Stata Textbook Examples
Introductory Econometrics: A Modern Approach by Jeffrey M. Wooldridge (1st & 2nd eds.)
Chapter 11 - Further Issues in Using OLS with Time Series Data

Example 11.1: Static Model

Dataset is not available

Example 11.2: Finite Distributed Lag Model

Dataset is not available

Example 11.3: AR[1] Model

Dataset is not available

Example 11.4: Efficient Market Hypothesis

use http://fmwww.bc.edu/ec-p/data/wooldridge/NYSE

summ return

```
    Variable |       Obs        Mean    Std. Dev.        Min        Max
-------------+--------------------------------------------------------
      return |       690    .1957843    2.114532   -15.32173    8.448762
```

reg return return_1

```
      Source |       SS       df       MS                  Number of obs =     689
-------------+------------------------------           F(  1,   687) =    2.40
       Model |  10.6866237      1  10.6866237           Prob > F      =  0.1218
    Residual |  3059.73813    687   4.4537673           R-squared     =  0.0035
-------------+------------------------------           Adj R-squared =  0.0020
       Total |  3070.42476    688  4.46282668           Root MSE      =  2.1104


------------------------------------------------------------------------------
      return |      Coef.   Std. Err.       t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    return_1 |   .0588984   .0380231     1.55   0.122    -.0157569    .1335538
       _cons |    .179634   .0807419     2.22   0.026     .0211034    .3381646
```

Example 11.5: Expectation Augmented Phillips Curve

use http://fmwww.bc.edu/ec-p/data/wooldridge/PHILLIPS

reg cinf unem

```
      Source |       SS           df       MS                  Number of obs =       48
-------------+------------------------------              F(  1,     46) =     5.56
       Model | 33.3829988         1  33.3829988            Prob > F        =   0.0227
    Residual |  276.30513        46  6.00663326            R-squared       =   0.1078
-------------+------------------------------              Adj R-squared   =   0.0884
       Total |  309.688129       47  6.58910913            Root MSE        =   2.4508

------------------------------------------------------------------------------
        cinf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        unem |  -.5425869   .2301559    -2.36   0.023    -1.005867    -.079307
       _cons |   3.030581    1.37681     2.20   0.033     .2592061    5.801955
------------------------------------------------------------------------------
```

Natural rate of unemployment

display _b[_cons]/-_b[unem]
5.5854288

Example 11.6: Fertility Equation

use http://fmwww.bc.edu/ec-p/data/wooldridge/FERTIL3

reg gfr gfr_1

```
      Source |       SS           df       MS                  Number of obs =       71
-------------+------------------------------              F(  1,     69) = 1413.53
       Model |  25734.824         1   25734.824            Prob > F        =   0.0000
    Residual | 1256.21904        69  18.2060731            R-squared       =   0.9535
-------------+------------------------------              Adj R-squared   =   0.9528
       Total |  26991.043        70  385.586329            Root MSE        =   4.2669

------------------------------------------------------------------------------
         gfr |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
```

```
    gfr_1 |   .9777202   .0260053    37.60   0.000     .925841    1.029599
    _cons |   1.304937   2.548821     0.51   0.610    -3.779822    6.389695
------------------------------------------------------------------------------
```

reg pe pe_1

```
      Source |       SS       df       MS              Number of obs =      71
-------------+------------------------------           F(  1,     69) =  895.85
       Model |  276585.96        1   276585.96         Prob > F      =  0.0000
    Residual |  21303.1151      69   308.740798        R-squared     =  0.9285
-------------+------------------------------           Adj R-squared =  0.9274
       Total |  297889.075      70   4255.55822         Root MSE      =  17.571


------------------------------------------------------------------------------
          pe |      Coef.   Std. Err.       t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        pe_1 |   .9478853   .0316692    29.93   0.000     .8847069    1.011064
       _cons |   6.426196   3.808601     1.69   0.096    -1.171754    14.02415
------------------------------------------------------------------------------
```

reg cgfr cpe

```
      Source |       SS       df       MS              Number of obs =      71
-------------+------------------------------           F(  1,     69) =    2.26
       Model |  40.3237245       1   40.3237245        Prob > F      =  0.1370
    Residual |  1229.25863      69   17.8153424        R-squared     =  0.0318
-------------+------------------------------           Adj R-squared =  0.0177
       Total |  1269.58235      70   18.1368908         Root MSE      =  4.2208


------------------------------------------------------------------------------
        cgfr |      Coef.   Std. Err.       t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         cpe |  -.0426776   .0283672    -1.50   0.137    -.0992686    .0139134
       _cons |  -.7847796   .5020398    -1.56   0.123    -1.786322    .2167625
------------------------------------------------------------------------------
```

