

# Using STATA in Economics

STATA

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# Coding in Stata

- Do files
- Commands
- Command Window
- Comments

```
1 //Todd Blamires
2 //11/21/21
3 //Project 3
4 //Applied Econometrics
5
6 //Question 1: I read the paper and have gained a understanding of the rgression analysis that was done along with endogenous variable analysis.
7
8 //Question 2:
9 clear
10 use "/Users/toddblaires/Documents/A Skidmore/Econometrics/Statadata/Project3_Data.dta", clear
11 //This opens the data for use in the rest of the do file.
12 cd "/Users/toddblaires/Documents/A Skidmore/Econometrics/Statadata"
13 //Changes the directory to the statadata folder where everything is to be kept
14 replace GDPpc = GDPpc/1000
15 //Changes GDPpc to be measured in thousands of US dollars
16 replace LandArea = LandArea/100000
17 //Changes the land area variable to be measured in 100,000 sqare KM
18
19 //Question 3
20 label variable CountryName "Country Name"
21 label variable iso "Country Code"
22 label variable PopGrowthRate "Average Annual Growth Rate of Population"
23 label variable PopDensity "People per square km of land"
24 label variable LandArea "Area in 100,000 square km"
25 label variable GDPpc "GDP per capita (constant 2011 thousand $)"
26 label variable Mortality "Mortality rate attributed to household and ambient air pollution, age-standardized, male (per 100,000 male population)"
27 label variable DepRatio "Age dependency ratio (% of working-age population)"
28 label variable Debt "Total Debt Service (% of GDP)"
29 //Labels all the variables with helpful and meaningful names that will allow for easier understanding of what they do.
30
31 //Question 4
32 regress Mortality GDPpc PopGrowthRate PopDensity LandArea
33 predict M_hat1
34 //Creates a regression analysis for mortality on the independent variables listed
35
36 //Question 5
37 gen GDPpc_sq = GDPpc^2
38 regress Mortality GDPpc GDPpc_sq PopGrowthRate PopDensity LandArea
39 predict M_hat2
40 //Uses the per capita GDP squared to make a quadratic equation
41
42 //Question 6
43 //Creates a new table, whilst wiping the document clean. Names the collumns appropriatley and rounded to 2 decimals. Gives the table a title in the file.
44 asdoc regress Mortality GDPpc PopGrowthRate PopDensity LandArea, replace nest cnames(Model 1_OLS) dec(2)
45 asdoc regress Mortality GDPpc GDPpc_sq PopGrowthRate PopDensity LandArea, nest cnames(Model 2_OLS) dec(2) title(Table 1: Estimates from Model 1 and Model 2)
46
47 //mod 2 do file
48 //videos mod 2 asdoc
49
```

# Output Window

The screenshot displays the Stata/SE 17.0 interface with the following components:

- History:** Shows the command `do "/Users/toddbla...`
- Results:** Contains the following text:

```
> 21  
> -.0071695  
> .0217435  
> LandArea | -6.09e+08 2.32e+09 -0.26 0.7  
> 93  
> -5.19e+09  
> 3.97e+09  
> _cons | 143.4819 6.180518 23.22 0.0  
> 00  
> 131.2825  
> 155.6813  
-----  
>  
>  
> . predict M_hat1  
(option xb assumed; fitted values)  
  
> . //Creates a regression analysis for mortality on  
> the independent variables listed  
>  
> . //Question 5  
> . gen GDPpc_sq = GDPpc^2  
  
> . regress Mortality GDPpc GDPpc_sq PopGrowthRate Po  
> pDensity LandArea  
  
Source | SS df MS  
> Number of obs = 177  
-----+-----  
> F(5, 171) = 46.71  
Model | 553401.657 5 110680.331  
> Prob > F = 0.0000  
Residual | 405208.886 171 2369.64261  
> R-squared = 0.5773  
-----+-----  
> Adj R-squared = 0.5649  
Total | 958610.542 176 5446.65081
```
- Variables:** Lists variables such as CountryName, iso, Mortality, DepRatio, Debt, PopGrowthRate, PopDensity, LandArea, GDPpc, M\_hat1, GDPpc\_sq, and M\_hat2.
- Properties:** Shows details for the selected variable, including Name, Label, Type, Format, Value label, and Notes.
- Data:** Shows the current file name as Project3\_Data.dta.

