```
      name:  <unnamed>
       log:  /Users/avinash_a_patel/Desktop/Econometrics/CPS6.smcl
  log type:  smcl
 opened on:  20 Nov 2024, 10:19:15

1 . regress ahe bachelor female age, robust

Linear regression                               Number of obs     =      7,098
                                                F(3, 7094)        =     519.11
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1896
                                                Root MSE          =     10.917

------------------------------------------------------------------------------
             |               Robust
         ahe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
    bachelor |   9.845644   .2613015    37.68   0.000     9.333415    10.35787
      female |  -4.143538   .2623546   -15.79   0.000    -4.657831   -3.629245
         age |   .5312752   .0445561    11.92   0.000     .4439319    .6186186
       _cons |    2.04481    1.32418     1.54   0.123    -.5509773    4.640597
------------------------------------------------------------------------------

2 . use "/Users/avinash_a_patel/Downloads/CPS96_15 (2).dta"

3 . use "/Users/avinash_a_patel/Downloads/Guns.dta"

4 . describe

Contains data from /Users/avinash_a_patel/Downloads/Guns.dta
 Observations:         1,173
    Variables:            13                  21 Nov 2005 17:56
------------------------------------------------------------------------------
Variable      Storage   Display    Value
    name         type    format    label      Variable label
------------------------------------------------------------------------------
year            byte    %9.0g
vio             float   %9.0g                 Violent Crime Rate per 100,000 population (BJS)
mur             float   %9.0g                 Murder Crime Rate per 100,000 population (BJS)
rob             float   %9.0g                 Robbery Crime Rate per 100,000 population (BJS)
incarc_rate     int     %8.0g                 72-99 ONLY - Lagged Rate per 100,000 resident pop of sentenced prisoners in Stat
pb1064          float   %9.0g
pw1064          float   %9.0g
pm1029          float   %9.0g
pop             float   %9.0g
avginc          float   %9.0g
density         float   %9.0g
stateid         byte    %9.0g
shall           byte    %9.0g
------------------------------------------------------------------------------
Sorted by:

5 . summarize

    Variable |        Obs        Mean    Std. dev.       Min        Max
-------------+---------------------------------------------------------
        year |      1,173          88    6.636079         77         99
         vio |      1,173    503.0747    334.2772         47     2921.8
         mur |      1,173    7.665132     7.52271         .2       80.6
         rob |      1,173    161.8202      170.51        6.4     1635.1
 incarc_rate |      1,173    226.5797    178.8881         19       1913
-------------+---------------------------------------------------------
      pb1064 |      1,173    5.336217    4.885688   .2482066   26.97957
      pw1064 |      1,173    62.94543    9.761527   21.78043   76.52575
      pm1029 |      1,173    16.08113    1.732143   12.21368   22.35269
         pop |      1,173    4.816341    5.252115    .402753   33.14512
      avginc |      1,173     13.7248    2.554543   8.554884   23.64671
-------------+---------------------------------------------------------
     density |      1,173    .3520382    1.355472   .0007071   11.10212
     stateid |      1,173    28.96078    15.68352          1         56
       shall |      1,173    .2429668    .4290581          0          1

6 . gen ln_vio = log(vio)
```

```
 7 . gen ln_rob = log(rob)

 8 . gen ln_mur = log(mur)

 9 . reg ln_vio shall
```

Source	SS	df	MS	Number of obs	=	1,173
				F(1, 1171)	=	111.08
Model	42.3348289	1	42.3348289	Prob > F	=	0.0000
Residual	446.29673	1,171	.381124449	R-squared	=	0.0866
				Adj R-squared	=	0.0859
Total	488.631558	1,172	.416921125	Root MSE	=	.61735

ln_vio	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
shall	-.4429646	.0420294	-10.54	0.000	-.525426	-.3605032
_cons	6.134919	.020717	296.13	0.000	6.094272	6.175566

```
10 . reg ln_vio shall, robust
```

Linear regression

Number of obs	=	1,173	
F(1, 1171)	=	86.86	
Prob > F	=	0.0000	
R-squared	=	0.0866	
Root MSE	=	.61735	

ln_vio	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
shall	-.4429646	.0475283	-9.32	0.000	-.5362148	-.3497144
_cons	6.134919	.0193039	317.81	0.000	6.097045	6.172793

```
11 . reg ln_vio shall incarc_rate density avginc pop pb1064 pw1064 pm1029, robust
```

