c.LlnTOTsumTQtotS#c.lnland c.LlnTOTsumTQtotS#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum`var' = c.LlnTOTsum`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)), absorb(stateyear) c
> luster(state)
  3. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =     3889
                                                      F(  1,    44) =     5.54
                                                      Prob > F      =   0.0231
Total (centered) SS     =  217.2529263                Centered R2   =  -0.0406
```

```
Total (uncentered) SS   =  217.2529263                Uncentered R2 =  -0.0406
Residual SS             =  226.0752765                Root MSE      =    .2412

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTVtotS |   .0116207   .0049363     2.35   0.023     .0016722    .0215692
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             14.146
                                                   Chi-sq(4) P-val =    0.0068
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               21.164
                         (Kleibergen-Paap rk Wald F statistic):          8.563
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.639
                                                   Chi-sq(3) P-val =    0.2002
------------------------------------------------------------------------------
Instrumented:         LlnsumTVtotS
Excluded instruments: c.LlnTOTsumTVtotS#c.dD1 c.LlnTOTsumTVtotS#c.dD6
                      c.LlnTOTsumTVtotS#c.lnland c.LlnTOTsumTVtotS#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =     3889
                                                      F(  1,    44) =     6.32
                                                      Prob > F      =   0.0157
Total (centered) SS     =  217.2529263                Centered R2   =  -0.0344
Total (uncentered) SS   =  217.2529263                Uncentered R2 =  -0.0344
Residual SS             =  224.7202689                Root MSE      =    .2404

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTQtotS |   .0331217    .013173     2.51   0.016     .0065732    .0596701
```

```
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             20.503
                                                  Chi-sq(4) P-val =    0.0004
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               29.958
                         (Kleibergen-Paap rk Wald F statistic):         11.094
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.241
                                                  Chi-sq(3) P-val =    0.2366
------------------------------------------------------------------------------
Instrumented:         LlnsumTQtotS
Excluded instruments: c.LlnTOTsumTQtotS#c.dD1 c.LlnTOTsumTQtotS#c.dD6
                      c.LlnTOTsumTQtotS#c.lnland c.LlnTOTsumTQtotS#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Panel C: equipment received by any agency over the past 4 past years
. foreach var in "TVtot" "TQtot" {
  2.         ivreghdfe y (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)), absorb(state year
> ) cluster(state)
  3. }
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      4.99
                                                      Prob > F      =    0.0307
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0156
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.0156
Residual SS             =  227.8056424                Root MSE      =     .2418

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtot |    .007552    .003382     2.23   0.031     .0007361    .0143679
------------------------------------------------------------------------------
```

```
Underidentification test (Kleibergen-Paap rk LM statistic):             21.586
                                                      Chi-sq(4) P-val =    0.0002
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               61.748
                         (Kleibergen-Paap rk Wald F statistic):         41.287
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.668
                                                      Chi-sq(3) P-val =    0.1978
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtot
Excluded instruments: c.LlnTOTsum4TVtot#c.dD1 c.LlnTOTsum4TVtot#c.dD6
                      c.LlnTOTsum4TVtot#c.lnland c.LlnTOTsum4TVtot#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      4.81
                                                      Prob > F      =    0.0336
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0094
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.0094
Residual SS             =  226.4018137                Root MSE      =     .2411

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TQtot |   .0162333   .0074008     2.19   0.034      .001318    .0311486
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             22.610
                                                      Chi-sq(4) P-val =    0.0002
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):              102.423
                         (Kleibergen-Paap rk Wald F statistic):         38.597
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
```

```
                                        30% maximal IV relative bias     5.34
                                        10% maximal IV size             24.58
                                        15% maximal IV size             13.96
                                        20% maximal IV size             10.26
                                        25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         5.469
                                                    Chi-sq(3) P-val =    0.1405
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtot
Excluded instruments: c.LlnTOTsum4TQtot#c.dD1 c.LlnTOTsum4TQtot#c.dD6
                      c.LlnTOTsum4TQtot#c.lnland c.LlnTOTsum4TQtot#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtot" "TQtot" {
  2.         ivreghdfe y (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA)), absorb(stateyear)
>  cluster(state)
  3. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      3.96
                                                      Prob > F      =    0.0527
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0117
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0117
Residual SS             =  219.8005214                Root MSE      =     .2378

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtot |   .0066273   .0033285     1.99   0.053    -.0000809    .0133355
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             21.101
                                                    Chi-sq(4) P-val =    0.0003
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               63.253
                         (Kleibergen-Paap rk Wald F statistic):         50.709
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                        10% maximal IV relative bias    10.27
                                        20% maximal IV relative bias     6.71
```

