



```
1 . do "M:\Master\Methods Econometrics I\Do-file CA3a.do"
```

```
2 . * Computer Assignment 3a
```

```
3 . * I (a)
```

```
4 . use "C:\Users\ul266283\Downloads\ca3a_2017(1).dta"
```

```
5 .
```

```
6 . * II (a, b & c)
```

```
7 . sum age
```

Variable	Obs	Mean	Std. Dev.	Min	Max
age	<b>541</b>	<b>22.67837</b>	<b>.7201298</b>	<b>21</b>	<b>26</b>

```
8 . histogram grade_ectrics2
```

```
(bin=23, start=1.631716, width=.35514279)
```

```
9 . sum grade_ectrics2 if grade_ectrics1~=.&grade_ectrics2~=.
```

Variable	Obs	Mean	Std. Dev.	Min	Max
grade_ectr~2	<b>547</b>	<b>5.410306</b>	<b>1.277653</b>	<b>1.631716</b>	<b>9.8</b>

```
10 .
```

```
11 . * III
```

```
12 . * (a)
```

```
13 . graph twoway (scatter grade_ectrics2 grade_ectrics1) if grade_ectrics1>4&grade_ectrics1<7
```

```
14 . graph twoway (scatter grade_ectrics2 grade_ectrics1) (lfit grade_ectrics2 grade_ectrics1 if g
> rade_ectrics1>4&grade_ectrics1<7
```

```
15 .
```

```
16 . sysdir set PLUS "C:\Users\ul266283"
```

```
17 . sysdir set PERSONAL "C:\Users\ul266283"
```

```
18 . ssc install cmogram
```

```
checking cmogram consistency and verifying not already installed...
```

```
all files already exist and are up to date.
```

```
19 .
```

```
20 . cmogram grade_ectrics2 grade_ectrics1, scatter lfit line(5.49) cutpoint(5.49)
```

Plotting mean of grade\_ectrics2, conditional on grade\_ectrics1.

n = 547

```
Bin #1: [3.303360462188721,3.446239535013835] (n = 0) (mean = .)
Bin #2: [3.446239535013835,3.589118607838949] (n = 1) (mean = 4.701108455657959)
Bin #3: [3.589118607838949,3.731997680664063] (n = 2) (mean = 3.594998240470886)
Bin #4: [3.731997680664063,3.874876753489177] (n = 4) (mean = 4.202601790428162)
Bin #5: [3.874876753489177,4.017755826314291] (n = 2) (mean = 6.463948965072632)
Bin #6: [4.017755826314291,4.160634899139405] (n = 3) (mean = 5.509772459665935)
Bin #7: [4.160634899139405,4.303513971964518] (n = 7) (mean = 5.213524273463658)
Bin #8: [4.303513971964518,4.446393044789632] (n = 7) (mean = 5.439592906406948)
Bin #9: [4.446393044789632,4.589272117614746] (n = 20) (mean = 4.628305351734161)
Bin #10: [4.589272117614746,4.732151190439859] (n = 22) (mean = 4.839850100603971)
Bin #11: [4.732151190439859,4.875030263264973] (n = 17) (mean = 5.113263775320614)
Bin #12: [4.875030263264973,5.017909336090087] (n = 32) (mean = 5.452022477984428)
Bin #13: [5.017909336090087,5.160788408915201] (n = 25) (mean = 5.556419038772583)
Bin #14: [5.160788408915201,5.303667481740315] (n = 39) (mean = 5.476571810551179)
Bin #15: [5.303667481740315,5.44654655456543] (n = 58) (mean = 5.607839041742786)
Bin #1: [5.49,5.707277681687299] (n = 54) (mean = 5.301325334442987)
Bin #2: [5.707277681687299,5.924555363374598] (n = 38) (mean = 5.011795181977122)
Bin #3: [5.924555363374598,6.141833045061897] (n = 54) (mean = 5.246747396610402)
Bin #4: [6.141833045061897,6.359110726749196] (n = 44) (mean = 5.618155100128868)
Bin #5: [6.359110726749196,6.576388408436495] (n = 40) (mean = 5.266262167692185)
Bin #6: [6.576388408436495,6.793666090123794] (n = 12) (mean = 5.665901601314545)
Bin #7: [6.793666090123794,7.010943771811093] (n = 21) (mean = 5.76173126129877)
Bin #8: [7.010943771811093,7.228221453498392] (n = 18) (mean = 6.144279638926188)
Bin #9: [7.228221453498392,7.445499135185691] (n = 10) (mean = 6.58453803062439)
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Bin #10: (7.445499135185691,7.66277681687299] (n = 3) (mean = 6.928637981414795)
Bin #11: (7.66277681687299,7.880054498560289] (n = 5) (mean = 5.705449676513672)
Bin #12: (7.880054498560289,8.097332180247589] (n = 3) (mean = 6.018300533294678)
Bin #13: (8.097332180247589,8.314609861934889] (n = 2) (mean = 5.297590255737305)
Bin #14: (8.314609861934889,8.531887543622188] (n = 1) (mean = 6.76594352722168)
Bin #15: (8.531887543622188,8.749165225309488] (n = 1) (mean = 6.873388767242432)
Bin #16: (8.749165225309488,8.966442906996788] (n = 0) (mean = .)
Bin #17: (8.966442906996788,9.183720588684082] (n = 1) (mean = 7.213979721069336)

