



User: Airline Route analysis  
Project: Route Analysis

[REDACTED]  
log type: smcl  
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1 .
2 .
3 . *create log variables for regression.
4 . *Note that, capture drop ln_expendA ln_expendB tells
5 . *Stata: "Try to drop them if they exist, but don't stop if they don't.":
6 . capture drop ln_expendA ln_expendB

7 . gen ln_expendA = ln(expendA)

8 . gen ln_expendB = ln(expendB)

9 .
10 . *run regression with vce(robust). It tells Stata to compute robust standard errors,
11 . *hence corrected SEs that stay valid even if the variance
12 . *of the errors changes across observations.
13 . reg voteA ln_expendA ln_expendB prtystrA, vce(robust)

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Linear regression	Number of obs = 173
	F(3, 169) = 184.27
	Prob > F = 0.0000
	R-squared = 0.7926
	Root MSE = 7.7123

voteA	Robust				
	Coefficient	std. err.	t	P> t	[95% conf. interval]
ln_expendA	6.083316	.514596	11.82	0.000	5.067452 7.09918
ln_expendB	-6.615417	.3314586	-19.96	0.000	-7.26975 -5.961085
prtystrA	.1519574	.0560067	2.71	0.007	.0413944 .2625203
_cons	45.07893	4.068348	11.08	0.000	37.0476 53.11026

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14 .
15 .
16 .
17 . *Now we will test our hypothesis
18 . *High F → low p-value → reject H0.
19 . *Low F → high p-value → fail to reject H0:
20 . test ln_expendA = ln_expendB

( 1) ln_expendA - ln_expendB = 0

F( 1, 169) = 417.66
Prob > F = 0.0000

21 .
22 . *Build the difference regressor
23 . *capture drop lratio → removes the variable if it exists, quietly

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24 . capture drop lratio
25 . gen lratio = ln_expendA - ln_expendB
26 .
27 . *Estimate again with the reparametrized model. Note that
28 . *the t on lratio is exactly the test for B_1 = B_2.
29 .

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33 .  
34 . reg bwght cigs parity faminc

Source	SS	df	MS	Number of obs	=	1,388
Model	<b>19996.5211</b>	<b>3</b>	<b>6665.50703</b>	F(3, 1384)	=	<b>16.63</b>
Residual	<b>554615.199</b>	<b>1,384</b>	<b>400.733525</b>	Prob > F	=	<b>0.0000</b>
Total	<b>574611.72</b>	<b>1,387</b>	<b>414.283864</b>	R-squared	=	<b>0.0348</b>
				Adj R-squared	=	<b>0.0327</b>
				Root MSE	=	<b>20.018</b>

  

bwght	Coefficient	Std. err.	t	P> t	[95% conf. interval]
cigs	<b>-.4771537</b>	<b>.091518</b>	<b>-5.21</b>	<b>0.000</b>	<b>-.6566827</b> <b>-.2976247</b>
parity	<b>1.616372</b>	<b>.603955</b>	<b>2.68</b>	<b>0.008</b>	<b>.4316058</b> <b>2.801138</b>
faminc	<b>.0979201</b>	<b>.0291868</b>	<b>3.35</b>	<b>0.001</b>	<b>.040665</b> <b>.1551752</b>
_cons	<b>114.2143</b>	<b>1.4693</b>	<b>77.73</b>	<b>0.000</b>	<b>111.3321</b> <b>117.0966</b>

35 . reg bwght cigs parity faminc motheduc fatheduc

Source	SS	df	MS	Number of obs	=	1,191
Model	<b>18705.5567</b>	<b>5</b>	<b>3741.11135</b>	F(5, 1185)	=	<b>9.55</b>
Residual	<b>464041.135</b>	<b>1,185</b>	<b>391.595895</b>	Prob > F	=	<b>0.0000</b>
Total	<b>482746.692</b>	<b>1,190</b>	<b>405.669489</b>	R-squared	=	<b>0.0387</b>
				Adj R-squared	=	<b>0.0347</b>
				Root MSE	=	<b>19.789</b>

  

bwght	Coefficient	Std. err.	t	P> t	[95% conf. interval]
cigs	<b>-.5959362</b>	<b>.1103479</b>	<b>-5.40</b>	<b>0.000</b>	<b>-.8124352</b> <b>-.3794373</b>
parity	<b>1.787603</b>	<b>.6594055</b>	<b>2.71</b>	<b>0.007</b>	<b>.4938709</b> <b>3.081336</b>
faminc	<b>.0560414</b>	<b>.0365616</b>	<b>1.53</b>	<b>0.126</b>	<b>-.0156913</b> <b>.1277742</b>
motheduc	<b>-.3704503</b>	<b>.3198551</b>	<b>-1.16</b>	<b>0.247</b>	<b>-.9979957</b> <b>.2570951</b>
fatheduc	<b>.4723944</b>	<b>.2826433</b>	<b>1.67</b>	<b>0.095</b>	<b>-.0821426</b> <b>1.026931</b>
_cons	<b>114.5243</b>	<b>3.728453</b>	<b>30.72</b>	<b>0.000</b>	<b>107.2092</b> <b>121.8394</b>

36 .  
37 . \*Using 401k subs data:

39 .  
 40 . keep if fsize == 1  
 (0 observations deleted)

41 . count  
 2,017

42 . keep if fsize == 1  
 (0 observations deleted)

43 . reg nettfa inc age

Source	SS	df	MS	Number of obs	=	2,017
Model	544916.989	2	272458.495	F(2, 2014)	=	136.46
Residual	4021048.06	2,014	1996.54819	Prob > F	=	0.0000
Total	4565965.05	2,016	2264.86361	R-squared	=	0.1193

nettfa	Coefficient	Std. err.	t	P> t	[95% conf. interval]
inc	.7993167	.0597307	13.38	0.000	.6821762 .9164572
age	.8426563	.0920169	9.16	0.000	.6621982 1.023115
_cons	-43.03981	4.080393	-10.55	0.000	-51.04204 -35.03758

44 . keep if fsize == 1  
 (0 observations deleted)

45 . reg nettfa inc

Source	SS	df	MS	Number of obs	=	2,017
Model	377482.064	1	377482.064	F(1, 2015)	=	181.60
Residual	4188482.98	2,015	2078.6516	Prob > F	=	0.0000
Total	4565965.05	2,016	2264.86361	R-squared	=	0.0827

nettfa	Coefficient	Std. err.	t	P> t	[95% conf. interval]
inc	.8206815	.0609	13.48	0.000	.7012479 .940115
_cons	-10.57095	2.060678	-5.13	0.000	-14.61223 -6.529671

46 .  
 end of do-file

47 . exit, clear