```
1 . use "/Users/reihaneh/Desktop/Georgia state University/Fall2022/ECON 8740 Stat and Ec
  > onometrics/Assignments/2/WAGE2.DTA"

2 . do "/var/folders/gk/vzl_r4g114z52p957wyhtf0h0000gn/T//SD94810.000000"

3 . * Question1
4 . * 1- Describe data
5 . describe

  Contains data from /Users/reihaneh/Desktop/Georgia state University/Fall2022/ECON 8740
  >  Stat and Econometrics/Assignments/2/WAGE2.DTA
    obs:           935
   vars:            17                          14 Apr 1999 13:41
   size:        20,570
  ------------------------------------------------------------------------------------
                storage   display    value
  variable name   type    format     label      variable label
  ------------------------------------------------------------------------------------
  wage            int     %9.0g                 monthly earnings
  hours           byte    %9.0g                 average weekly hours
  IQ              int     %9.0g                 IQ score
  KWW             byte    %9.0g                 knowledge of world work score
  educ            byte    %9.0g                 years of education
  exper           byte    %9.0g                 years of work experience
  tenure          byte    %9.0g                 years with current employer
  age             byte    %9.0g                 age in years
  married         byte    %9.0g                 =1 if married
  black           byte    %9.0g                 =1 if black
  south           byte    %9.0g                 =1 if live in south
  urban           byte    %9.0g                 =1 if live in SMSA
  sibs            byte    %9.0g                 number of siblings
  brthord         byte    %9.0g                 birth order
  meduc           byte    %9.0g                 mother's education
  feduc           byte    %9.0g                 father's education
  lwage           float   %9.0g                 natural log of wage
  ------------------------------------------------------------------------------------
  Sorted by:

6 .
7 . *       provide summary statistics
8 . summarize

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
        wage |        935    957.9455    404.3608       115       3078
       hours |        935    43.92941    7.224256        20         80
          IQ |        935    101.2824    15.05264        50        145
         KWW |        935    35.74439    7.638788        12         56
        educ |        935    13.46845    2.196654         9         18
```

exper	935	11.56364	4.374586	1	23
tenure	935	7.234225	5.075206	0	22
age	935	33.08021	3.107803	28	38
married	935	.8930481	.3092174	0	1
black	935	.1283422	.3346495	0	1
south	935	.3411765	.4743582	0	1
urban	935	.7176471	.4503851	0	1
sibs	935	2.941176	2.306254	0	14
brthord	852	2.276995	1.595613	1	10
meduc	857	10.68261	2.849756	0	18
feduc	741	10.21727	3.3007	0	18
lwage	935	6.779004	.4211439	4.744932	8.032035

```
 9 .
10 . *       Note the missing values for educ, sibs, meduc, feduc
11 . count if missing(educ)
     0

12 . count if missing(sibs)
     0

13 . count if missing(meduc)
     78

14 . count if missing(feduc)
     194

15 .
16 . * 1.A.  basic summary statistics for educ, sibs, meduc, and feduc for
17 . * non-missing observations of meduc and feduc.
18 . sum educ sibs meduc feduc if meduc ~=. & feduc ~=.
```

Variable	Obs	Mean	Std. Dev.	Min	Max
educ	722	13.66343	2.236755	9	18
sibs	722	2.858726	2.250471	0	14
meduc	722	10.80609	2.828636	0	18
feduc	722	10.25485	3.305757	0	18

```
19 .
20 . * 1.B Estimate a linear regression of educ on sibs, meduc, and feduc
21 . regress educ sibs meduc feduc
```

Source	SS	df	MS		
				Number of obs	= 722
				F(3, 718)	= 65.20
Model	772.281437	3	257.427146	Prob > F	= 0.0000

Source	SS	df	MS		
Residual	**2834.93324**	**718**	**3.94837499**	R-squared	= **0.2141**
				Adj R-squared	= **0.2108**
Total	**3607.21468**	**721**	**5.00307168**	Root MSE	= **1.9871**

educ	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
sibs	**-.0936359**	**.0344713**	**-2.72**	**0.007**	**-.1613124**	**-.0259594**
meduc	**.1307872**	**.032689**	**4.00**	**0.000**	**.0666098**	**.1949646**
feduc	**.2100041**	**.0274748**	**7.64**	**0.000**	**.1560635**	**.2639447**
_cons	**10.36426**	**.3585001**	**28.91**	**0.000**	**9.660422**	**11.06809**

```
22 .
23 . * 1.G Construct the 99% confidence interval for each of the population
24 . * coefficients associated with the explanatory variables: sibs, meduc, and feduc.
25 . regress educ sibs meduc feduc, level(99)
```

