

```

Residual | 188.305144 424 .444115906 R-squared = 0.1568
name: <unnamed>
log: C:\Users\kbyjr\Desktop\Problem 7.smcl
log type: smcl
opened on: 13 Feb 2013, 12:44:43

```

. reg lwage educ exper expersq

Source	SS	df	MS	Number of obs =	428
Model	35.0222967	3	11.6740989	F(3, 424) =	26.29
Residual	188.305144	424	.444115906	Prob > F =	0.0000
				R-squared =	0.1568
				Adj R-squared =	0.1509
Total	223.327441	427	.523015084	Root MSE =	.66642

lwage	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
educ	.1074896	.0141465	7.60	0.000	.0796837 .1352956
exper	.0415665	.0131752	3.15	0.002	.0156697 .0674633
expersq	-.0008112	.0003932	-2.06	0.040	-.0015841 -.0000382
_cons	-.5220406	.1986321	-2.63	0.009	-.9124667 -.1316144

. ivregress 2sls lwage (educ = fatheduc) exper expersq

```

Instrumental variables (2SLS) regression
Number of obs = 428
Wald chi2( 3) = 25.18
Prob > chi2 = 0.0000
R-squared = 0.1430
Root MSE = .6687

```

lwage	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
educ	.0702263	.0342814	2.05	0.041	.003036 .1374165
exper	.0436716	.0133374	3.27	0.001	.0175308 .0698123
expersq	-.0008822	.000399	-2.21	0.027	-.0016643 -.0001001
_cons	-.0611169	.4344019	-0.14	0.888	-.912529 .7902951

```

Instrumented: educ
Instruments:  exper expersq
              fatheduc

```

. ivregress 2sls lwage (educ = fatheduc motheduc) exper expersq

```

Instrumental variables (2SLS) regression
Number of obs = 428
Wald chi2( 3) = 24.65
Prob > chi2 = 0.0000
R-squared = 0.1357
Root MSE = .67155

```

lwage	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
educ	.0613966	.0312895	1.96	0.050	.0000704 .1227228
exper	.0441704	.0133696	3.30	0.001	.0179665 .0703742
expersq	-.000899	.0003998	-2.25	0.025	-.0016826 -.0001154
_cons	.0481003	.398453	0.12	0.904	-.7328532 .8290538

```

Instrumented: educ
Instruments:  exper expersq
              fatheduc motheduc

```

```
. reg lwage educ exper expersq
```

Source	SS	df	MS	Number of obs = 428		
Model	35.0222967	3	11.6740989	F(3, 424)	=	26.29
Residual	188.305144	424	.444115906	Prob > F	=	0.0000
				R-squared	=	0.1568
				Adj R-squared	=	0.1509
				Root MSE	=	.66642
Total	223.327441	427	.523015084			

lwage	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
educ	.1074896	.0141465	7.60	0.000	.0796837	.1352956
exper	.0415665	.0131752	3.15	0.002	.0156697	.0674633
expersq	-.0008112	.0003932	-2.06	0.040	-.0015841	-.0000382
_cons	-.5220406	.1986321	-2.63	0.009	-.9124667	-.1316144

```
. estimates store b0
```

```
. ivregress 2sls lwage (educ = fatheduc motheduc) exper expersq
```

Instrumental variables (2SLS) regression				Number of obs = 428		
				Wald chi2(3)	=	24.65
				Prob > chi2	=	0.0000
				R-squared	=	0.1357
				Root MSE	=	.67155

lwage	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
educ	.0613966	.0312895	1.96	0.050	.0000704	.1227228
exper	.0441704	.0133696	3.30	0.001	.0179665	.0703742
expersq	-.000899	.0003998	-2.25	0.025	-.0016826	-.0001154
_cons	.0481003	.398453	0.12	0.904	-.7328532	.8290538

```
Instrumented: educ
Instruments:  exper expersq
              fatheduc motheduc
```

```
. estimates store b1
```

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. hausman b1 b0
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	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) b1	(B) b0		
educ	.0613966	.1074896	-.046093	.0279089
exper	.0441704	.0415665	.0026039	.0022714
expersq	-.000899	-.0008112	-.0000878	.0000721

b = consistent under Ho and Ha; obtained from ivregress
B = inconsistent under Ha, efficient under Ho; obtained from regress

Test: Ho: difference in coefficients not systematic

```
chi2( 3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
          = 2.73
Prob>chi2 = 0.4356
```

```
. reg educ exper expersq motheduc fatheduc
```

Source	SS	df	MS	Number of obs =	753
Model	1025.94324	4	256.48581	F(4, 748) =	66.52
Residual	2884.0966	748	3.85574412	Prob > F =	0.0000
				R-squared =	0.2624
				Adj R-squared =	0.2584
Total	3910.03984	752	5.19952106	Root MSE =	1.9636

educ	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
educ	.085378	.0255485	3.34	0.001	.0352228	.1355333
exper	-.0018564	.0008276	-2.24	0.025	-.0034812	-.0002317
expersq	.1856173	.0259869	7.14	0.000	.1346014	.2366331
motheduc	.1845745	.0244979	7.53	0.000	.1364817	.2326674
fatheduc	.1845745	.0244979	7.53	0.000	.1364817	.2326674
_cons	8.366716	.2667111	31.37	0.000	7.843125	8.890307

```
. predict e, resid
```

```
. reg lwage educ exper expersq e
```

Source	SS	df	MS	Number of obs =	428
Model	36.306365	4	9.07659124	F(4, 423) =	20.53
Residual	187.021076	423	.442130203	Prob > F =	0.0000
				R-squared =	0.1626
				Adj R-squared =	0.1547
Total	223.327441	427	.523015084	Root MSE =	.66493

lwage	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
educ	.0639033	.0292123	2.19	0.029	.0064841	.1213226
exper	.0463071	.0134368	3.45	0.001	.0198959	.0727183
expersq	-.0009444	.0004001	-2.36	0.019	-.0017308	-.000158
e	.0558771	.032788	1.70	0.089	-.0085706	.1203248
_cons	-.011404	.3592486	-0.03	0.975	-.7175388	.6947307

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. log close
    name: <unnamed>
    log: C:\Users\kbyjr\Desktop\Problem 7.smcl
    log type: smcl
    closed on: 13 Feb 2013, 12:45:22
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