

Analysis of Economic Data using Stata

Ericka Rascon
University of Essex

November 7, 2011

- 1 Introduction
- 2 Sources of Economic Data
- 3 Software Packages
- 4 Starting our empirical analysis
- 5 Types of Data
 - Macro Data
 - Micro Data
 - Quantitative Data
 - Qualitative Data
 - Time Series Data
 - Cross Sectional Data
 - Panel Data
- 6 Data Analysis
- 7 Conclusions

Why is so important Data Analysis?

Analysis of
Economic
Data using
Stata

Ericksa Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

Data Analysis is used for carrying out empirical work:

- To test economic theory.
- To translate economic theory into real situations.
- To forecast what may happen in the future.

Where shall we start looking ?

- **Office for National Statistics** : UK National Statistics, US Government - Business Data and Statistics , India , Mexico. For instance, *Macro data*: GDP, consumption aggregates, investment, interest rates, among others, and *Micro data*: Micro data: Household, community and firm surveys.
- **International Organizations** : The World Bank , Inter-American Development Bank, Organization for Economic Cooperation and Development. For instance, *Macro Data*: price indexes, public expenditure, public debt; and *Micro Data*: poverty, inequality, malnutrition.
- **Data Archives** : UK National Archives, US National Archives (historical data).
- **Universities** : U. Essex (UK Data Archive - Household Surveys), U. Pennsylvania (CPI, national accounts), U. Michigan (Panel Data).

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

Type of Softwares for analyzing data

- SPSS (Micro and Macro Analysis - quite limited regarding programming platforms).
- E-VIEWS (Macro Analysis).
- Matlab (Financial Analysis / advanced programming).
- Stata (Micro and Macro Analysis / advanced programming but not as flexible as Matlab/SAS/R).
- SAS (Programming environment for Micro and Macro / advanced programming).
- R (Programming environment for Micro and Macro / advanced programming).

How shall we start with our empirical analysis

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

Start thinking about ...

- Your Topic: Micro or Macro Data (?).
- Type of Data: Cross Section, Panel Data, or Time-Series.
- Selection and exploration of a data set.

Using Stata for exploring and analyzing our data

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

Regarding this course, be aware of the importance of laboratories, Stata GTAs do not hold office hours !!!

- 1 Attend the EC831 labs to get feedback for your project.
- 2 Read the EC831 Stata Manual.
- 3 Use Stata's built in help.
- 4 Check Stata's website for getting examples.
- 5 Visit the website: <http://statcomp.ats.ucla.edu/stata/>.
- 6 Join the Stata Forum following the steps in:
<http://www.stata.com/statalist/subscribe.html>

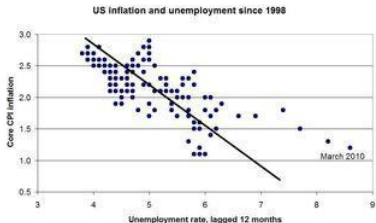
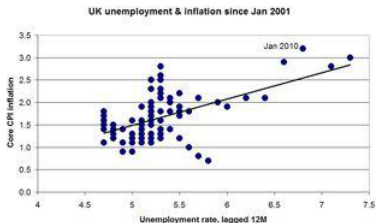
How to pose a question/hypothesis

Economy theory gives you the framework for understanding social and economic problems. For instance, theory suggests:

- 1 Phillips Curve** : Negative relationship between inflation and unemployment.
- 2 Returns to Schooling** : Positive relationship between schooling and wages.
- 3 Health and Income**: Positive relationship between life expectancy and GNP per capita.
- 4 Income Pooling Test** : Parents may pool their incomes in order to invest in human capital for their children.
- 5 Child Health and Mother's Inputs** : Breast feeding increases the cognitive development of children.

Before applying fancy econometrics...

Be sure your data is telling you something. Let's look at the Phillips Curve Hypothesis:



Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

Before applying fancy econometrics...