Source	SS	df	MS		
Model	**772.281437**	**3**	**257.427146**	Number of obs	= **722**
				F(3, 718)	= **65.20**
Residual	**2834.93324**	**718**	**3.94837499**	Prob > F	= **0.0000**
				R-squared	= **0.2141**
Total	**3607.21468**	**721**	**5.00307168**	Adj R-squared	= **0.2108**
				Root MSE	= **1.9871**

educ	Coef.	Std. Err.	t	P>|t|	[99% Conf.	Interval]
sibs	**-.0936359**	**.0344713**	**-2.72**	**0.007**	**-.1826646**	**-.0046072**
meduc	**.1307872**	**.032689**	**4.00**	**0.000**	**.0463616**	**.2152128**
feduc	**.2100041**	**.0274748**	**7.64**	**0.000**	**.139045**	**.2809631**
_cons	**10.36426**	**.3585001**	**28.91**	**0.000**	**9.43836**	**11.29015**

```
26 .
27 . * 1.H. Test the joint significance of sibs, meduc and feduc.
28 . test sibs meduc feduc

 ( 1)  sibs = 0
 ( 2)  meduc = 0
 ( 3)  feduc = 0

       F(  3,   718) =   65.20
            Prob > F =    0.0000

29 .
30 . * 1.I. Test the joint significance of meduc and feduc.
31 . test meduc feduc
```

```
 ( 1)  meduc = 0
 ( 2)  feduc = 0

       F(  2,   718) =   77.11
            Prob > F =    0.0000

32 .
   end of do-file

33 . use "/Users/reihaneh/Desktop/Georgia state University/Fall2022/ECON 8740 Stat and Ec
   > onometrics/Assignments/2/data7aweb.dta"

34 . do "/var/folders/gk/vzl_r4g114z52p957wyhtf0h0000gn/T//SD94810.000000"

35 . *Question 2
36 .
37 . * 2 provide des and detail of data
38 . des,detail

   Contains data from /Users/reihaneh/Desktop/Georgia state University/Fall2022/ECON 8740
   >  Stat and Econometrics/Assignments/2/data7aweb.dta
     obs:       426,792
    vars:            24                          30 Jul 2001 07:15
   width:           115
    size:    49,081,080
   ------------------------------------------------------------------------------------
                 storage   display    value
   variable name   type    format     label      variable label
   ------------------------------------------------------------------------------------
   cty1            int     %9.0g                 IFS Country Code 1
   cty2            int     %9.0g                 IFS Country Code 2
   year            int     %8.0g
   pairid          int     %9.0g                 Unique Country-Pair Identifier
   landl           byte    %9.0g                 # Landlocked 0/1/2
   island          byte    %9.0g                 # Islands 0/1/2
   border          byte    %8.0g                 Land Border Dummy
   comlang         byte    %8.0g                 1 for Common Language
   comcol          byte    %8.0g                 Dummy for Common Colonizer post 1945
   comctry         byte    %8.0g                 Dummy for Same Nation/Perennial Colonies
   colony          byte    %8.0g                 Dummy for pairs ever in Colonial
                                                   Relationship
   curcol          byte    %8.0g                 Dummy for pairs currently in Colonial
                                                   Relationship
   custrict        byte    %8.0g                 Strict Currency Union
   cumed           byte    %8.0g                 Strict or inferred (from Transitivity)
                                                   Currency Union
   ltrade          float   %9.0g                 Log Value of Bilateral Trade in Real $
   regional        byte    %8.0g                 RTA Dummy
   lareap          float   %9.0g                 Log of Product of Land Areas
```

ldist	float	%9.0g	**Log of Distance**
lrgdp	float	%9.0g	**Log of Product of Real GDPs**
lrgdppc	float	%9.0g	**Log of Product of Real GDPs per capita**
ctyname1	str34	%34s	
rgdp1	float	%9.0g	**Real GDP**
ctyname2	str34	%34s	
rgdp2	float	%9.0g	**Real GDP**