Linear regression

Number of obs	=	1,173	
F(8, 1164)	=	95.67	
Prob > F	=	0.0000	
R-squared	=	0.5643	
Root MSE	=	.42769	

ln_vio	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
shall	-.3683869	.0347879	-10.59	0.000	-.436641	-.3001329
incarc_rate	.0016126	.0001807	8.92	0.000	.0012581	.0019672
density	.0266885	.0143494	1.86	0.063	-.0014651	.054842
avginc	.0012051	.0072778	0.17	0.869	-.013074	.0154842
pop	.0427098	.0031466	13.57	0.000	.0365361	.0488836
pb1064	.0808526	.0199924	4.04	0.000	.0416274	.1200778
pw1064	.0312005	.0097271	3.21	0.001	.012116	.0502851
pm1029	.0088709	.0120604	0.74	0.462	-.0147917	.0325334
_cons	2.981738	.6090198	4.90	0.000	1.786839	4.176638

```
12 . xtset state year

   Panel variable: stateid (strongly balanced)
    Time variable: year, 77 to 99
            Delta: 1 unit

13 . xtreg ln_vio shall incarc_rate density avginc pop pb1064 pw1064 pm1029, fe
```

Fixed-effects (within) regression

Number of obs	=	1,173	
Number of groups	=	51	
Obs per group:			
min	=	23	
avg	=	23.0	

R-squared:
Within = 0.2178
Between = 0.0033

```
     Overall = 0.0001                                        max =        23

                                             F(8, 1114)        =     38.77
corr(u_i, Xb) = -0.3687                      Prob > F          =    0.0000
```

ln_vio	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
shall	-.0461415	.0188668	-2.45	0.015	-.08316	-.009123
incarc_rate	-.000071	.0000936	-0.76	0.448	-.0002547	.0001126
density	-.1722901	.0850362	-2.03	0.043	-.3391392	-.0054409
avginc	-.0092037	.0059083	-1.56	0.120	-.0207963	.0023889
pop	.0115247	.0087239	1.32	0.187	-.0055924	.0286417
pb1064	.1042804	.0177564	5.87	0.000	.0694407	.1391201
pw1064	.0408611	.0050745	8.05	0.000	.0309044	.0508177
pm1029	-.0502725	.0064037	-7.85	0.000	-.0628373	-.0377078
_cons	3.866017	.3847716	10.05	0.000	3.111058	4.620975
sigma_u	.68024951					
sigma_e	.16072287					
rho	.94712779	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(50, 1114) = 142.57                     Prob > F = 0.0000

14 .
15 . xtreg ln_vio shall incarc_rate density avginc pop pb1064 pw1064 pm1029 i.year, fe

Fixed-effects (within) regression               Number of obs     =      1,173
Group variable: stateid                         Number of groups  =         51

R-squared:                                      Obs per group:
     Within  = 0.4180                                         min =         23
     Between = 0.0419                                         avg =       23.0
     Overall = 0.0009                                         max =         23

