```
exper     float   9.0g
lwage     float   9.0g
expersq   float   9.0g

Sorted by:

        name:  <unnamed>
         log:  /Users/aaronmarkiewitz/Documents/research/stata/econ_6
               72/card_hw.smcl
    log type:  smcl
   opened on:  6 Feb 2018, 10:39:27

1 . bcuse card

Contains data from http://fmwww.bc.edu/ec-p/data/wooldridge/card.dt
                   a
  obs:        3,010
 vars:           34                          26 Jan 2000 12:16
 size:      409,360

                storage   display    value
variable name    type     format     label      variable label
```

variable name	storage type	display format	value label	variable label
id	float	9.0g		
nearc2	float	9.0g		
nearc4	float	9.0g		
educ	float	9.0g		
age	float	9.0g		
fatheduc	float	9.0g		
motheduc	float	9.0g		
weight	float	9.0g		
momdad14	float	9.0g		
sinmom14	float	9.0g		
step14	float	9.0g		
reg661	float	9.0g		
reg662	float	9.0g		
reg663	float	9.0g		
reg664	float	9.0g		
reg665	float	9.0g		
reg666	float	9.0g		
reg667	float	9.0g		
reg668	float	9.0g		
reg669	float	9.0g		
south66	float	9.0g		
black	float	9.0g		
smsa	float	9.0g		
south	float	9.0g		
smsa66	float	9.0g		
wage	float	9.0g		
enroll	float	9.0g		
KWW	float	9.0g		
IQ	float	9.0g		
married	float	9.0g		
libcrd14	float	9.0g		

```
2 .
3 . *a
4 . gen lwage=ln(wage)
5 . gen exper_sq = exper^2
6 . reg lwage educ exper exper_sq black south smsa reg661-reg668 sm
    sa66
```

Source	SS	df	MS		
Model	177.695591	15	11.8463727		
Residual	414.946054	2994	.138592536		
Total	592.641645	3009	.196956346		

```
Number of obs =   3010
F( 15,  2994) =  85.48
Prob > F      = 0.0000
R-squared     = 0.2998
Adj R-squared = 0.2963
Root MSE      = .37228
```

lwage	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
educ	.0746933	.0034983	21.35	0.000	.0678339 .081527
exper	.084832	.0066242	12.81	0.000	.0718435 .0978205
exper_sq	-.002287	.0003166	-7.22	0.000	-.0029079 -.0016662
black	-.1990123	.0182483	-10.91	0.000	-.2347927 -.1632218
south	-.147955	.0259799	-5.69	0.000	-.1988952 -.0970148
smsa	.1363845	.0201005	6.79	0.000	.0969724 .1757967
reg661	-.1185698	.0388301	-3.05	0.002	-.194706 -.042435
reg662	-.0222026	.0282575	-0.79	0.432	-.0776088

```
7 . *b
8 . reg educ exper exper_sq black south smsa reg661-reg668 smsa66 ne
    arc4
```

Source	SS	df	MS		
Model	10287.6179	15	685.841194		
Residual	11274.4622	2994	3.76568542		
Total	21562.0801	3009	7.16586243		

```
Number of obs =   3010
F( 15,  2994) = 182.13
Prob > F      = 0.0000
R-squared     = 0.4771
Adj R-squared = 0.4745
Root MSE      =  1.9405
```