```

```
21 .
```

```
22 . reg grade_ectrics2 grade_ectrics1 if grade_ectrics1<5.5
```

Source	SS	df	MS	Number of obs	=	240
Model	<b>13.7629648</b>	<b>1</b>	<b>13.7629648</b>	F(1, 238)	=	<b>8.42</b>
Residual	<b>389.10437</b>	<b>238</b>	<b>1.63489231</b>	Prob > F	=	<b>0.0041</b>
				R-squared	=	<b>0.0342</b>
				Adj R-squared	=	<b>0.0301</b>
Total	<b>402.867334</b>	<b>239</b>	<b>1.68563738</b>	Root MSE	=	<b>1.2786</b>

grade_ectrics2	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
grade_ectrics1	<b>.5521149</b>	<b>.1902909</b>	<b>2.90</b>	<b>0.004</b>	<b>.1772453 .9269846</b>
_cons	<b>2.591561</b>	<b>.9447063</b>	<b>2.74</b>	<b>0.007</b>	<b>.7305069 4.452615</b>

```
23 . display 2.591561 + 5.5*.5521149
5.6281929
```

```
24 . reg grade_ectrics2 grade_ectrics1 if grade_ectrics1>=5.5
```

Source	SS	df	MS	Number of obs	=	307
Model	<b>30.6664982</b>	<b>1</b>	<b>30.6664982</b>	F(1, 305)	=	<b>20.58</b>
Residual	<b>454.425515</b>	<b>305</b>	<b>1.48991972</b>	Prob > F	=	<b>0.0000</b>
				R-squared	=	<b>0.0632</b>
				Adj R-squared	=	<b>0.0601</b>
Total	<b>485.092013</b>	<b>306</b>	<b>1.58526802</b>	Root MSE	=	<b>1.2206</b>

grade_ectrics2	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
grade_ectrics1	<b>.4919093</b>	<b>.1084262</b>	<b>4.54</b>	<b>0.000</b>	<b>.2785511 .7052674</b>
_cons	<b>2.375611</b>	<b>.6876465</b>	<b>3.45</b>	<b>0.001</b>	<b>1.022479 3.728743</b>

```
25 . display 2.375611 + 5.5*.4919093
5.0811122
```

```
26 . display (5.6281929-5.0811122)/5.6281929
.09720362
```

```
27 .
```

```
28 . * (b)
```

```
29 . gen treatment=(grade_ectrics1<5.5)
```

```
30 . graph bar age if grade_ectrics1>=4.5&grade_ectrics1<=7, by(treatment)
```

```
31 . cmogram white grade_ectrics1 if grade_ectrics1>=4.5&grade_ectrics1<=7, scatter lfit line(5.49
```