The same for other type of variables:

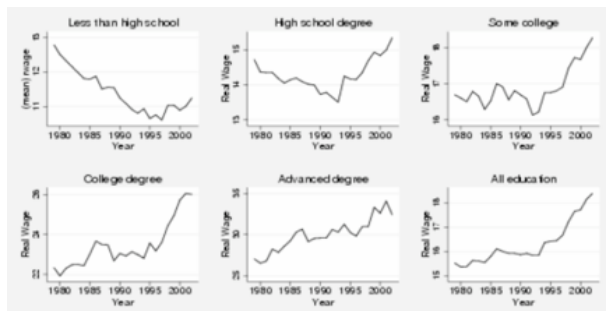


Figure: Schooling vs Wages

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series

Data

Cross Sectional

Data

Panel Data

Before applying fancy econometrics...

The same for other type of variables:

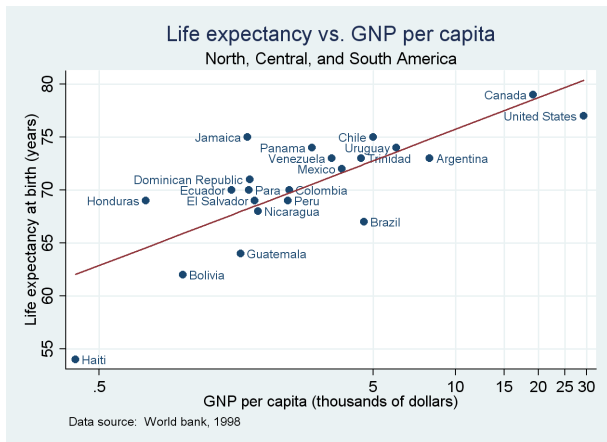


Figure: Life expectancy vs GNP

Types of Economic Data

According to the topic:

- 1 Macro (aggregates: GDP, investment, prices)
- 2 Micro (individuals, firms, communities)

According to the type of variables:

- 1 Quantitative (Variables that can be counted)
- 2 Qualitative Data (Variables that cannot be counted; they don't have an order.)

According to the way they were collected

- 1 Time Series Data.
- 2 Cross Sectional Data.
- 3 Panel Data.

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

Macro level data

Aggregated information about countries, prices, population:

country	public	private
Australia	.7	.7
Britain	.7	.4
Canada	1.5	.9
Denmark	1.5	.1
France	.9	.4
Germany	.9	.2
Ireland	1.1	.3
Netherlands	1	.4
Sweden	1.5	.2
United States	1.1	1.2

Figure: Editor/Browse of Stata: Education Expenditure as Percentage of GDP

state	region	pop	pop15	pop5_17	pop18p
Alabama	South	3,893,888	296,412	865,836	2,731,640
Alaska	West	401,851	38,949	91,796	271,106
Arizona	West	2,718,215	213,883	577,604	1,926,728
Arkansas	South	2,286,435	175,592	495,782	1,615,061
California	West	23,667,902	1,708,400	4,680,558	17,278,944
Colorado	West	2,889,964	216,495	592,318	2,081,151
Connecticut	NE	3,107,576	185,188	637,731	2,284,657
Delaware	South	594,338	41,151	125,444	427,743
Florida	South	9,746,324	570,224	1,789,412	7,386,688
Georgia	South	5,463,105	414,935	1,231,195	3,816,975
Hawaii	West	964,691	77,848	197,735	689,108

Figure: Editor/Browse of Stata: Aggregated Census

Micro level data

Firms, individuals, households:

make	price	mpg	rep78	headroom
AMC Concord	4,099	22	3	2.5
AMC Pacer	4,749	17	3	3.0
AMC Spirit	3,799	22	.	3.0
Buick Century	4,816	20	3	4.5
Buick Electra	7,827	15	4	4.0
Buick LeSabre	5,788	18	3	4.0
Buick Opel	4,453	26	.	3.0
Buick Regal	5,189	20	3	2.0
Buick Riviera	10,372	16	3	3.5
Buick Skylark	4,082	19	3	3.5
Cad. Deville	11,385	14	3	4.0
Cad. Eldorado	14,500	14	2	3.5