                                                F(30, 1092)       =      26.14
corr(u_i, Xb) = -0.2929                         Prob > F          =     0.0000
```

ln_vio	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
shall	-.0279935	.0171578	-1.63	0.103	-.0616596	.0056725
incarc_rate	.000076	.0000903	0.84	0.400	-.0001012	.0002531
density	-.091555	.0762821	-1.20	0.230	-.2412312	.0581212
avginc	.0009587	.0064349	0.15	0.882	-.0116676	.0135849
pop	-.0047544	.0078675	-0.60	0.546	-.0201916	.0106827
pb1064	.0291862	.022692	1.29	0.199	-.0153387	.0737111
pw1064	.0092501	.0078617	1.18	0.240	-.0061756	.0246759
pm1029	.0733254	.0156139	4.70	0.000	.0426887	.103962
year						
78	.0585261	.0281373	2.08	0.038	.0033169	.1137354
79	.1639486	.0285947	5.73	0.000	.1078419	.2200553
80	.2170759	.0290886	7.46	0.000	.1600001	.2741517
81	.2172551	.0301068	7.22	0.000	.1581814	.2763289
82	.1946328	.0317055	6.14	0.000	.1324223	.2568433
83	.158645	.0339624	4.67	0.000	.092006	.225284
84	.1929883	.0374886	5.15	0.000	.1194304	.2665462
85	.2444764	.0409789	5.97	0.000	.1640701	.3248827
86	.3240904	.0449554	7.21	0.000	.2358817	.4122991
87	.324365	.049068	6.61	0.000	.2280868	.4206432
88	.3867412	.0536611	7.21	0.000	.2814507	.4920316
89	.4422143	.057918	7.64	0.000	.328571	.5558575
90	.5430478	.070971	7.65	0.000	.4037929	.6823027
91	.5959456	.0744228	8.01	0.000	.4499176	.7419735
92	.6275171	.0785967	7.98	0.000	.4732995	.7817346
93	.6497414	.0816603	7.96	0.000	.4895125	.8099703
94	.6354187	.0854516	7.44	0.000	.4677508	.8030866
95	.6276831	.08912	7.04	0.000	.4528173	.8025489
96	.5713423	.0925605	6.17	0.000	.3897256	.7529589
97	.5501153	.0958911	5.74	0.000	.3619636	.738267
98	.4932904	.0997786	4.94	0.000	.297511	.6890698
99	.4328776	.1033326	4.19	0.000	.2301247	.6356305

```
       _cons |   3.765525   .4714865     7.99   0.000     2.840404    4.690647
-------------+----------------------------------------------------------------
     sigma_u |   .6663043
     sigma_e |   .1400264
         rho |  .95770338   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(50, 1092) = 181.42                 Prob > F = 0.0000

16 .
17 . reg ln_rob shall incarc_rate density avginc pop pb1064 pw1064 pm1029, robust

Linear regression                               Number of obs     =      1,173
                                                F(8, 1164)        =     144.90
                                                Prob > F          =     0.0000
                                                R-squared         =     0.5962
                                                Root MSE          =     .60869

------------------------------------------------------------------------------
             |               Robust
      ln_rob | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
       shall |  -.5288202   .0510021   -10.37   0.000    -.6288865   -.4287539
 incarc_rate |   .0010057   .0001869     5.38   0.000     .0006391    .0013724
     density |   .0905048   .0153545     5.89   0.000     .0603792    .1206303
      avginc |   .0407325   .0092722     4.39   0.000     .0225404    .0589246
         pop |   .0778176   .0054853    14.19   0.000     .0670554    .0885799
      pb1064 |   .1021881   .0265948     3.84   0.000     .0500091    .1543672
      pw1064 |   .0275209   .0135419     2.03   0.042     .0009515    .0540902
      pm1029 |   .0272565   .0149995     1.82   0.069    -.0021726    .0566856
       _cons |   .9041383   .8893029     1.02   0.310    -.8406777    2.648954
------------------------------------------------------------------------------

18 . xtreg ln_rob shall incarc_rate density avginc pop pb1064 pw1064 pm1029, fe

Fixed-effects (within) regression               Number of obs     =      1,173
Group variable: stateid                         Number of groups  =         51

R-squared:                                      Obs per group:
     Within  = 0.0366                                         min =         23
     Between = 0.0531                                         avg =       23.0
     Overall = 0.0521                                         max =         23

                                                F(8, 1114)        =       5.29
corr(u_i, Xb) = -0.0859                         Prob > F          =     0.0000

------------------------------------------------------------------------------
      ln_rob | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
       shall |  -.0078189   .0252557    -0.31   0.757    -.0573731    .0417352
 incarc_rate |  -.0000763   .0001253    -0.61   0.542    -.0003222    .0001695
     density |  -.1860917   .1138322    -1.63   0.102    -.4094413     .037258
      avginc |  -.0175195    .007909    -2.22   0.027    -.0330377   -.0020012
         pop |   .0163332   .0116781     1.40   0.162    -.0065803    .0392466
      pb1064 |   .1115421   .0237693     4.69   0.000     .0649045    .1581796
      pw1064 |   .0271807   .0067929     4.00   0.000     .0138525     .040509
      pm1029 |   .0111817   .0085722     1.30   0.192    -.0056378    .0280012
       _cons |   2.445723   .5150678     4.75   0.000     1.435111    3.456335
-------------+----------------------------------------------------------------
     sigma_u |   .9174441
     sigma_e |  .21514885
         rho |  .94787229   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(50, 1114) = 164.06                 Prob > F = 0.0000