```
                                          30% maximal IV relative bias     5.34
                                          10% maximal IV size             24.58
                                          15% maximal IV size             13.96
                                          20% maximal IV size             10.26
                                          25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.612
                                                    Chi-sq(3) P-val =    0.2025
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtot
Excluded instruments: c.LlnTOTsum4TVtot#c.dD1 c.LlnTOTsum4TVtot#c.dD6
                      c.LlnTOTsum4TVtot#c.lnland c.LlnTOTsum4TVtot#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      3.84
                                                      Prob > F      =    0.0564
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0067
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0067
Residual SS             =  218.7190601                Root MSE      =     .2372

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TQtot |   .0146257   .0074633     1.96   0.056    -.0004157     .029667
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             21.933
                                                    Chi-sq(4) P-val =    0.0002
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):              103.244
                         (Kleibergen-Paap rk Wald F statistic):         42.817
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                          10% maximal IV relative bias    10.27
                                          20% maximal IV relative bias     6.71
                                          30% maximal IV relative bias     5.34
                                          10% maximal IV size             24.58
                                          15% maximal IV size             13.96
                                          20% maximal IV size             10.26
                                          25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
```

```
Hansen J statistic (overidentification test of all instruments):         4.513
                                                      Chi-sq(3) P-val =    0.2111
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtot
Excluded instruments: c.LlnTOTsum4TQtot#c.dD1 c.LlnTOTsum4TQtot#c.dD6
                      c.LlnTOTsum4TQtot#c.lnland c.LlnTOTsum4TQtot#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Panel D: indicator variable for transfers received
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (received = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland c.HIDTA)),
absorb(state year) cl
> uster(state)
  3. }
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      5.77
                                                      Prob > F      =    0.0206
Total (centered) SS     =  224.3009732                Centered R2   =   -0.1570
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.1570
Residual SS             =   259.508527                Root MSE      =     .2581

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    received |   .2032046     .08459     2.40   0.021     .0327247    .3736846
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             15.176
                                                      Chi-sq(4) P-val =    0.0044
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                 7.643
                         (Kleibergen-Paap rk Wald F statistic):           7.683
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.454
```

```
                                                    Chi-sq(3) P-val =    0.3268
------------------------------------------------------------------------------
Instrumented:         received
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      5.61
                                                      Prob > F      =    0.0223
Total (centered) SS     =  224.3009732                Centered R2   =   -0.1662
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.1662
Residual SS             =  261.5812867                Root MSE      =     .2591

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    received |   .2090632   .0882506     2.37   0.022     .0312057    .3869206
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             15.399
                                                    Chi-sq(4) P-val =    0.0039
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                7.492
                         (Kleibergen-Paap rk Wald F statistic):          7.578
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.667
                                                    Chi-sq(3) P-val =    0.2997
------------------------------------------------------------------------------
Instrumented:         received
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
```

```
                    nb: total SS, model F and R2s are after partialling-out;
                        any small-sample adjustments include partialled-out
                        variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.
.         ivreghdfe y (received = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland c.HIDTA)),
absorb(stateyear) cluste
> r(state)
  3. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      4.87
                                                      Prob > F      =    0.0326
Total (centered) SS     =  217.2529263                Centered R2   =   -0.1355
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.1355
Residual SS             =  246.6959684                Root MSE      =     .2519

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    received |     .18702   .0847709     2.21   0.033     .0161753    .3578646
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             14.412
                                                      Chi-sq(4) P-val =    0.0061
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                6.945
                         (Kleibergen-Paap rk Wald F statistic):          6.808
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.633
                                                      Chi-sq(3) P-val =    0.3040
------------------------------------------------------------------------------
Instrumented:         received
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
```

```
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      4.47
                                                      Prob > F      =    0.0402
Total (centered) SS     =  217.2529263                Centered R2   =   -0.1337
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.1337
Residual SS             =  246.3056253                Root MSE      =     .2517

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    received |   .1857572   .0878797     2.11   0.040     .0086474    .3628671
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             14.462
                                                      Chi-sq(4) P-val =    0.0060
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                6.714
                         (Kleibergen-Paap rk Wald F statistic):          6.617
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.883
                                                      Chi-sq(3) P-val =    0.2743
------------------------------------------------------------------------------
Instrumented:         received
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------
```

```
Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Table 8: Results with county fixed effects
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = LlnTOTsum4`var' c.LlnTOTsum4`var'#(c.dD1 c.dD6
c.lnland c.HIDTA)) if
>  year>2006, absorb(countyFIPS decade) cluster(state)
  3. }
(dropped 881 singleton observations)
(MWFE estimator converged in 3 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        44                Number of obs =      3024
                                                      F(  1,    43) =      6.43
                                                      Prob > F      =    0.0150
Total (centered) SS     =  96.28820715                Centered R2   =   -0.0738
Total (uncentered) SS   =  96.28820715                Uncentered R2 =   -0.0738
Residual SS             =  103.3897756                Root MSE      =      .185