# Data Browsing

- Built in data browsing
- Edit in program

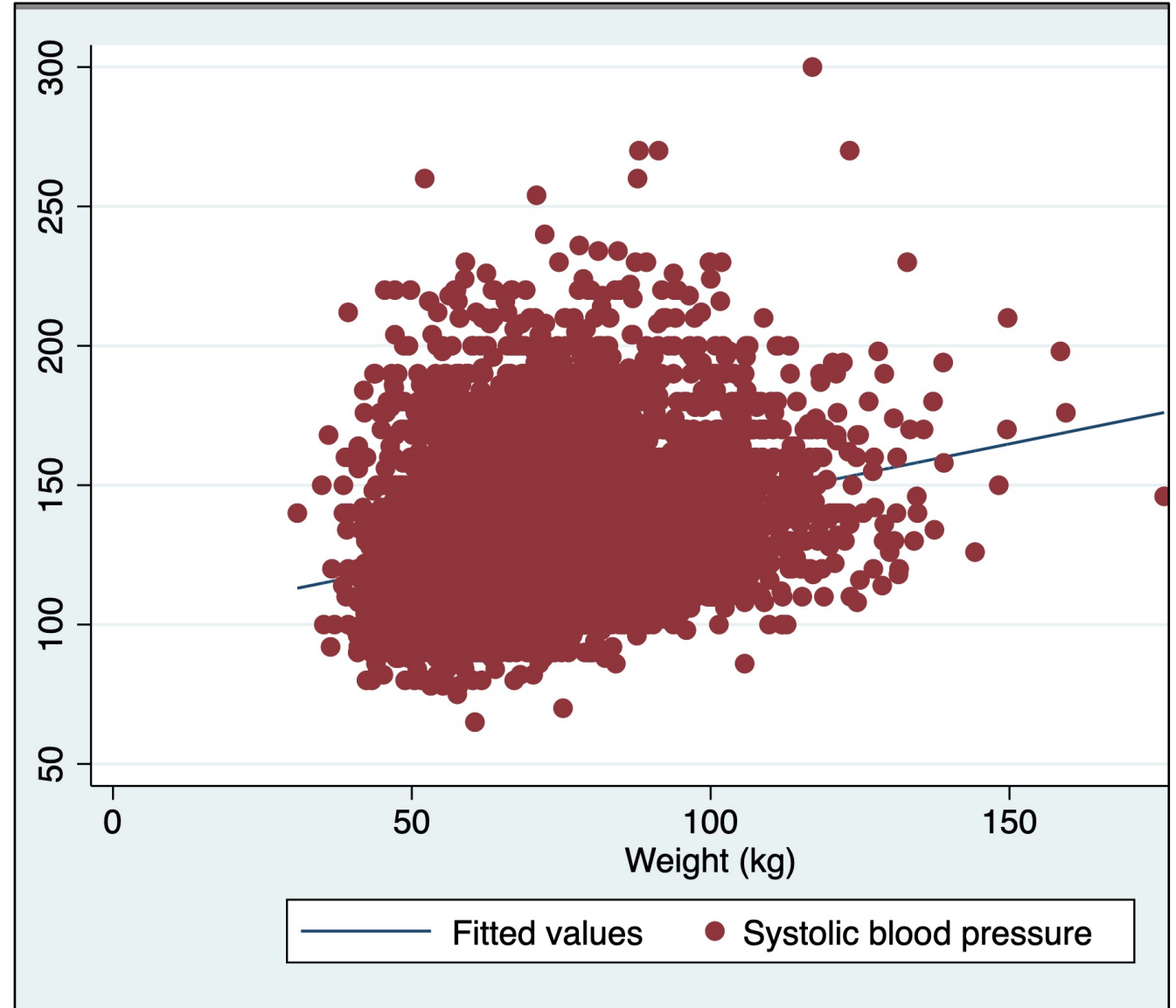
Editor (Browse) — Project3\_Data.dta

CountryName[1] Afghanistan

CountryName	iso	Mortality	DepRatio	Debt	PopGrowthRve	PopDensity	LandArea	GDPpc	M_hat1	GDPpc_sq	M_hat2
Afghanistan	AFG	229	84.07766	.4826997	2.6891635	53.083405	6.529e-10	1.740e-06	139.2744	3.03e-12	165.0419
Angola	AGO	120	96.17574	15.64372	3.3675721	23.111786	1.247e-09	5.985e-06	128.4535	3.58e-11	141.6794
Albania	ALB	82	45.81004	11.6838	-.15988041	104.96719	2.740e-11	.00001136	116.8274	1.29e-10	111.9313
United Arab Emirates	ARE	59	18.6078	0	1.2517591	110.88053	8.360e-11	.00006713	-17.71272	4.51e-09	-10.28805
Argentina	ARG	36	55.95447	12.327	.98474191	16.022067	2.737e-09	.00001849	97.32754	3.42e-10	83.04053
Armenia	ARM	78	46.81533	15.91864	.26930229	102.73326	2.847e-11	8.190e-06	124.455	6.71e-11	128.1355
Antigua and Barbuda	ATG	37	44.67785	0	1.0354224	229.46136	4.400e-13	.00002101	94.46191	4.42e-10	68.95017
Australia	AUS	10	53.48509	0	1.4100638	3.1406166	7.682e-09	.00004441	31.6807	1.97e-09	13.70579
Austria	AUT	19	49.92395	0	1.3140067	105.99903	8.252e-11	.00004436	37.19489	1.97e-09	2.395187
Azerbaijan	AZE	80	41.97438	10.90141	1.1635742	118.09726	8.266e-11	.00001599	105.7081	2.56e-10	90.13426
Burundi	BDI	187	91.38251	1.328238	3.1353331	409.81764	2.568e-11	7.212e-07	144.7128	5.20e-13	171.0162
Belgium	BEL	21	55.87047	0	.65389535	374.77408	3.028e-11	.00004206	44.7322	1.77e-09	7.106013
Benin	BEN	219	84.16644	3.928104	2.7635342	96.419812	1.128e-10	2.010e-06	139.267	4.04e-12	162.7241
Burkina Faso	BFA	223	89.95179	1.745976	2.915614	68.152167	2.736e-10	1.642e-06	139.8502	2.70e-12	165.0731
Bangladesh	BGD	161	48.9523	1.689367	1.0801652	1251.8365	1.302e-10	3.319e-06	144.5171	1.10e-11	157.9306
Bulgaria	BGR	82	55.32143	11.1491	-.7013821	65.657903	1.086e-10	.00001779	100.9671	3.17e-10	82.10927
Bahrain	BHR	45	27.68239	0	3.8127968	1848.4708	7.710e-13	.00004514	48.04686	2.04e-09	5.198169
Bahamas, The	BHS	26	42.33357	.	1.1294734	39.084116	1.001e-11	.00002088	93.39243	4.36e-10	69.04108
Bosnia and Herzegovina	BIH	101	45.42609	6.81752	-.54290805	68.687813	5.120e-11	.00001133	119.625	1.28e-10	112.0371
