```
1
2
3   use "C:/Users/Nmath_000/Documents/MI_school/Second Year/621
    Labor/Assignments/Assignment_5/macurdy_lee.dta", clear
4   cd "C:\Users\Nmath_000\Documents\Code\courses\econ 621\assignment_5\"
5
6   ***************
7   * question 2 *
8   ***************
9
10  * create IV variables
11  gen educ_sq = educ^2
12  gen ageXeduc = age*educ
13  gen ageXeduc_sq = age*educ_sq
14  gen smsa_large = smsa == 1
15  gen smsa_mid = smsa == 2
16  gen moth_hs = mothed == 2
17  gen moth_col = mothed == 3
18  gen fath_hs = fathed == 2
19  gen fath_col = fathed == 3
20  gen econst_ave = econgrow == 2
21  gen econst_well = econgrow == 3
22
23  * create a local for these variables
24  local iv14 age educ educ_sq ageXeduc ageXeduc_sq white smsa_large smsa_mid moth_hs moth_col
    fath_hs fath_col econst_ave econst_well
25
26  * create loacl for 5 instromental variables
27  local iv5 age educ educ_sq ageXeduc ageXeduc_sq
28
29  * create log hours and log wage variables
30  gen wages = earnings/hours
31  gen lnh = ln(hours)
32  gen lnw = ln(wages)
33
34  * create variable for change in hours and wages between years
35  *bysort respid (year) : gen ch_lnh = lnh - lnh[_n-1]
36  *bysort respid (year) : gen ch_lnw = lnw - lnw[_n-1]
37
38  xtset respid year
39
40  // Create variables
41  gen ch_lnh  = lnh - L.lnh
42  gen ch_lnw = lnw - L.lnw
43
44
45  * preserve data
46  preserve
47
48  * subset sample
49  keep if lee_macurdy_sample == 1
50
51
52  * PART a
53  * use survey weights and cluster standard errors.
54  regress ch_lnh ch_lnw [pweight = wtvar] , vce(cluster respid)
55
56  * Part b
57  * do iv with 14 variables
58  ivregress 2sls ch_lnh (ch_lnw = `iv14') [pw = wtvar] , vce(cluster respid)
59
60  * PART c
61  * Do first stage regression
62  regress ch_lnw `iv14' [pweight = wtvar] , vce(cluster respid)
63  * test significance
64  test `iv14'
65
66
67  * part D
68  * do liml estimate with 14 vars
```

```
ivregress liml ch_lnh (ch_lnw = `iv14') [pw = wtvar] , vce(cluster respid)

*Part E
* do 2sls with correct CI
ivregress 2sls ch_lnh (ch_lnw = `iv14') [pw = wtvar] , vce(cluster respid)
rivtest, ci usegrid grid(-2.5(0.01)2.5)


* PART g
* Do first stage regression
regress ch_lnw `iv5' [pweight = wtvar] , vce(cluster respid)
* test significance
test `iv5'


* Part h
* do iv with 14 variables
ivregress 2sls ch lnh (ch lnw = `iv5') [pweight = wtvar] , vce(cluster respid)

* Part i
* do iv with 14 variables
ivregress liml ch_lnh (ch_lnw = `iv5') [pweight = wtvar] , vce(cluster respid)

* Part j
ivregress 2sls ch_lnh (ch_lnw = `iv5') [pweight = wtvar] , vce(cluster respid)
rivtest, ci usegrid grid(-2.5(0.01)2.5)


**************************
* K-P use entire data set *
**************************

restore

* part k
* use survey weights and cluster standard errors.
regress ch lnh ch lnw [pweight = wtvar] , vce(cluster respid)

* part l
* Do first stage regression
regress ch_lnw `iv14' [pweight = wtvar] , vce(cluster respid)
* test significance
test `iv14'

* part m, n
* do iv with 14 variables
ivregress 2sls ch_lnh (ch_lnw = `iv14') [pweight = wtvar] , vce(cluster respid)
rivtest, ci usegrid grid(-2.5(0.01)2.5)

* do liml estimate with 14 vars
ivregress liml ch_lnh (ch_lnw = `iv14') [pweight = wtvar] , vce(cluster respid)


*part o, p
* do iv with 14 variables
ivregress 2sls ch_lnh (ch_lnw = `iv5') [pweight = wtvar] , vce(cluster respid)
rivtest, ci usegrid grid(-2.5(0.01)2.5)

* do iv with 14 variables
ivregress liml ch_lnh (ch_lnw = `iv5') [pweight = wtvar] , vce(cluster respid)
```