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   .0168292   .0066383     2.54   0.015     .0034417    .0302167
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             13.483
                                                   Chi-sq(5) P-val =    0.0192
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               32.493
                         (Kleibergen-Paap rk Wald F statistic):         11.187
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    18.37
                                         10% maximal IV relative bias    10.83
                                         20% maximal IV relative bias     6.77
                                         30% maximal IV relative bias     5.25
                                         10% maximal IV size             26.87
                                         15% maximal IV size             15.09
                                         20% maximal IV size             10.98
                                         25% maximal IV size              8.84
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         7.731
                                                   Chi-sq(4) P-val =    0.1019
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: LlnTOTsum4TVtotSinst c.LlnTOTsum4TVtotSinst#c.dD1
                      c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
```

```
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
  countyFIPS |      1319        1319           0    *|
      decade |         2           0           2     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 881 singleton observations)
(MWFE estimator converged in 3 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        44                Number of obs =      3024
                                                      F(  1,    43) =      6.85
                                                      Prob > F      =    0.0122
Total (centered) SS     =  96.28820715                Centered R2   =   -0.0583
Total (uncentered) SS   =  96.28820715                Uncentered R2 =   -0.0583
Residual SS             =  101.9030026                Root MSE      =     .1837

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TQtotS |   .0542114   .0207188     2.62   0.012      .012428    .0959949
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             11.185
                                                   Chi-sq(5) P-val =    0.0478
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               33.970
                         (Kleibergen-Paap rk Wald F statistic):          9.355
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    18.37
                                         10% maximal IV relative bias    10.83
                                         20% maximal IV relative bias     6.77
                                         30% maximal IV relative bias     5.25
                                         10% maximal IV size             26.87
                                         15% maximal IV size             15.09
                                         20% maximal IV size             10.98
                                         25% maximal IV size              8.84
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         9.515
                                                   Chi-sq(4) P-val =    0.0494
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Excluded instruments: LlnTOTsum4TQtotSinst c.LlnTOTsum4TQtotSinst#c.dD1
                      c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
```

```
-------------+-----------------------------------------|
  countyFIPS |      1319        1319           0    *|
      decade |         2           0           2     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Table 9: Robustness checks on instruments
. * Panel A: adding non-time varying instrument
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = dD1 dD6 lnland HIDTA c.LlnTOTsum4`var'#(c.dD1
c.dD6 c.lnland c.HIDTA
> )) if year>2006 & year~=2009 & year~=2013, absorb(state year) cluster(state)
  3. }
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      4.52
                                                      Prob > F      =    0.0391
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0693
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.0693
Residual SS             =  239.8471139                Root MSE      =     .2481

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   .0135949   .0063944     2.13   0.039     .0007078    .0264821
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             17.756
                                                      Chi-sq(8) P-val =    0.0231
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                 7.173
                         (Kleibergen-Paap rk Wald F statistic):           7.027
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    20.25
                                         10% maximal IV relative bias    11.39
                                         20% maximal IV relative bias     6.69
                                         30% maximal IV relative bias     4.99
                                         10% maximal IV size             33.84
                                         15% maximal IV size             18.54
                                         20% maximal IV size             13.24
                                         25% maximal IV size             10.50
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):        11.353
                                                      Chi-sq(7) P-val =    0.1239
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: dD1 dD6 lnland HIDTA c.LlnTOTsum4TVtotSinst#c.dD1
                      c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------
```

```
Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      5.52
                                                      Prob > F      =    0.0234
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0540
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.0540
Residual SS             =  236.4218553                Root MSE      =     .2463

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TQtotS |   .0412123   .0175465     2.35   0.023     .0058496    .0765749
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             21.826
                                                   Chi-sq(8) P-val =    0.0052
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               10.270
                         (Kleibergen-Paap rk Wald F statistic):          9.997
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    20.25
                                         10% maximal IV relative bias    11.39
                                         20% maximal IV relative bias     6.69
                                         30% maximal IV relative bias     4.99
                                         10% maximal IV size             33.84
                                         15% maximal IV size             18.54
                                         20% maximal IV size             13.24
                                         25% maximal IV size             10.50
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):        12.616
                                                   Chi-sq(7) P-val =    0.0820
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Excluded instruments: dD1 dD6 lnland HIDTA c.LlnTOTsum4TQtotSinst#c.dD1
                      c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
```

```
-------------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = dD1 dD6 lnland HIDTA c.LlnTOTsum4`var'#(c.dD1
c.dD6 c.lnland c.HIDTA
> )) if year>2006 & year~=2009 & year~=2013, absorb(stateyear) cluster(state)
  3. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      4.24
                                                      Prob > F      =    0.0453
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0600
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0600
Residual SS             =   230.286503                Root MSE      =     .2434