Plotting mean of white, conditional on grade\_ectrics1.

n = 463

```

Bin #1: [4.51233720779419,4.579066446849279] (n = 9) (mean = .5555555555555556)
Bin #2: [4.579066446849279,4.645795685904368] (n = 10) (mean = .8)
Bin #3: [4.645795685904368,4.712524924959456] (n = 6) (mean = .8333333333333334)
Bin #4: [4.712524924959456,4.779254164014544] (n = 6) (mean = .8333333333333334)
Bin #5: [4.779254164014544,4.845983403069632] (n = 17) (mean = .5882352941176471)
Bin #6: [4.845983403069632,4.912712642124721] (n = 11) (mean = .7272727272727273)
Bin #7: [4.912712642124721,4.97944188117981] (n = 13) (mean = .6153846153846154)
Bin #8: [4.97944188117981,5.046171120234898] (n = 8) (mean = .375)
Bin #9: [5.046171120234898,5.112900359289986] (n = 12) (mean = .75)
Bin #10: [5.112900359289986,5.179629598345074] (n = 25) (mean = .64)
Bin #11: [5.179629598345074,5.246358837400162] (n = 11) (mean = .7272727272727273)
Bin #12: [5.246358837400162,5.313088076455251] (n = 15) (mean = .9333333333333334)
Bin #13: [5.313088076455251,5.379817315510339] (n = 17) (mean = .6470588235294118)
Bin #14: [5.379817315510339,5.44654655456543] (n = 41) (mean = .7317073170731707)
Bin #1: [5.49,5.58175871372223] (n = 38) (mean = .5526315789473685)
Bin #2: [5.58175871372223,5.67351742744446] (n = 15) (mean = .6666666666666666)
Bin #3: [5.67351742744446,5.765276141166689] (n = 14) (mean = .5714285714285714)
Bin #4: [5.765276141166689,5.857034854888918] (n = 9) (mean = .3333333333333333)
Bin #5: [5.857034854888918,5.948793568611148] (n = 13) (mean = .7692307692307693)
Bin #6: [5.948793568611148,6.040552282333377] (n = 40) (mean = .55)
Bin #7: [6.040552282333377,6.132310996055606] (n = 14) (mean = .7857142857142857)
Bin #8: [6.132310996055606,6.224069709777836] (n = 13) (mean = .7692307692307693)
Bin #9: [6.224069709777836,6.315828423500065] (n = 17) (mean = .5294117647058824)
Bin #10: [6.315828423500065,6.407587137222294] (n = 14) (mean = .5)
Bin #11: [6.407587137222294,6.499345850944524] (n = 32) (mean = .625)
Bin #12: [6.499345850944524,6.591104564666753] (n = 8) (mean = .625)
Bin #13: [6.591104564666753,6.682863278388982] (n = 3) (mean = 1)
Bin #14: [6.682863278388982,6.774621992111212] (n = 8) (mean = .75)
Bin #15: [6.774621992111212,6.866380705833441] (n = 10) (mean = .8)
Bin #16: [6.866380705833441,6.958139419555664] (n = 11) (mean = .7272727272727273)

```

```
32 . cmogram age grade_ectrics1 if grade_ectrics1>=4.5&grade_ectrics1<=7, scatter lfit line(5.49)
```

Plotting mean of age, conditional on grade\_ectrics1.