educ	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
exper	-.4125334	.0336996	-12.24	0.000	-.4786101 -.3464566
exper_sq	.0008686	.0016504	0.53	0.599	-.0023674 .0041046
black	-.9355287	.0937348	-9.98	0.000	-1.11932 -.7517377
south	.0259703	.0273644	0.95	0.343	-.0276846 .0792851
smsa	-.0634942	.0356803	-1.78	0.075	-.1334546 .0064662
reg661	.0094551	.0361174	0.26	0.794	-.0613623 .0802725
reg662	.0219476	.0400984	0.55	0.584	-.0566755 .1005708
reg663	-.0005887	.0393793	-0.01	0.988	-.077802 .076645
reg664	-.1750058	.0463394	-3.78	0.000	-.265866 -.0841456
smsa66	.0262417	.0194477	1.35	0.177	-.0118905 .0643739
_cons	4.739377				4.879626

```
9 . *c
10 . ivregress 2sls lwage exper exper_sq black south smsa reg661-reg
     668 smsa66 //
     (educ = exper exper_sq black south smsa reg661-reg668 smsa66 nea
     rc4)
```

```
Instrumental variables (2SLS) regression     Number of obs =   3010
                                             Wald chi2(15) = 769.20
                                             Prob > chi2   = 0.0000
                                             R-squared     = 0.2382
                                             Root MSE      =  .3873
```

lwage	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]
educ	-.0516126	.1354284	-0.38	0.703	-.3171548
	.2139296	.1048112	3.84	0.000	.1966732
	.606918				
	-.210271	.2024568	-1.04	0.299	-.6072395
	-.1138982	.1473395	-1.96	0.050	-.5778042
	-.1020421	.1426357	-1.67	0.095	-.5178838
	-.4270887		-0.50	0.617	-.4577559
	-.0239163	.2416739	1.30	0.194	-.1602434
	.7874841	.1057692	0.24	0.810	-.1819071
	.2328662	.0878638	3.64	0.000	-.1476194
	.3198989	.2111222	79.80	0.000	
_cons	16.84852				16.43456 17.26248

```
11 . *d
12 . reg educ nearc2
```

Source	SS	df	MS
Model	48.3466646	1	48.3466646
Residual	21513.7354	3008	7.15217267
Total	21562.0801	3009	7.16586243

Number of obs = 3010
F(1, 3008) = 6.76
Prob > F = 0.0094
R-squared = 0.0022
Adj R-squared = 0.0019
Root MSE = 2.6744

educ	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
nearc2	.2552584	.0981804	2.60	0.009	.0627509	.4477659
_cons	13.15092	.0651894	201.73	0.000	13.0231	13.27874

Instrumental variables (2SLS) regression (lwage)

lwage	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
educ	.1315038	.0548174	2.40	0.016	.0240637	.239944
exper	.1082711	.0235956	4.59	0.000	.0620246	.1545176
exper_sq	-.0023349	.0003326	-7.02	0.000	-.0029868	-.001683
black	-.1467757	.0537564	-2.73	0.006	-.2521364	-.0414151
south	-.1446715	.027212	-5.32	0.000	-.1980061	-.0913369
smsa	.1118083	.0315777	3.54	0.000	.0499171	.1736995
reg661	-.1078142	.0417024	-2.59	0.010	-.1895494	-.026079
reg662	-.0070465	.0328197	-0.21	0.830	-.0713719	.052729
reg663	.0404445	.031696	1.28	0.202	-.0216784	.1025675
reg664	-.0579172	.0375058	-1.54	0.123	-.1314272	.0155929
reg665	.0384577	.0468138	0.82	0.411	-.0532956	.130211
reg666	.0550887	.0525196	1.05	0.294	-.0478478	.1580252
reg667	.0262758	.0486988	0.55	0.583	-.0686898	.1222058
reg668	-.1908912	.0505764	-3.77	0.000	-.2900191	-.0917634
smsa66	.0185311	.0215511	0.86	0.390	-.0237082	.0607704
_cons	3.773965	.9324588	4.05	0.000	1.946379	5.601551

Instrumented: educ
Instruments: exper exper_sq black south
 smsa reg661 reg662 reg663
 reg664 reg665 reg666 reg667
 reg668 smsa66 nearc4

```
13 . reg educ nearc4
```

Source	SS	df	MS
Model	448.604204	1	448.604204
Residual	21113.4759	3008	7.01910767
Total	21562.0801	3009	7.16586243