Belarus	BLR	94	46.43667	17.20944	.18428434	46.853876	2.029e-10	.00001674	103.3106	2.80e-10	86.80787
Belize	BLZ	83	53.88456	10.17091	2.1112204	16.087418	2.281e-11	7.846e-06	124.6575	6.16e-11	129.7374
Bolivia	BOL	72	61.98397	4.177404	1.5100469	10.050662	1.083e-09	6.708e-06	126.7129	4.50e-11	137.4517
Brazil	BRA	37	43.38338	6.930618	.81755571	24.844387	8.358e-09	.00001402	104.7403	1.97e-10	111.6537
Barbados	BRB	39	49.57888	.	.27371142	662.7814	4.300e-13	.00001675	107.9024	2.81e-10	87.95356
Brunei Darussalam	BRN	15	38.69563	0	1.3450291	80.302846	5.270e-12	.00007179	-29.11939	5.15e-09	-6.747492
Bhutan	BTN	120	46.5725	6.793653	1.309547	20.929375	3.812e-11	8.253e-06	123.7009	6.81e-11	127.6199
Botswana	BWA	120	62.17131	1.916209	1.8416664	3.9706033	5.667e-10	.00001572	105.2348	2.47e-10	91.82166
Central African Republic	CAF	221	89.10773	1.056449	1.0616549	7.3752303	6.230e-10	6.479e-07	141.5932	4.20e-13	171.3978
Canada	CAN	9	49.48188	0	1.2138911	3.9903651	9.094e-09	.00004309	34.02628	1.86e-09	18.18801
Switzerland	CHE	13	50.45325	0	1.0772212	211.86603	3.952e-11	.00005743	6.45745	3.30e-09	-10.98865
Chile	CHL	33	45.52589	0	.82457973	24.087402	7.435e-10	.00002271	88.42673	5.16e-10	62.95821
China	CHN	126	40.44527	1.891347	.54147851	146.85066	9.388e-09	.0000144	104.0954	2.07e-10	111.7724
Cote d'Ivoire	CIV	279	81.14602	6.433012	2.5103536	74.515469	3.180e-10	3.425e-06	135.5693	1.17e-11	154.7595
Cameroon	CMR	228	83.01763	4.340212	2.6135851	49.584712	4.727e-10	3.347e-06	135.4814	1.12e-11	155.3844
Congo, Dem. Rep.	COD	160	96.78641	1.404725	3.2785336	34.730665	2.267e-09	7.439e-07	140.5593	5.53e-13	173.4077
Congo, Rep.	COG	122	80.00253	5.147573	2.5723574	15.009725	3.415e-10	5.301e-06	130.5941	2.81e-11	144.0461
Colombia	COL	45	46.10472	10.53809	.87678663	43.851662	1.109e-09	.00001312	111.4644	1.72e-10	104.8456
Comoros	COM	192	74.05057	.7567894	2.3111914	427.51263	1.861e-12	1.411e-06	143.1918	1.99e-12	166.8978
Cabo Verde	CPV	120	50.12106	5.598713	1.2395809	133.88586	4.030e-12	6.075e-06	129.8003	3.69e-11	139.5478
Costa Rica	CRI	29	44.66461	9.942263	1.022696	95.12875	5.106e-11	.0000154	106.9894	2.37e-10	92.71285