reg cgfr cpe cpe_1 cpe_2

```
      Source |       SS       df       MS              Number of obs =      69
-------------+------------------------------           F(  3,     65) =    6.56
       Model |  293.259833       3   97.7532778        Prob > F      =  0.0006
    Residual |  968.19996       65   14.895384         R-squared     =  0.2325
-------------+------------------------------           Adj R-squared =  0.1971
       Total |  1261.45979      68   18.5508793         Root MSE      =  3.8595


------------------------------------------------------------------------------
        cgfr |      Coef.   Std. Err.       t    P>|t|     [95% Conf. Interval]
```

```
------------+------------------------------------------------------------------
        cpe |  -.0362021   .0267737    -1.35   0.181    -.089673    .0172687
      cpe_1 |  -.0139706    .027554    -0.51   0.614   -.0689997   .0410584
      cpe_2 |   .1099896   .0268797     4.09   0.000    .0563071   .1636721
      _cons |  -.9636787   .4677599    -2.06   0.043    -1.89786   -.0294976
------------+------------------------------------------------------------------
```

Example 11.7: Wages and Productivity

use http://fmwww.bc.edu/ec-p/data/wooldridge/EARNS

reg lhrwage loutphr t

```
      Source |       SS       df       MS              Number of obs =      41
-------------+------------------------------           F(  2,    38) =  641.23
       Model |  1.04458054     2  .522290269           Prob > F      =  0.0000
    Residual |  .030951697    38  .000814518           R-squared     =  0.9712
-------------+------------------------------           Adj R-squared =  0.9697
       Total |  1.07553224    40  .026888306           Root MSE      =  .02854
```

```
------------------------------------------------------------------------------
     lhrwage |      Coef.   Std. Err.       t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     loutphr |   1.639637    .093347    17.56   0.000    1.450666    1.828608
           t |  -.0182299   .0017482   -10.43   0.000    -.021769   -.0146909
       _cons |  -5.328446   .3744486   -14.23   0.000   -6.086478   -4.570415
------------------------------------------------------------------------------
```

reg ghrwage goutphr

```
      Source |       SS       df       MS              Number of obs =      40
-------------+------------------------------           F(  1,    38) =   21.77
       Model |  .006255013     1  .006255013           Prob > F      =  0.0000
    Residual |  .010917977    38  .000287315           R-squared     =  0.3642
-------------+------------------------------           Adj R-squared =  0.3475
       Total |  .017172989    39  .000440333           Root MSE      =  .01695
```

```
------------------------------------------------------------------------------
     ghrwage |      Coef.   Std. Err.       t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
     goutphr |   .8093157   .1734535     4.67   0.000    .4581774    1.160454
       _cons |  -.0036621     .00422    -0.87   0.391   -.0122051    .0048808
------------------------------------------------------------------------------
```

Example 11.8: Fertility Equation

use *http://fmwww.bc.edu/ec-p/data/wooldridge/FERTIL3*

reg cgfr cpe cpe_1 cpe_2 cgfr_1

```
      Source |       SS       df       MS              Number of obs =      69
-------------+------------------------------           F(  4,     64) =    7.46
       Model | 401.286124       4  100.321531          Prob > F      =  0.0001
    Residual |  860.17367      64  13.4402136          R-squared     =  0.3181
-------------+------------------------------           Adj R-squared =  0.2755
       Total | 1261.45979      68  18.5508793          Root MSE      =  3.6661

------------------------------------------------------------------------------
        cgfr |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         cpe | -.0454721   .0256417    -1.77   0.081    -.0966972    .005753
       cpe_1 |   .002064   .0267776     0.08   0.939    -.0514303   .0555584
       cpe_2 |  .1051346   .0255904     4.11   0.000      .054012   .1562572
      cgfr_1 |  .3002422   .1059034     2.84   0.006     .0886757   .5118086
       _cons | -.7021595   .4537988    -1.55   0.127    -1.608727   .2044079
------------------------------------------------------------------------------
```

This page prepared by Oleksandr Talavera (revised 8 Nov 2002)

Send your questions/comments/suggestions to Kit Baum at **baum@bc.edu**
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