19 . xtreg ln_rob shall incarc_rate density avginc pop pb1064 pw1064 pm1029 i.year, fe

Fixed-effects (within) regression               Number of obs     =      1,173
Group variable: stateid                         Number of groups  =         51

R-squared:                                      Obs per group:
     Within  = 0.2359                                         min =         23
     Between = 0.1358                                         avg =       23.0
     Overall = 0.1362                                         max =         23
```

```
                                                F(30, 1092)       =     11.24
corr(u_i, Xb) = 0.1441                          Prob > F          =     0.0000
```

ln_rob	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
shall	.0268298	.0237135	1.13	0.258	-.0196993	.0733589
incarc_rate	.0000314	.0001248	0.25	0.802	-.0002135	.0002762
density	-.0447449	.1054279	-0.42	0.671	-.2516091	.1621193
avginc	.0143569	.0088936	1.61	0.107	-.0030936	.0318073
pop	.0000164	.0108735	0.00	0.999	-.021319	.0213518
pb1064	.0141078	.0313622	0.45	0.653	-.0474292	.0756447
pw1064	-.0128322	.0108655	-1.18	0.238	-.0341518	.0084874
pm1029	.1046049	.0215797	4.85	0.000	.0622626	.1469472
year						
78	.0328497	.0388879	0.84	0.398	-.0434539	.1091532
79	.1375917	.0395201	3.48	0.001	.0600478	.2151356
80	.243408	.0402027	6.05	0.000	.1645247	.3222912
81	.2737088	.04161	6.58	0.000	.1920643	.3553534
82	.21599	.0438194	4.93	0.000	.1300102	.3019698
83	.1208158	.0469387	2.57	0.010	.0287155	.2129162
84	.078831	.0518122	1.52	0.128	-.0228318	.1804938
85	.1131495	.056636	2.00	0.046	.0020217	.2242772
86	.1895678	.0621319	3.05	0.002	.0676564	.3114792
87	.1572151	.0678158	2.32	0.021	.0241511	.2902791
88	.1927596	.0741638	2.60	0.009	.04724	.3382792
89	.2487313	.0800473	3.11	0.002	.0916675	.4057952
90	.3509806	.0980874	3.58	0.000	.1585194	.5434417
91	.4668537	.1028582	4.54	0.000	.2650316	.6686758
92	.4633221	.1086268	4.27	0.000	.2501813	.6764629
93	.4796983	.112861	4.25	0.000	.2582495	.7011472
94	.4943754	.1181008	4.19	0.000	.2626452	.7261056
95	.4940171	.1231708	4.01	0.000	.2523388	.7356954
96	.4341625	.1279259	3.39	0.001	.1831541	.6851709
97	.3652393	.1325291	2.76	0.006	.1051989	.6252797
98	.2677144	.1379018	1.94	0.052	-.0028682	.5382969
99	.1894683	.1428138	1.33	0.185	-.0907521	.4696887
_cons	3.27912	.6516312	5.03	0.000	2.000529	4.557711
sigma_u	.88484023					
sigma_e	.19352746					
rho	.95434775	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(50, 1092) = 174.38                     Prob > F = 0.0000

20 .
21 . reg ln_mur shall incarc_rate density avginc pop pb1064 pw1064 pm1029, robust

Linear regression                               Number of obs     =      1,173
                                                F(8, 1164)        =     176.49
                                                Prob > F          =     0.0000
                                                R-squared         =     0.6059
                                                Root MSE          =     .44312
```