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   .0124533   .0060453     2.06   0.045     .0002697    .0246369
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             18.087
                                                   Chi-sq(8) P-val =    0.0206
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                6.191
                         (Kleibergen-Paap rk Wald F statistic):          8.295
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    20.25
                                         10% maximal IV relative bias    11.39
                                         20% maximal IV relative bias     6.69
                                         30% maximal IV relative bias     4.99
                                         10% maximal IV size             33.84
                                         15% maximal IV size             18.54
                                         20% maximal IV size             13.24
                                         25% maximal IV size             10.50
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):        11.160
                                                   Chi-sq(7) P-val =    0.1318
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: dD1 dD6 lnland HIDTA c.LlnTOTsum4TVtotSinst#c.dD1
                      c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
```

```
   stateyear |       131         131           0    *|
-------------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      4.61
                                                      Prob > F      =    0.0372
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0529
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0529
Residual SS             =  228.7360914                Root MSE      =     .2426

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTQtotS |   .0403593    .018788     2.15   0.037     .0024945    .0782241
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             20.719
                                                      Chi-sq(8) P-val =    0.0079
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                9.188
                         (Kleibergen-Paap rk Wald F statistic):          9.102
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    20.25
                                         10% maximal IV relative bias    11.39
                                         20% maximal IV relative bias     6.69
                                         30% maximal IV relative bias     4.99
                                         10% maximal IV size             33.84
                                         15% maximal IV size             18.54
                                         20% maximal IV size             13.24
                                         25% maximal IV size             10.50
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):        11.790
                                                      Chi-sq(7) P-val =    0.1077
------------------------------------------------------------------------------
Instrumented:         LlnsumTQtotS
Excluded instruments: dD1 dD6 lnland HIDTA c.LlnTOTsumTQtotSinst#c.dD1
                      c.LlnTOTsumTQtotSinst#c.dD6
                      c.LlnTOTsumTQtotSinst#c.lnland
                      c.LlnTOTsumTQtotSinst#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-------------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+-----------------------------------------|
   stateyear |       131         131           0    *|
-------------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Panel B: instruments only in level
```

```
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = dD1 dD6 lnland HIDTA) if year>2006 &
year~=2009 & year~=2013, absorb
> (state year) cluster(state)
  3. }
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      6.03
                                                      Prob > F      =    0.0181
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0898
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.0898
Residual SS             =  244.4477085                Root MSE      =     .2505

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   .0154516    .006294     2.45   0.018     .0027668    .0281363
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             17.445
                                                   Chi-sq(4) P-val =    0.0016
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               12.493
                         (Kleibergen-Paap rk Wald F statistic):         11.674
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.773
                                                   Chi-sq(3) P-val =    0.2871
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: dD1 dD6 lnland HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 7 iterations)

IV (2SLS) estimation
--------------------
```

```
Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      6.55
                                                      Prob > F      =    0.0140
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0697
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.0697
Residual SS             =  239.9281058                Root MSE      =     .2482

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TQtotS |    .046502    .018163     2.56   0.014     .0098969     .083107
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             20.361
                                                   Chi-sq(4) P-val =    0.0004
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               18.379
                         (Kleibergen-Paap rk Wald F statistic):         13.420
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.637
                                                   Chi-sq(3) P-val =    0.3034
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Excluded instruments: dD1 dD6 lnland HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = dD1 dD6 lnland HIDTA) if year>2006 &
year~=2009 & year~=2013, absorb
> (stateyear) cluster(state)
  3. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------
```

```
Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      5.21
                                                      Prob > F      =    0.0273
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0847
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0847
Residual SS             =  235.6641285                Root MSE      =     .2462

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   .0148361   .0064972     2.28   0.027     .0017419    .0279303
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):              16.075
                                                      Chi-sq(4) P-val =    0.0029
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                11.742
                         (Kleibergen-Paap rk Wald F statistic):          10.355
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         4.063
                                                      Chi-sq(3) P-val =    0.2547
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: dD1 dD6 lnland HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      6.00
                                                      Prob > F      =    0.0184
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0690
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0690
Residual SS             =  232.2363611                Root MSE      =     .2444
```

```
------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TQtotS |   .0459118   .0187436     2.45   0.018     .0081366    .0836869
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             19.860
                                                    Chi-sq(4) P-val =    0.0005
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               17.774
                         (Kleibergen-Paap rk Wald F statistic):         13.039
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    16.85
                                         10% maximal IV relative bias    10.27
                                         20% maximal IV relative bias     6.71
                                         30% maximal IV relative bias     5.34
                                         10% maximal IV size             24.58
                                         15% maximal IV size             13.96
                                         20% maximal IV size             10.26
                                         25% maximal IV size              8.31
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         3.740
                                                    Chi-sq(3) P-val =    0.2910
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Excluded instruments: dD1 dD6 lnland HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Panel C: using Masera's (2020, 2021) formulation
. gen D1mil_dummy=0 if dD1mil~=.

. replace D1mil_dummy=1 if D1mil<12.5 /* we have miles */
(135 real changes made)

. gen D1_dummy=0 if dD1~=.