# Visuals and Application

- Visuals
  - Built in visualization
  - Easy manipulated
- Application
  - Used to complete regression analysis
  - Compute models quickly



# Libraries and Python Comparison

- Libraries
  - Asdoc easily exports outputs to a word document
  - Other available
- Python
  - Python can do many similar tasks
  - Needs libraries
  - Harder to learn, but more capable in the long run

Table 1: Estimates from Model 1 and Model 2

	(1)	(2)	(3)	(4)
	Model_1_O LS	Model_2_OL S	Model_1_2S LS	Model_2_2S LS
GDPpc	-2412399.8** * (240973.68)	-6083755.8** * (463400.43)	-3244629*** (406292.3)	8594403.9 (16183876)
PopGrowthRate	0 (0)	0 (0)	21.54*** (3.94)	66.2 (61.58)
PopDensity	.01 (.01)	0 (.01)	.01* (.01)	.03 (.02)
LandArea	-6.092e+08 (2.319e+09)	1.533e+09 (1.946e+09)	7.442e+08 (2.195e+09)	-5.113e+09 (9.394e+09)
GDPpc_sq		4.957e+10*** (5.640e+09)		-1.570e+11 (2.140e+11)
_cons	143.48*** (6.18)	174.35*** (6.23)	126.85*** (10.81)	-36.82 (224.69)
Observations	177	177	171	171
R-squared	.39	.58	.45	.

*Standard errors are in parentheses*

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$