ln_mur	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
shall	-.3131735	.0357019	-8.77	0.000	-.3832208	-.2431262
incarc_rate	.002097	.0001544	13.58	0.000	.0017941	.0023999
density	.0396669	.0117541	3.37	0.001	.0166054	.0627284
avginc	-.0772578	.0087513	-8.83	0.000	-.0944278	-.0600878
pop	.0416175	.0035077	11.86	0.000	.0347355	.0484995
pb1064	.1307641	.018782	6.96	0.000	.0939137	.1676145
pw1064	.0470796	.0090873	5.18	0.000	.0292502	.0649089
pm1029	.0655308	.0136782	4.79	0.000	.0386941	.0923674
_cons	-2.485593	.6149912	-4.04	0.000	-3.692209	-1.278978

```
22 . xtreg ln_mur shall incarc_rate density avginc pop pb1064 pw1064 pm1029, fe

Fixed-effects (within) regression               Number of obs     =      1,173
```

```
Group variable: stateid                         Number of groups  =         51

R-squared:                                      Obs per group:
     Within  = 0.1528                                         min =         23
     Between = 0.2221                                         avg =       23.0
     Overall = 0.1846                                         max =         23

                                                F(8, 1114)        =      25.12
corr(u_i, Xb) = -0.8961                         Prob > F          =     0.0000

------------------------------------------------------------------------------
      ln_mur | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
       shall |    -.06081   .0257579    -2.36   0.018    -.1113495   -.0102704
  incarc_rate |    -.00036   .0001278    -2.82   0.005    -.0006107   -.0001093
     density |  -.6707132   .1160957    -5.78   0.000     -.898504   -.4429224
      avginc |   .0243114   .0080663     3.01   0.003     .0084846    .0401382
         pop |  -.0257054   .0119103    -2.16   0.031    -.0490745   -.0023363
      pb1064 |   .0307009   .0242419     1.27   0.206    -.0168641    .0782658
      pw1064 |   .0103313    .006928     1.49   0.136     -.003262    .0239246
      pm1029 |   .0392384   .0087427     4.49   0.000     .0220844    .0563923
       _cons |   .4600088   .5253095     0.88   0.381    -.5706989    1.490716
-------------+----------------------------------------------------------------
     sigma_u |    1.36035
     sigma_e |   .21942693
         rho |   .97464151   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(50, 1114) = 72.66                     Prob > F = 0.0000
```

```
23 . xtreg ln_mur shall incarc_rate density avginc pop pb1064 pw1064 pm1029 i.year, fe

Fixed-effects (within) regression               Number of obs     =      1,173
Group variable: stateid                         Number of groups  =         51

R-squared:                                      Obs per group:
     Within  = 0.2905                                         min =         23
     Between = 0.1945                                         avg =       23.0
     Overall = 0.1413                                         max =         23

                                                F(30, 1092)       =      14.90
corr(u_i, Xb) = -0.8336                         Prob > F          =     0.0000

------------------------------------------------------------------------------
      ln_mur | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
       shall |  -.0149524   .0248521    -0.60   0.548    -.0637157    .0338109
  incarc_rate |  -.0001164   .0001308    -0.89   0.374     -.000373    .0001402
     density |  -.5442635   .1104902    -4.93   0.000    -.7610606   -.3274665
      avginc |   .0566492   .0093206     6.08   0.000     .0383608    .0749375
         pop |  -.0320769   .0113956    -2.81   0.005    -.0544367   -.0097171
      pb1064 |   .0219833   .0328681     0.67   0.504    -.0425085     .086475
      pw1064 |  -.0004893   .0113872    -0.04   0.966    -.0228326     .021854
      pm1029 |   .0691941   .0226158     3.06   0.002     .0248187    .1135695
             |
        year |
          78 |  -.0007195   .0407552    -0.02   0.986    -.0806869    .0792479
          79 |   .0592481   .0414177     1.43   0.153    -.0220192    .1405154
          80 |   .0901814   .0421331     2.14   0.033     .0075104    .1728523
          81 |   .1021543    .043608     2.34   0.019     .0165894    .1877191