Number of obs = 3010
F(1, 3008) = 63.91
Prob > F = 0.0000
R-squared = 0.0208
Adj R-squared = 0.0205
Root MSE = 2.6494

educ	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
nearc4	.829019	.1036988	7.99	0.000	.6256912	1.032347
_cons	12.69801	.0856416	148.27	0.000	12.53009	12.86594

```
15 . *e
16 . reg IQ nearc4
```

Source	SS	df	MS
Model	2869.62905	1	2869.62905
Residual	487188.423	2059	236.614096
Total	490058.052	2060	237.892258

Number of obs = 2061
F(1, 2059) = 12.13
Prob > F = 0.0005
R-squared = 0.0059
Adj R-squared = 0.0054
Root MSE = 15.382

Instrumental variables (2SLS) regression — continuation (lwage, command 14)

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
reg661	-.102976	.0433068	-2.38	0.017	-.1878558	-.0180962
reg662	-.0002286	.0337043	-0.01	0.995	-.0662879	.0658306
reg663	.0469956	.0325621	1.44	0.149	-.016865	.1107763
reg664	-.0554084	.0390786	-1.42	0.156	-.132001	.0211842
reg665	.0515041	.0474412	1.09	0.278	-.0414789	.1444872
reg666	.0699968	.0531631	1.32	0.188	-.032009	.1741945
reg667	.0390596	.0496175	0.79	0.431	-.0581889	.136308
reg668	-.1980371	.0523952	-3.78	0.000	-.3007297	-.0953444
smsa66	-.0150626	.0222765	-0.68	0.499	-.0587238	.0285986
_cons	3.339687	.8921571	3.74	0.000	1.591091	5.088283

Instrumented: educ
Instruments: exper exper_sq black south
 smsa reg661 reg662 reg663
 reg664 reg665 reg666 reg667
 reg668 smsa66 nearc4

```
14 . ivregress 2sls lwage exper exper_sq black south smsa reg661-reg668 smsa66 nea
   > rc2 nearc4)
   > (educ = exper exper_sq black south smsa reg661-reg668 smsa66 nearc4)
```

Instrumental variables (2SLS) regression

Number of obs = 3010
Wald chi2(15) = 709.89
Prob > chi2 = 0.0000
R-squared = 0.1702
Root MSE = .4042

lwage	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
educ	.1570594	.0524383	3.00	0.003	.0542822	.2598366
exper	.1188149	.0227454	5.22	0.000	.0742348	.163395
exper_sq	-.0023565	.0003466	-6.80	0.000	-.003358	-.0016672
black	-.1232278	.0520112	-2.37	0.018	-.225218	-.0213376
south	-.1431945	.0283691	-5.05	0.000	-.1987968	-.0875921
smsa	.100753	.0314355	3.21	0.001	.0391406	.1623654

```
19 . log close
       name:  <unnamed>
        log:  /Users/aaronmarkiewitz/Documents/research/stata/econ_6
> 72/card_hw.smcl
   log type:  smcl
  closed on:  6 Feb 2018, 10:39:27
```

IQ	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
nearc4	2.5962	.7454966	3.48	0.001	1.134195	
_cons	100.6106	.6274557	160.35	0.000	99.38014	101.8412

```
17 . *f
18 . reg IQ nearc4 smsa66 reg661 reg662 reg669
```

Source	SS	df	MS
Model	14792.5727	5	2958.51453
Residual	475265.48	2055	231.27274
Total	490058.052	2060	237.892258

```
Number of obs =    2061
F(  5,  2055) =   12.79
Prob > F      =  0.0000
R-squared     =  0.0302
Adj R-squared =  0.0278
Root MSE      =  15.208
```

IQ	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
nearc4	.8680808	.8216913	1.06	0.291	-.7433537	2.479515
smsa66	1.354527	.8027961	1.69	0.092	-.2198514	2.928906
reg661	4.768099	1.546809	3.08	0.002	1.734623	7.801576
reg662	5.80812	.9017539	6.44	0.000	4.039673	7.576566
reg669	1.844655	1.151703	1.60	0.109	-.4139709	4.103281
_cons	99.38472	.7016631	141.64	0.000	98.00868	100.7608