. replace D1_dummy=1 if D1<12.5 /* we have miles */
(30 real changes made)

. gen D6_dummy=0 if dD6~=.

. replace D6_dummy=1 if D6<12.5 /* we have miles */
(0 real changes made)

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = c.eqp_revA#(c.D1_dummy c.D6_dummy c.lnland
c.HIDTA)) i.year#c.D1mil_
> dummy, absorb(state year) cluster(state)
  3. }
```

```
Warning - collinearities detected
Vars dropped:       c.eqp_revA#c.D6_dummy
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                  Number of obs =      3905
                                                        F(  9,    44) =      7.96
                                                        Prob > F      =    0.0000
Total (centered) SS     =  224.3009732                  Centered R2   =   -0.1917
Total (uncentered) SS   =  224.3009732                  Uncentered R2 =   -0.1917
Residual SS             =  267.2983881                  Root MSE      =     .2622

------------------------------------------------------------------------------
                   |               Robust
                 y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------------+----------------------------------------------------------------
     Llnsum4TVtotS |    .022607   .0104489     2.16   0.036     .0015485    .0436654
                   |
year#c.D1mil_dummy |
             2007  |  -.0121438   .0666402    -0.18   0.856    -.1464484    .1221607
             2008  |   -.029363    .067237    -0.44   0.664    -.1648703    .1061443
             2010  |  -.0008614   .0635486    -0.01   0.989    -.1289353    .1272124
             2011  |   .1288114   .0304022     4.24   0.000     .0675398     .190083
             2012  |  -.0227185   .0681334    -0.33   0.740    -.1600324    .1145954
             2014  |  -.0694797   .0902189    -0.77   0.445     -.251304    .1123445
             2015  |    .055724   .0685108     0.81   0.420    -.0823505    .1937984
             2016  |  -.0807185   .0567594    -1.42   0.162    -.1951095    .0336725
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             13.045
                                                   Chi-sq(3) P-val =    0.0045
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                7.622
                         (Kleibergen-Paap rk Wald F statistic):          9.851
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    13.91
                                         10% maximal IV relative bias     9.08
                                         20% maximal IV relative bias     6.46
                                         30% maximal IV relative bias     5.39
                                         10% maximal IV size             22.30
                                         15% maximal IV size             12.83
                                         20% maximal IV size              9.54
                                         25% maximal IV size              7.80
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         0.141
                                                   Chi-sq(2) P-val =    0.9318
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Included instruments: 2007b.year#c.D1mil_dummy 2008.year#c.D1mil_dummy
                      2010.year#c.D1mil_dummy 2011.year#c.D1mil_dummy
                      2012.year#c.D1mil_dummy 2014.year#c.D1mil_dummy
                      2015.year#c.D1mil_dummy 2016.year#c.D1mil_dummy
Excluded instruments: c.eqp_revA#c.D1_dummy c.eqp_revA#c.lnland
                      c.eqp_revA#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Dropped collinear:    c.eqp_revA#c.D6_dummy
------------------------------------------------------------------------------
```

```
Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
Warning - collinearities detected
Vars dropped:       c.eqp_revA#c.D6_dummy
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  9,    44) =      5.26
                                                      Prob > F      =    0.0001
Total (centered) SS     =  224.3009732                Centered R2   =   -0.1410
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.1410
Residual SS             =  255.9181366                Root MSE      =     .2566

------------------------------------------------------------------------------
                   |               Robust
                 y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------------+----------------------------------------------------------------
     LLnsum4TQtotS |   .0657213   .0297118     2.21   0.032     .0058411    .1256015
                   |
year#c.D1mil_dummy |
             2007  |  -.0262997   .0628562    -0.42   0.678     -.152978    .1003787
             2008  |  -.0380284   .0684378    -0.56   0.581    -.1759558     .099899
             2010  |   .0132803   .0588113     0.23   0.822     -.105246    .1318067
             2011  |   .1252204   .0255822     4.89   0.000     .0736629    .1767779
             2012  |  -.0234576   .0617195    -0.38   0.706     -.147845    .1009299
             2014  |  -.0871393    .087043    -1.00   0.322     -.262563    .0882845
             2015  |   .0137129   .0556801     0.25   0.807     -.098503    .1259288
             2016  |  -.0804797   .0607479    -1.32   0.192    -.2029089    .0419496
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             12.748
                                                      Chi-sq(3) P-val =    0.0052
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                9.531
                         (Kleibergen-Paap rk Wald F statistic):          8.434
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    13.91
                                         10% maximal IV relative bias     9.08
                                         20% maximal IV relative bias     6.46
                                         30% maximal IV relative bias     5.39
                                         10% maximal IV size             22.30
                                         15% maximal IV size             12.83
                                         20% maximal IV size              9.54
                                         25% maximal IV size              7.80
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         0.321
                                                      Chi-sq(2) P-val =    0.8518
------------------------------------------------------------------------------
Instrumented:         LLnsum4TQtotS
Included instruments: 2007b.year#c.D1mil_dummy 2008.year#c.D1mil_dummy
                      2010.year#c.D1mil_dummy 2011.year#c.D1mil_dummy
                      2012.year#c.D1mil_dummy 2014.year#c.D1mil_dummy
```