Sorted by: **cty1 cty2 year**

```
39 .
40 . * 2.1 define the set of variables called A
41 . global A ltrade ldist lrgdp lrgdppc comlang border regional landl island lareap comc
   > ol curcol colony comctry

42 .
43 . * 2.1 Provide descriptive statistics by currencyunion
44 . bysort custrict: sum $A
```

-> custrict = 0

Variable	Obs	Mean	Std. Dev.	Min	Max
ltrade	**422,715**	**10.70738**	**3.684208**	**-16.11561**	**23.86674**
ldist	**306,720**	**8.150077**	**.8195516**	**3.684131**	**9.421514**
lrgdp	**216,389**	**47.89685**	**2.632033**	**36.87086**	**58.01698**
lrgdppc	**216,389**	**16.06051**	**1.436249**	**10.1211**	**20.89841**
comlang	**422,715**	**.146503**	**.3536102**	**0**	**1**
border	**422,715**	**.0200348**	**.1401193**	**0**	**1**
regional	**422,715**	**.0065269**	**.080525**	**0**	**1**
landl	**306,727**	**.2314892**	**.4546681**	**0**	**2**
island	**306,727**	**.3457798**	**.5433083**	**0**	**2**
lareap	**306,727**	**23.78475**	**3.609643**	**4.916325**	**33.03472**
comcol	**422,715**	**.0590634**	**.2357437**	**0**	**1**
curcol	**422,715**	**.0016181**	**.0401932**	**0**	**1**
colony	**422,715**	**.0129425**	**.1130268**	**0**	**1**
comctry	**422,715**	**.0005512**	**.0234712**	**0**	**1**

-> custrict = 1

Variable	Obs	Mean	Std. Dev.	Min	Max
ltrade	**4,077**	**10.57258**	**3.099791**	**-6.278147**	**17.74001**
ldist	**4,077**	**7.07738**	**1.011146**	**3.782556**	**9.350468**
lrgdp	**3,169**	**44.71219**	**3.059198**	**35.3876**	**52.50938**

lrgdppc	3,169	14.51523	1.561307	11.80947	20.59256
comlang	4,077	.8474368	.35961	0	1
border	4,077	.1572234	.364056	0	1
regional	4,077	.073093	.260321	0	1
landl	4,077	.3056169	.5351257	0	2
island	4,077	.4422369	.7077391	0	2
lareap	4,077	23.17425	4.299664	10.43412	28.60295
comcol	4,077	.6610253	.4734193	0	1
curcol	4,077	.162129	.3686143	0	1
colony	4,077	.2251656	.4177425	0	1
comctry	4,077	.0885455	.2841214	0	1

```
45 .
46 . * 2.2 restricting data to year 1997 from now on
47 . * 2.A. obtain summary statistics for variable set A
48 . summarize $A if year == 1997
```

Variable	Obs	Mean	Std. Dev.	Min	Max
ltrade	14,105	10.14634	4.095246	-7.163213	23.86674
ldist	10,889	8.149808	.8190299	3.684131	9.421514
lrgdp	7,996	48.23964	2.833131	38.49837	58.01698
lrgdppc	7,996	16.22658	1.592804	11.23118	19.90353
comlang	14,105	.1386033	.3455444	0	1
border	14,105	.0180078	.1329841	0	1
regional	14,105	.0139667	.1173567	0	1
landl	10,890	.3421488	.5355533	0	2
island	10,890	.3606979	.5516053	0	2
lareap	10,890	23.26414	3.697372	5.521061	32.76884
comcol	14,105	.0702588	.2555917	0	1
curcol	14,105	.0008508	.0291565	0	1
colony	14,105	.0103509	.1012152	0	1
comctry	14,105	.0007799	.0279162	0	1

```
49 .
50 . * 2.B restricting data to non missing of lrgdp set A
51 . summarize $A if lrgdp !=. & year ==1997
```