n = 462

```

Bin #1: [4.51233720779419,4.579066446849279] (n = 9) (mean = 22.55555555555556)
Bin #2: [4.579066446849279,4.645795685904368] (n = 10) (mean = 23)
Bin #3: [4.645795685904368,4.712524924959456] (n = 6) (mean = 22.833333333333333)
Bin #4: [4.712524924959456,4.779254164014544] (n = 6) (mean = 22.666666666666667)
Bin #5: [4.779254164014544,4.845983403069632] (n = 17) (mean = 22.94117647058824)
Bin #6: [4.845983403069632,4.912712642124721] (n = 11) (mean = 22.72727272727273)
Bin #7: [4.912712642124721,4.97944188117981] (n = 13) (mean = 23.07692307692308)
Bin #8: [4.97944188117981,5.046171120234898] (n = 8) (mean = 23.125)
Bin #9: [5.046171120234898,5.112900359289986] (n = 12) (mean = 22.666666666666667)
Bin #10: [5.112900359289986,5.179629598345074] (n = 25) (mean = 22.56)
Bin #11: [5.179629598345074,5.246358837400162] (n = 11) (mean = 23)
Bin #12: [5.246358837400162,5.313088076455251] (n = 15) (mean = 22.6)
Bin #13: [5.313088076455251,5.379817315510339] (n = 17) (mean = 23)
Bin #14: [5.379817315510339,5.44654655456543] (n = 41) (mean = 22.58536585365854)
Bin #1: [5.49,5.58175871372223] (n = 38) (mean = 22.71052631578947)
Bin #2: [5.58175871372223,5.67351742744446] (n = 15) (mean = 22.8)
Bin #3: [5.67351742744446,5.765276141166689] (n = 14) (mean = 23)
Bin #4: [5.765276141166689,5.857034854888918] (n = 9) (mean = 22.55555555555556)
Bin #5: [5.857034854888918,5.948793568611148] (n = 13) (mean = 22.53846153846154)
Bin #6: [5.948793568611148,6.040552282333377] (n = 39) (mean = 22.46153846153846)
Bin #7: [6.040552282333377,6.132310996055606] (n = 14) (mean = 22.5)
Bin #8: [6.132310996055606,6.224069709777836] (n = 13) (mean = 22.69230769230769)
Bin #9: [6.224069709777836,6.315828423500065] (n = 17) (mean = 22.88235294117647)
Bin #10: [6.315828423500065,6.407587137222294] (n = 14) (mean = 22.71428571428572)
Bin #11: [6.407587137222294,6.499345850944524] (n = 32) (mean = 22.625)
Bin #12: [6.499345850944524,6.591104564666753] (n = 8) (mean = 22.375)
Bin #13: [6.591104564666753,6.682863278388982] (n = 3) (mean = 22.333333333333333)
Bin #14: [6.682863278388982,6.774621992111212] (n = 8) (mean = 22.5)
Bin #15: [6.774621992111212,6.866380705833441] (n = 10) (mean = 23)
Bin #16: [6.866380705833441,6.958139419555664] (n = 11) (mean = 22.36363636363636)

```



grade_ectrics2	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
treatment	.5350275	.2045928	2.62	0.009	.1329727	.9370822
grade_ectrics1	.4992402	.1629908	3.06	0.002	.1789396	.8195408
_cons	2.303326	.9991973	2.31	0.022	.3397574	4.266894

```

41 .
42 . * (e)
43 . reg grade_ectrics2 treatment age gender sped if grade_ectrics1>=4.5&grade_ectrics1<=7

```

Source	SS	df	MS	Number of obs	=	437
Model	2.19303472	4	.548258679	F(4, 432)	=	0.34
Residual	704.867295	432	1.63163726	Prob > F	=	0.8537
				R-squared	=	0.0031
				Adj R-squared	=	-0.0061
Total	707.060329	436	1.621698	Root MSE	=	1.2774

grade_ectr~2	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
treatment	-.0020276	.12472	-0.02	0.987	-.2471611	.2431058
age	.0131487	.0840184	0.16	0.876	-.151987	.1782844
gender	.1193672	.1236991	0.96	0.335	-.1237598	.3624942
sped	.1206229	.248305	0.49	0.627	-.3674133	.608659
_cons	4.996597	1.900404	2.63	0.009	1.26141	8.731785

```

44 .
    end of do-file

```

```

45 .

```