```
                      2015.year#c.D1mil_dummy 2016.year#c.D1mil_dummy
Excluded instruments: c.eqp_revA#c.D1_dummy c.eqp_revA#c.lnland
                      c.eqp_revA#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Dropped collinear:    c.eqp_revA#c.D6_dummy
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = c.eqp_revA#(c.D1_dummy c.D6_dummy c.lnland
c.HIDTA)) i.year#c.D1mil_
> dummy, absorb(stateyear) cluster(state)
  3. }
(dropped 16 singleton observations)
Warning - collinearities detected
Vars dropped:       c.eqp_revA#c.D6_dummy
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  9,    44) =      6.32
                                                      Prob > F      =    0.0000
Total (centered) SS     =  217.2529263                Centered R2   =   -0.1240
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.1240
Residual SS             =  244.1873659                Root MSE      =     .2509

------------------------------------------------------------------------------
                   |               Robust
                 y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------------+----------------------------------------------------------------
     Llnsum4TVtotS |   .0181183   .0081642     2.22   0.032     .0016645    .0345721
                   |
year#c.D1mil_dummy |
             2007  |  -.0108088    .060567    -0.18   0.859    -.1328735     .111256
             2008  |  -.0341961   .0680158    -0.50   0.618     -.171273    .1028807
             2010  |  -.0052961   .0686336    -0.08   0.939    -.1436181    .1330259
             2011  |   .1159855   .0263304     4.41   0.000     .0629201     .169051
             2012  |  -.0485533   .0663316    -0.73   0.468    -.1822359    .0851294
             2014  |  -.0870825   .0910289    -0.96   0.344    -.2705393    .0963742
             2015  |   .0509839   .0532114     0.96   0.343    -.0562566    .1582244
             2016  |  -.0527655   .0537403    -0.98   0.332    -.1610719    .0555408
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             14.792
                                                      Chi-sq(3) P-val =    0.0020
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):                 9.936
                         (Kleibergen-Paap rk Wald F statistic):          14.649
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    13.91
```

```
                                          10% maximal IV relative bias     9.08
                                          20% maximal IV relative bias     6.46
                                          30% maximal IV relative bias     5.39
                                          10% maximal IV size             22.30
                                          15% maximal IV size             12.83
                                          20% maximal IV size              9.54
                                          25% maximal IV size              7.80
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         0.211
                                                 Chi-sq(2) P-val =    0.8999
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Included instruments: 2007b.year#c.D1mil_dummy 2008.year#c.D1mil_dummy
                      2010.year#c.D1mil_dummy 2011.year#c.D1mil_dummy
                      2012.year#c.D1mil_dummy 2014.year#c.D1mil_dummy
                      2015.year#c.D1mil_dummy 2016.year#c.D1mil_dummy
Excluded instruments: c.eqp_revA#c.D1_dummy c.eqp_revA#c.lnland
                      c.eqp_revA#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Dropped collinear:    c.eqp_revA#c.D6_dummy
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
Warning - collinearities detected
Vars dropped:       c.eqp_revA#c.D6_dummy
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  9,    44) =      5.25
                                                      Prob > F      =    0.0001
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0891
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0891
Residual SS             =  236.6008865                Root MSE      =      .247

------------------------------------------------------------------------------
                   |               Robust
                 y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------------+----------------------------------------------------------------
     Llnsum4TQtotS |   .0525559   .0237309     2.21   0.032     .0047294    .1003824
                   |
year#c.D1mil_dummy |
             2007  |  -.0206513   .0573401    -0.36   0.720    -.1362127    .0949102
             2008  |  -.0398616   .0693767    -0.57   0.569    -.1796811    .0999579
             2010  |   .0072303   .0649193     0.11   0.912    -.1236059    .1380666
             2011  |   .1177785   .0234516     5.02   0.000     .0705149     .165042
             2012  |  -.0474304   .0617506    -0.77   0.447    -.1718806    .0770197
             2014  |  -.0983957    .088179    -1.12   0.271    -.2761088    .0793175
```