Figure: Editor/Browse of Stata: Firm Data

Hospital Patients:

patient	sex	agegrp	bp_before	bp_after
1	Male	30-45	143	153
2	Male	30-45	163	170
3	Male	30-45	153	168
4	Male	30-45	153	142
5	Male	30-45	146	141
6	Male	30-45	150	147

Figure: Editor/Browse of Stata: Hospital Patients

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

Quantitative Data

Describe variables which can be counted or measured:
Population, number of married people/divorce.

state	region	pop	medage	death	marriage	divorce
Alabama	South	3,893,888	29.30	35,305	49,018	26,745
Alaska	West	401,851	26.10	1,604	5,361	3,517
Arizona	West	2,718,215	29.20	21,226	30,223	19,908
Arkansas	South	2,286,435	30.60	22,676	26,513	15,882
California	West	23,667,902	29.90	186,428	210,864	133,541
Colorado	West	2,889,964	28.60	18,925	34,917	18,571
Connecticut	NE	3,107,576	32.00	26,005	26,048	13,488
Delaware	South	594,338	29.80	5,123	4,437	2,313
Florida	South	9,746,324	34.70	104,190	108,344	71,579
Georgia	South	5,463,105	28.70	44,230	70,638	34,743
Hawaii	West	964,691	28.40	4,849	11,856	4,438
Idaho	West	943,935	27.60	6,753	13,428	6,596
Illinois	N Cntrl	11,426,518	29.90	102,230	109,823	50,997
Indiana	N Cntrl	5,490,224	29.20	47,300	57,853	40,006
Iowa	N Cntrl	2,913,808	30.00	26,348	27,474	11,854
Kansas	N Cntrl	2,363,679	30.10	21,910	24,847	13,410
Kentucky	South	3,660,777	29.10	33,765	32,727	16,731
Louisiana	South	4,205,900	27.40	35,518	43,460	18,108

Figure: Editor/Browse of Stata: Quantitative Data

Qualitative Data

Describes variables which cannot be counted or measured, for instance: yes/no, masculine/feminine, single/married. These variables cannot be used to calculate statistics (we cannot add them up, divide them, etc.). However, we can tell how many individuals we have in each category.

studytime	died	drug	age	sex
1	yes	1	61	male
1	yes	1	65	male
2	yes	1	59	male
3	yes	1	52	male
4	yes	1	56	female
4	yes	1	67	male
5	yes	1	63	male
5	yes	1	58	female
8	yes	1	56	female
8	no	1	58	female
8	yes	1	52	female
8	yes	1	49	male
11	yes	1	50	male
11	yes	1	55	female

Figure: Editor/Browse of Stata: Qualitative Data

Qualitative Data MUST be transformed into categorical data


In order to be considered as a variable in Stata, you need to give a numeric value to the categories of our groups. Look at the last column "sex":

studytime	died	drug	age	sex
1	yes	1	61	1
1	yes	1	65	1
2	yes	1	59	1
3	yes	1	52	1
4	yes	1	56	2
4	yes	1	67	1
5	yes	1	63	1
5	yes	1	58	2
8	yes	1	56	2
8	no	1	58	2
8	yes	1	52	2
8	yes	1	49	1
11	yes	1	50	1
11	yes	1	55	2
12	yes	1	49	1
12	yes	1	62	2
15	yes	1	51	1
17	yes	1	49	2
22	yes	1	57	1

Figure: Editor/Browse of Stata: Transformed Qualitative Data

Time Series Data: Financial Data

Data collected at specific points in time (yearly, quarterly, monthly, weekly, daily).