          82 |   .0224098   .0459235     0.49   0.626    -.0676985     .112518
          83 |  -.0314385   .0491926    -0.64   0.523    -.1279612    .0650842
          84 |  -.1359192   .0543001    -2.50   0.012    -.2424635   -.0293749
          85 |  -.0866144   .0593555    -1.46   0.145    -.2030781    .0298494
          86 |  -.0122752   .0651153    -0.19   0.851    -.1400404      .11549
          87 |  -.0290338   .0710721    -0.41   0.683    -.1684871    .1104195
          88 |  -.0174594   .0777249    -0.22   0.822    -.1699664    .1350476
          89 |  -.0145617   .0838909    -0.17   0.862    -.1791672    .1500438
          90 |    .059998   .1027973     0.58   0.560    -.1417044    .2617005
          91 |   .1053071   .1077971     0.98   0.329    -.1062057     .31682
          92 |   .0681002   .1138426     0.60   0.550    -.1552749    .2914752
          93 |   .1544297   .1182801     1.31   0.192    -.0776524    .3865117
          94 |   .0442648   .1237716     0.36   0.721    -.1985923    .2871218
          95 |   .0556601   .1290851     0.43   0.666    -.1976227     .308943
          96 |   -.015709   .1340685    -0.12   0.907      -.27877    .2473519
```

```
          97 |   -.1221824   .1388926    -0.88   0.379     -.394709    .1503442
          98 |   -.1863381   .1445234    -1.29   0.198    -.4699131    .0972369
          99 |   -.2554286   .1496712    -1.71   0.088    -.5491042     .038247
             |
       _cons |    .1882653   .6829203     0.28   0.783    -1.151719     1.52825
-------------+----------------------------------------------------------------
     sigma_u |  1.1362086
     sigma_e |  .20281999
         rho |  .96911961   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(50, 1092) = 76.86                   Prob > F = 0.0000

24 .
25 . log close
      name:  <unnamed>
       log:  /Users/avinash_a_patel/Desktop/Econometrics/CPS6.smcl
  log type:  smcl
 closed on:  20 Nov 2024, 10:27:17
-------------------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------------------------------------------

      name:  <unnamed>
       log:  /Users/avinash_a_patel/Desktop/Econometrics/CPS6.smcl
  log type:  smcl
 opened on:  20 Nov 2024, 14:14:56

26 . save "/Users/avinash_a_patel/Downloads/Guns.dta", replace
file /Users/avinash_a_patel/Downloads/Guns.dta saved

27 . use "/Users/avinash_a_patel/Downloads/CPS2015 (2).dta"

28 . ln_ahe c.age#c.age female#bachelor if year = 1996
command ln_ahe is unrecognized
r(199);

29 . ln_ahe = c.age#c.age female#bachelor if year = 1996
command ln_ahe is unrecognized
r(199);

30 . reg ln_ahe c.age#c.age female#bachelor if year = 1996
invalid syntax
r(198);

31 . reg ahe female bachelor if year = 1996
invalid syntax
r(198);

32 . reg ahe female bachelor if year == 1996, robust
no observations
r(2000);

33 . reg ahe bachelor female age

      Source |       SS           df       MS      Number of obs   =     7,098
-------------+----------------------------------   F(3, 7094)      =    553.37
       Model |   197847.07         3  65949.0233   Prob > F        =    0.0000
    Residual |   845437.58     7,094  119.176428   R-squared       =    0.1896
-------------+----------------------------------   Adj R-squared   =    0.1893
       Total |  1043284.65     7,097  147.003614   Root MSE        =    10.917

------------------------------------------------------------------------------
         ahe | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
    bachelor |   9.845644   .2624206    37.52   0.000     9.331221    10.36007
      female |  -4.143538   .2659006   -15.58   0.000    -4.664783   -3.622294
         age |   .5312752   .0450694    11.79   0.000     .4429257    .6196248
       _cons |    2.04481   1.354651     1.51   0.131    -.6107109    4.700331
------------------------------------------------------------------------------

34 . reg ahe bachelor female age, robust

Linear regression                               Number of obs     =      7,098
                                                F(3, 7094)        =     519.11
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1896
```

```
                                                Root MSE          =     10.917
```