```
            2015  |   .0146427   .0447645     0.33   0.745    -.0755741    .1048596
            2016  |  -.0551266   .0568429    -0.97   0.337    -.1696859    .0594328
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             15.700
                                                      Chi-sq(3) P-val =    0.0013
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               12.788
                         (Kleibergen-Paap rk Wald F statistic):         12.802
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    13.91
                                         10% maximal IV relative bias     9.08
                                         20% maximal IV relative bias     6.46
                                         30% maximal IV relative bias     5.39
                                         10% maximal IV size             22.30
                                         15% maximal IV size             12.83
                                         20% maximal IV size              9.54
                                         25% maximal IV size              7.80
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         0.241
                                                      Chi-sq(2) P-val =    0.8864
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Included instruments: 2007b.year#c.D1mil_dummy 2008.year#c.D1mil_dummy
                      2010.year#c.D1mil_dummy 2011.year#c.D1mil_dummy
                      2012.year#c.D1mil_dummy 2014.year#c.D1mil_dummy
                      2015.year#c.D1mil_dummy 2016.year#c.D1mil_dummy
Excluded instruments: c.eqp_revA#c.D1_dummy c.eqp_revA#c.lnland
                      c.eqp_revA#c.HIDTA
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
Dropped collinear:    c.eqp_revA#c.D6_dummy
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. * Panel D: adding Bove and Gravilova (2017) instrument
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA) BGinst), absorb(sta
> te year) cluster(state)
  3. }
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      4.26
                                                      Prob > F      =    0.0449
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0059
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.0059
Residual SS             =  225.6274518                Root MSE      =     .2407
```

```
------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   .0041001   .0019861     2.06   0.045     .0000974    .0081027
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             26.909
                                                  Chi-sq(5) P-val =    0.0001
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):              181.817
                         (Kleibergen-Paap rk Wald F statistic):         98.808
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    18.37
                                         10% maximal IV relative bias    10.83
                                         20% maximal IV relative bias     6.77
                                         30% maximal IV relative bias     5.25
                                         10% maximal IV size             26.87
                                         15% maximal IV size             15.09
                                         20% maximal IV size             10.98
                                         25% maximal IV size              8.84
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         6.083
                                                  Chi-sq(4) P-val =    0.1931
------------------------------------------------------------------------------
Instrumented:         Llnsum4TVtotS
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA BGinst
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 8 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      4.97
                                                      Prob > F      =    0.0309
Total (centered) SS     =  224.3009732                Centered R2   =   -0.0057
Total (uncentered) SS   =  224.3009732                Uncentered R2 =   -0.0057
Residual SS             =  225.5806057                Root MSE      =     .2406

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TQtotS |   .0149301   .0066968     2.23   0.031     .0014335    .0284268
------------------------------------------------------------------------------
```

```
Underidentification test (Kleibergen-Paap rk LM statistic):              24.260
                                                      Chi-sq(5) P-val =    0.0002
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):               175.516
                         (Kleibergen-Paap rk Wald F statistic):         102.357
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    18.37
                                         10% maximal IV relative bias    10.83
                                         20% maximal IV relative bias     6.77
                                         30% maximal IV relative bias     5.25
                                         10% maximal IV size             26.87
                                         15% maximal IV size             15.09
                                         20% maximal IV size             10.98
                                         25% maximal IV size              8.84
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         6.009
                                                      Chi-sq(4) P-val =    0.1985
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA BGinst
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y (Llnsum4`var' = c.LlnTOTsum4`var'#(c.dD1 c.dD6 c.lnland
c.HIDTA) BGinst), absorb(sta
> teyear) cluster(state)
  3. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      4.08
                                                      Prob > F      =    0.0494
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0065
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0065
Residual SS             =  218.6744779                Root MSE      =     .2372

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   .0039905    .001975     2.02   0.049     .0000101     .007971
```

```
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             26.195
                                                    Chi-sq(5) P-val =    0.0001
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):              191.661
                         (Kleibergen-Paap rk Wald F statistic):         98.745
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    18.37
                                         10% maximal IV relative bias    10.83
                                         20% maximal IV relative bias     6.77
                                         30% maximal IV relative bias     5.25
                                         10% maximal IV size             26.87
                                         15% maximal IV size             15.09
                                         20% maximal IV size             10.98
                                         25% maximal IV size              8.84
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         5.944
                                                    Chi-sq(4) P-val =    0.2033
------------------------------------------------------------------------------
Instrumented:         LlnsumTVtotS
Excluded instruments: c.LlnTOTsum4TVtotSinst#c.dD1 c.LlnTOTsum4TVtotSinst#c.dD6
                      c.LlnTOTsum4TVtotSinst#c.lnland
                      c.LlnTOTsum4TVtotSinst#c.HIDTA BGinst
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

IV (2SLS) estimation
--------------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      4.74
                                                      Prob > F      =    0.0348
Total (centered) SS     =  217.2529263                Centered R2   =   -0.0060
Total (uncentered) SS   =  217.2529263                Uncentered R2 =   -0.0060
Residual SS             =  218.5530269                Root MSE      =     .2371