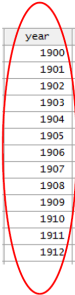


date	open	high	low	close	volume	change
02jan2001	1320.28	1320.28	1276.05	1283.27	11,294	.
03jan2001	1283.27	1347.76	1274.62	1347.56	18,807	64.29004
04jan2001	1347.56	1350.24	1329.14	1333.34	21,310	-14.22009
05jan2001	1333.34	1334.77	1294.95	1298.35	14,308	-34.98999
08jan2001	1298.35	1298.35	1276.29	1295.86	11,155	-2.48999
09jan2001	1295.86	1311.72	1295.14	1300.8	11,913	4.940063
10jan2001	1300.8	1313.76	1287.28	1313.27	12,965	12.46997
11jan2001	1313.27	1332.19	1309.72	1326.82	14,112	13.54993
12jan2001	1326.82	1333.21	1311.59	1318.55	12,760	-8.269897
16jan2001	1318.32	1327.81	1313.33	1326.65	12,057	8.099976
17jan2001	1326.65	1346.92	1325.41	1329.47	13,491	2.819946
18jan2001	1329.89	1352.71	1327.41	1347.97	14,450	18.5
19jan2001	1347.97	1354.55	1336.74	1342.54	14,078	-5.429932
22jan2001	1342.54	1353.62	1333.84	1342.9	11,640	.3599854
23jan2001	1342.9	1362.9	1339.63	1360.4	12,326	17.5

Figure: Editor/Browse of Stata: Time Series of Financial Data

Time Series Data: Life Expectancy

Data collected at specific points in time (yearly, quarterly, monthly, weekly, daily).



year	le	le_male	le_female	le_w	le_wmale	le_wfemale
1900	47.3	46.3	48.3	47.6	46.6	48.7
1901	49.1	47.6	50.6	49.4	48	51
1902	51.5	49.8	53.4	51.9	50.2	53.8
1903	50.5	49.1	52	50.9	49.5	52.5
1904	47.6	46.2	49.1	48	46.6	49.5
1905	48.7	47.3	50.2	49.1	47.6	50.6
1906	48.7	46.9	50.8	49.3	47.3	51.4
1907	47.6	45.6	49.9	48.1	46	50.4
1908	51.1	49.5	52.8	51.5	49.9	53.3
1909	52.1	50.5	53.8	52.5	50.9	54.2
1910	50	48.4	51.8	50.3	48.6	52
1911	52.6	50.9	54.4	53	51.3	54.9
1912	53.5	51.5	55.9	53.9	51.9	56.2

Figure: Editor/Browse of Stata: Time Series of Life Expectancy per Year

Cross Sectional Data: Census Records

Data collected from individual units (people, families, firms, countries, etc) only **ONCE** . This data could be either micro or macro and its **TIME INVARIANT** .

state	region	pop	poplt5
Alabama	South	3,893,888	296,412
Alaska	West	401,851	38,949
Arizona	West	2,718,215	213,883
Arkansas	South	2,286,435	175,592
California	West	23,667,902	1,708,400
Colorado	West	2,889,964	216,495
Connecticut	NE	3,107,576	185,188
Delaware	South	594,338	41,151
Florida	South	9,746,324	570,224
Georgia	South	5,463,105	414,935
Hawaii	West	964,691	77,848
Idaho	West	943,935	93,531

Figure: Editor/Browse of Stata: Cross-Section Census Records

Cross Sectional Data: Car Models

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

make	price	mpg	rep78	headroom
AMC Concord	4,099	22	3	2.5
AMC Pacer	4,749	17	3	3.0
AMC Spirit	3,799	22	.	3.0
Buick Century	4,816	20	3	4.5
Buick Electra	7,827	15	4	4.0
Buick LeSabre	5,788	18	3	4.0
Buick Opel	4,453	26	.	3.0
Buick Regal	5,189	20	3	2.0
Buick Riviera	10,372	16	3	3.5
Buick Skylark	4,082	19	3	3.5
Cad. Deville	11,385	14	3	4.0
Cad. Eldorado	14,500	14	2	3.5

Figure: Editor/Browse of Stata: Car Models

Panel Data

Analysis of
Economic
Data using
Stata

Ericks Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

This is a combination of Cross-Sectional and Time Series Data. We have observations of the same unit/individual in different time periods. For instance, we may have consumption data of the same household from 1990 to 2011.

