



```

name: <unnamed>
log: C:\Users\ayus\OneDrive\Documents\ECO.smcl
log type: smcl
opened on: 23 Aug 2022, 22:19:56

```

```
1 . bcuse bwght
```

Contains data from <http://fmwww.bc.edu/ec-p/data/wooldridge/bwght.dta>

```

obs:      1,388
vars:      14
size:     77,728
13 Jan 2000 17:33

```

variable name	storage type	display format	value label	variable label
faminc	float	%9.0g		
cigtax	float	%9.0g		
cigprice	float	%9.0g		
bwght	float	%9.0g		
fatheduc	float	%9.0g		
motheduc	float	%9.0g		
parity	float	%9.0g		
male	float	%9.0g		
white	float	%9.0g		
cigs	float	%9.0g		
lbwght	float	%9.0g		
bwghtlbs	float	%9.0g		
packs	float	%9.0g		
lfaminc	float	%9.0g		

Sorted by:

```

2 .
3 . regress bwght cigs motheduc

```

Source	SS	df	MS	Number of obs	=	1,387
Model	13904.0916	2	6952.04582	F(2, 1384)	=	17.16
Residual	560570.65	1,384	405.036596	Prob > F	=	0.0000
				R-squared	=	0.0242
				Adj R-squared	=	0.0228
Total	574474.741	1,386	414.48394	Root MSE	=	20.126

bwght	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
cigs	-.4861707	.0926242	-5.25	0.000	-.6678697 -.3044717
motheduc	.3307666	.2328371	1.42	0.156	-.1259852 .7875185
_cons	115.4447	3.106523	37.16	0.000	109.3507 121.5387

```

4 .
5 . predict ui, residuals
(1 missing value generated)

```

```

6 .
7 . regress cigs motheduc

```

Source	SS	df	MS	Number of obs	=	1,387
Model	2262.86002	1	2262.86002	F(1, 1385)	=	66.38
Residual	47211.2323	1,385	34.0875323	Prob > F	=	0.0000
				R-squared	=	0.0457
				Adj R-squared	=	0.0450
Total	49474.0923	1,386	35.6955933	Root MSE	=	5.8385

cigs	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
motheduc	-.5376104	.0659837	-8.15	0.000	-.6670492 -.4081716
_cons	9.043119	.8678311	10.42	0.000	7.340714 10.74552

```

8 .
9 . predict rli, residuals
  (1 missing value generated)

10 .
11 . * mean(beta_cigs) = sum(rli*bwght)/sum(rli^2)

12 .
13 .
14 .
15 . egen num = sum(bwght*rli)

16 .
17 . egen den = sum(rli^2)

18 .
19 . egen beta_cigs = num/den
unknown egen function num/den()
r(133);

20 .
21 . gen beta_cigs = num/den

22 .
23 . display(beta_cigs)
-.48617074

24 . * var(beta_cigs) = (sigma_square/SST_cigs*(1-0.0457))

25 .
26 . egen num1 = sum(ui^2)

27 .
28 . display num1
560570.63

29 .
30 . gen sigma_sq = num1/1385

31 .
32 . display sigma_sq
404.74414

33 .
34 . egen cigs_mean = mean(cigs)

35 .
36 . gen t = (cigs-cigs_mean)^2

37 .
38 . egen SST_cigs = sum(t)

39 .
40 . gen var_beta_cigs = (sigma_sq/(SST_cigs*(1-0.0457)))

41 .
42 . display var_beta_cigs
.00857195

43 .
44 . gen se_beta_cigs = sqrt(var_beta_cigs)

45 .
46 . display se_beta_cigs
.09258481

47 . log close
    name: <unnamed>
    log: C:\Users\ayus\OneDrive\Documents\ECO.smcl
    log type: smcl
    closed on: 23 Aug 2022, 22:20:42

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