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LlnsumTQtotS |   .0144965   .0066554     2.18   0.035     .0010833    .0279096
------------------------------------------------------------------------------
Underidentification test (Kleibergen-Paap rk LM statistic):             23.653
                                                    Chi-sq(5) P-val =    0.0003
------------------------------------------------------------------------------
Weak identification test (Cragg-Donald Wald F statistic):              183.150
                         (Kleibergen-Paap rk Wald F statistic):         97.251
Stock-Yogo weak ID test critical values:  5% maximal IV relative bias    18.37
```

```
                                          10% maximal IV relative bias    10.83
                                          20% maximal IV relative bias     6.77
                                          30% maximal IV relative bias     5.25
                                          10% maximal IV size             26.87
                                          15% maximal IV size             15.09
                                          20% maximal IV size             10.98
                                          25% maximal IV size              8.84
Source: Stock-Yogo (2005).  Reproduced by permission.
NB: Critical values are for Cragg-Donald F statistic and i.i.d. errors.
------------------------------------------------------------------------------
Hansen J statistic (overidentification test of all instruments):         5.394
                                                     Chi-sq(4) P-val =    0.2492
------------------------------------------------------------------------------
Instrumented:         Llnsum4TQtotS
Excluded instruments: c.LlnTOTsum4TQtotSinst#c.dD1 c.LlnTOTsum4TQtotSinst#c.dD6
                      c.LlnTOTsum4TQtotSinst#c.lnland
                      c.LlnTOTsum4TQtotSinst#c.HIDTA BGinst
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation


. 
. * Table A1: OLS results
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y Llnsum4`var', absorb(state year) cluster(state)
  3. }
(MWFE estimator converged in 8 iterations)

OLS estimation
--------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                 Number of obs =      3905
                                                       F(  1,    44) =      0.04
                                                       Prob > F      =    0.8502
Total (centered) SS     =  224.3009732                 Centered R2   =    0.0000
Total (uncentered) SS   =  224.3009732                 Uncentered R2 =    0.0000
Residual SS             =  224.2982695                 Root MSE      =     .2399

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TVtotS |   .0001769   .0009313     0.19   0.850    -.0017001    .0020539
------------------------------------------------------------------------------
Included instruments: Llnsum4TVtotS
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
```

```
-------------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+-----------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-------------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(MWFE estimator converged in 7 iterations)

OLS estimation
--------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3905
                                                      F(  1,    44) =      0.64
                                                      Prob > F      =    0.4293
Total (centered) SS     =  224.3009732                Centered R2   =    0.0002
Total (uncentered) SS   =  224.3009732                Uncentered R2 =    0.0002
Residual SS             =  224.2673039                Root MSE      =     .2399

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
Llnsum4TQtotS |   .0020606    .002583     0.80   0.429    -.0031452    .0072664
------------------------------------------------------------------------------
Included instruments: Llnsum4TQtotS
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-------------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+-----------------------------------------|
       state |        45          45           0    *|
        year |         8           0           8     |
-------------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. foreach var in "TVtotS" "TQtotS" {
  2.         ivreghdfe y Llnsum4`var', absorb(stateyear) cluster(state)
  3. }
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

OLS estimation
--------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      0.04
                                                      Prob > F      =    0.8392
Total (centered) SS     =  217.2529263                Centered R2   =    0.0000
Total (uncentered) SS   =  217.2529263                Uncentered R2 =    0.0000
Residual SS             =  217.2500379                Root MSE      =     .2364

------------------------------------------------------------------------------
```

```
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LLnsum4TVtotS |  -.0001882   .0009216    -0.20   0.839    -.0020455    .0016692
------------------------------------------------------------------------------
Included instruments: LLnsum4TVtotS
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation
(dropped 16 singleton observations)
(MWFE estimator converged in 1 iterations)

OLS estimation
--------------

Estimates efficient for homoskedasticity only
Statistics robust to heteroskedasticity and clustering on state

Number of clusters (state) =        45                Number of obs =      3889
                                                      F(  1,    44) =      0.27
                                                      Prob > F      =    0.6088
Total (centered) SS     =  217.2529263                Centered R2   =    0.0001
Total (uncentered) SS   =  217.2529263                Uncentered R2 =    0.0001
Residual SS             =  217.2402743                Root MSE      =     .2364

------------------------------------------------------------------------------
             |               Robust
           y |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
LLnsum4TQtotS |   .0012959   .0025142     0.52   0.609     -.003771    .0063629
------------------------------------------------------------------------------
Included instruments: LLnsum4TQtotS
Partialled-out:       _cons
                      nb: total SS, model F and R2s are after partialling-out;
                          any small-sample adjustments include partialled-out
                          variables in regressor count K
------------------------------------------------------------------------------

Absorbed degrees of freedom:
-----------------------------------------------------+
 Absorbed FE | Categories  - Redundant  = Num. Coefs |
-------------+---------------------------------------|
   stateyear |       131         131           0    *|
-----------------------------------------------------+
* = FE nested within cluster; treated as redundant for DoF computation

.
. clear
```