Variable	Obs	Mean	Std. Dev.	Min	Max
ltrade	7,996	9.771477	3.651089	-7.163213	20.70488
ldist	7,996	8.159072	.8054172	3.782556	9.421514
lrgdp	7,996	48.23964	2.833131	38.49837	58.01698
lrgdppc	7,996	16.22658	1.592804	11.23118	19.90353

comlang	7,996	.1885943	.3912105	0	1
border	7,996	.0251376	.1565527	0	1
regional	7,996	.0231366	.1503466	0	1
landl	7,996	.3528014	.5393517	0	2
island	7,996	.3289145	.5294285	0	2
lareap	7,996	23.82492	3.285805	11.39347	32.19601
comcol	7,996	.0975488	.2967221	0	1
curcol	7,996	0	0	0	0
colony	7,996	.0147574	.1205878	0	1
comctry	7,996	0	0	0	0

```
52 .
53 . * 2.C obtain summary statistics for non missing lrgdp set A by currency union
54 . by custrict, sort : summarize $A if lrgdp !=. & year ==1997
```

-> custrict = 0

Variable	Obs	Mean	Std. Dev.	Min	Max
ltrade	7,913	9.783523	3.654291	-7.163213	20.70488
ldist	7,913	8.175889	.7876403	4.016798	9.421514
lrgdp	7,913	48.28449	2.802683	39.00064	58.01698
lrgdppc	7,913	16.24903	1.578818	11.23118	19.90353
comlang	7,913	.1810944	.3851207	0	1
border	7,913	.0230001	.1499132	0	1
regional	7,913	.0218628	.1462446	0	1
landl	7,913	.3506887	.5377366	0	2
island	7,913	.3290787	.5269625	0	2
lareap	7,913	23.83256	3.266342	11.45953	32.19601
comcol	7,913	.0898521	.2859879	0	1
curcol	7,913	0	0	0	0
colony	7,913	.0147858	.1207022	0	1
comctry	7,913	0	0	0	0

-> custrict = 1

Variable	Obs	Mean	Std. Dev.	Min	Max
ltrade	83	8.623031	3.144354	-5.870682	15.63367
ldist	83	6.555757	.8716879	3.782556	8.102106
lrgdp	83	43.96355	2.445333	38.49837	52.31883
lrgdppc	83	14.08631	1.470661	12.23975	19.15664
comlang	83	.9036145	.2969133	0	1

border	83	.2289157	.4226889	0	1
regional	83	.1445783	.353813	0	1
landl	83	.5542169	.648695	0	2
island	83	.313253	.7313154	0	2
lareap	83	23.09632	4.763322	11.39347	28.08278
comcol	83	.8313253	.3767407	0	1
curcol	83	0	0	0	0
colony	83	.0120482	.1097643	0	1
comctry	83	0	0	0	0

```
55 .
56 . * 2.E Run OLS regression of "Log real trade" on the explanatory variables identified
   >  in Table 2
57 . reg ltrade custrict ldist lrgdp lrgdppc comlang border regional landl island lareap
   > comcol colony if year == 1997
```

Source	SS	df	MS		
Model	72588.3656	12	6049.03047	Number of obs	= 7,996
Residual	33988.5662	7,983	4.25761821	F(12, 7983)	= 1420.75
				Prob > F	= 0.0000
Total	106576.932	7,995	13.330448	R-squared	= 0.6811
				Adj R-squared	= 0.6806
				Root MSE	= 2.0634

ltrade	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
custrict	.903533	.2422384	3.73	0.000	.4286825	1.378383
ldist	-1.273237	.0347425	-36.65	0.000	-1.341342	-1.205133
lrgdp	.9414817	.0145966	64.50	0.000	.9128686	.9700948
lrgdppc	.424044	.0222102	19.09	0.000	.3805062	.4675817
comlang	.4206994	.0659431	6.38	0.000	.2914337	.549965
border	.7448734	.1631055	4.57	0.000	.425144	1.064603
regional	.8932714	.1653786	5.40	0.000	.569086	1.217457
landl	-.3016932	.0461099	-6.54	0.000	-.3920806	-.2113058
island	-.0832614	.0550904	-1.51	0.131	-.1912531	.0247302
lareap	-.0931269	.0119216	-7.81	0.000	-.1164964	-.0697575
comcol	.3863664	.0903623	4.28	0.000	.2092327	.5635001
colony	1.310422	.1967422	6.66	0.000	.924756	1.696088
_cons	-29.97018	.5021204	-59.69	0.000	-30.95447	-28.98589

```
58 .
59 . * provide results of 2.E in outreg2 command
60 . outreg2 using resultsltrade, word
   resultsltrade.rtf
   dir : seeout
```