ahe	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
bachelor	9.845644	.2613015	37.68	0.000	9.333415	10.35787
female	-4.143538	.2623546	-15.79	0.000	-4.657831	-3.629245
age	.5312752	.0445561	11.92	0.000	.4439319	.6186186
_cons	2.04481	1.32418	1.54	0.123	-.5509773	4.640597

```
35 . reg ahe bachelor#female c.age#c.age, robust

Linear regression                               Number of obs     =      7,098
                                                F(4, 7093)        =     422.51
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1904
                                                Root MSE          =     10.913
```

ahe	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
bachelor# female						
0 1	-3.306352	.2818557	-11.73	0.000	-3.858873	-2.75383
1 0	10.4612	.3758928	27.83	0.000	9.724341	11.19807
1 1	5.635151	.3227284	17.46	0.000	5.002507	6.267795
c.age#c.age	.0088554	.0007593	11.66	0.000	.0073669	.0103439
_cons	9.654819	.6842331	14.11	0.000	8.313518	10.99612

```
36 . reg ahe c.age#c.age female#bachelor if year = 1996, robust
   invalid syntax
   r(198);

37 . reg ahe c.age#c.age female#bachelor if year == 1996, robust
   no observations
   r(2000);

38 . reg ahe c.age#c.age female#bachelor, robust

Linear regression                               Number of obs     =      7,098
                                                F(4, 7093)        =     422.51
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1904
                                                Root MSE          =     10.913
```

ahe	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
c.age#c.age	.0088554	.0007593	11.66	0.000	.0073669	.0103439
female# bachelor						
0 1	10.4612	.3758928	27.83	0.000	9.724341	11.19807
1 0	-3.306352	.2818557	-11.73	0.000	-3.858873	-2.75383
1 1	5.635151	.3227284	17.46	0.000	5.002507	6.267795
_cons	9.654819	.6842331	14.11	0.000	8.313518	10.99612

```
39 . use "/Users/avinash_a_patel/Downloads/CPS96_15 (2).dta"

40 . local cpi_1996 156.9

41 . local cpi_2015 = 237.0

42 . gen inflation_factor = 'cpi_2015' / 'cpi_1996'
   'cpi_2015' invalid name
```

```
   r(198);

43 . gen inflation_factor = `cpi_2015' / `cpi_1996'

44 . gen ahe_2015 = ahe

45 . replace ahe_2015 = ahe * inflation_factor if year == 1996
   (6,103 real changes made)

46 . gen ln_ahe = log(ahe_2015)

47 . reg ln_ahe c.age##c.age female##bachelor if year == 1996, robust

   Linear regression                               Number of obs     =      6,103
                                                   F(5, 6097)        =     287.68
                                                   Prob > F          =     0.0000
                                                   R-squared         =     0.1865
                                                   Root MSE          =     .44694

   ------------------------------------------------------------------------------
                |               Robust
         ln_ahe | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
   -------------+----------------------------------------------------------------
            age |    .219222   .0472358     4.64   0.000     .1266232    .3118208
                |
    c.age#c.age |  -.0032953   .0008004    -4.12   0.000    -.0048644   -.0017261
                |
       1.female |   -.242337   .0152938   -15.85   0.000    -.2723183   -.2123556
     1.bachelor |   .3292203   .0161603    20.37   0.000     .2975404    .3609002
                |
        female# |
       bachelor |
           1 1  |   .1073368   .0232166     4.62   0.000     .0618242    .1528495
                |
          _cons |  -.8012037   .6913298    -1.16   0.247    -2.156454    .5540467
   ------------------------------------------------------------------------------

48 . log close
         name:  <unnamed>
          log:  /Users/avinash_a_patel/Desktop/Econometrics/CPS6.smcl
     log type:  smcl
    closed on:  20 Nov 2024, 14:25:22
   ----------------------------------------------------------------------------------------------------------------------
   ----------------------------------------------------------------------------------------------------------------------
         name:  <unnamed>
          log:  /Users/avinash_a_patel/Desktop/Econometrics/CPS6.smcl
     log type:  smcl
    opened on:  20 Nov 2024, 15:03:48

49 . save "/Users/avinash_a_patel/Downloads/CPS96_15 (2).dta", replace
   file /Users/avinash_a_patel/Downloads/CPS96_15 (2).dta saved

50 . use "/Users/avinash_a_patel/Downloads/CPS2015 (2).dta"

51 . reg ahe bachelor female age, robust

   Linear regression                               Number of obs     =      7,098
                                                   F(3, 7094)        =     519.11
                                                   Prob > F          =     0.0000
                                                   R-squared         =     0.1896
                                                   Root MSE          =     10.917

   ------------------------------------------------------------------------------
                |               Robust
            ahe | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
   -------------+----------------------------------------------------------------
       bachelor |   9.845644   .2613015    37.68   0.000     9.333415    10.35787
         female |  -4.143538   .2623546   -15.79   0.000    -4.657831   -3.629245
            age |   .5312752   .0445561    11.92   0.000     .4439319    .6186186
          _cons |    2.04481    1.32418     1.54   0.123    -.5509773    4.640597
   ------------------------------------------------------------------------------

52 .
```