Some examples of Panel Data are:

- 1 Investment data of 5 countries in the last 10 years.
- 2 Household information collected for the same households for more than one year.

Panel Data: GDP

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

name	code	year	gdp	sav	pop
Albania	ALB	1990	6,75179343	20,9783993	1,6
Albania	ALB	1991	-11,4142038	-13,0284996	-0,2
Albania	ALB	1992	27,5896031	-75,4131012	-1,6
Albania	ALB	1993	5,69153612	-33,6716003	-1,4
Albania	ALB	1994	11,1974627	-9,88263035	0,2
Albania	ALB	1995	9,1941036	-3,94799995	1,2
Albania	ALB	1996	7,55757392	-11,8118	1,3
Albania	ALB	1997	7,73893405	-9,25912952	1,2
Albania	ALB	1998	-8,06352119	-6,69585991	1,1
Albania	ALB	1999	missing	-1,66910005	1,1
Algeria	DZA	1990	2,29575915	27,4666996	2,5
Algeria	DZA	1991	-3,72084675	36,6562004	2,4
Algeria	DZA	1992	-3,55414336	32,3755989	2,4
Algeria	DZA	1993	-0,79384221	27,8384991	2,3
Algeria	DZA	1994	-4,35723136	27,0359993	2,2
Algeria	DZA	1995	-3,31007521	28,4333992	2,2
Algeria	DZA	1996	1,59040861	31,4230003	2,2
Algeria	DZA	1997	1,58921549	32,1985016	2,2
Algeria	DZA	1998	-1,03429441	27,0669003	2,1
Algeria	DZA	1999	1,44857954	31,6912003	2,1

Source: Class Slides Applied Econometrics, Volkswirt Gerhard Kling

Figure: Editor/Browse of Stata: GDP

Recognizing your type of data

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

- 1 Cross-Section** Contain several units (individuals, households, firms) for a single point in time.
- 2 Time Series** Contain a single unit (interest rates, GDP, consumption aggregates) over time.
- 3 Panel Data** Contain several units which has been interviewed/collected more than once (micro or macro data).

Before starting your Data Analysis...

Using Stata:

- 1 Examine the number of missing values: *tab var*, *miss* or *inspect var*.
- 2 Inspect the values of your variables: outliers and "no answer" categories: *sum var*, *detail*.

To examine the number of missing values be sure you have converted "No answer" cases into missing ".":

make	price	rep78	make	price	rep78
AMC Concord	4,099	3	AMC Concord	4,099	3
AMC Pacer	4,749	3	AMC Pacer	4,749	3
AMC Spirit	3,799	.	AMC Spirit	3,799	99
Buick Century	4,816	3	Buick Century	4,816	3
Buick Electra	7,827	4	Buick Electra	7,827	4
Buick LeSabre	5,788	3	Buick LeSabre	5,788	3
Buick Opel	4,453	.	Buick Opel	4,453	98

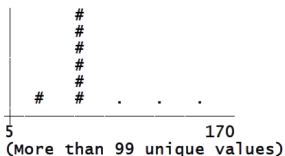
Figure: Editor/Browse of Stata: Missing values and "No answer" categories

Before starting your Data Analysis: Missing Values

After converting "no answer"/"no available" cases into missing values, check if the number of missing values won't be detrimental for your analysis (whether it's just a small proportion of your variable of interest).

```
. inspect age
```

```
age:
```



```
Negative  
Zero  
Positive  
  
Total  
Missing
```

Number of observations		
Total	Integers	Nonintegers
-	-	-
-	-	-
148	16	132
148	16	132
2		
150		

Figure: Stata command *inspect age*: Missings of Age

Before starting your Data Analysis... (cont.)

Be careful with outliers, unusual or non-plausible values for a variable can be EXTREMELY detrimental for your analysis. Especially for indicators sensitive to extreme values (for instance, inequality measures).

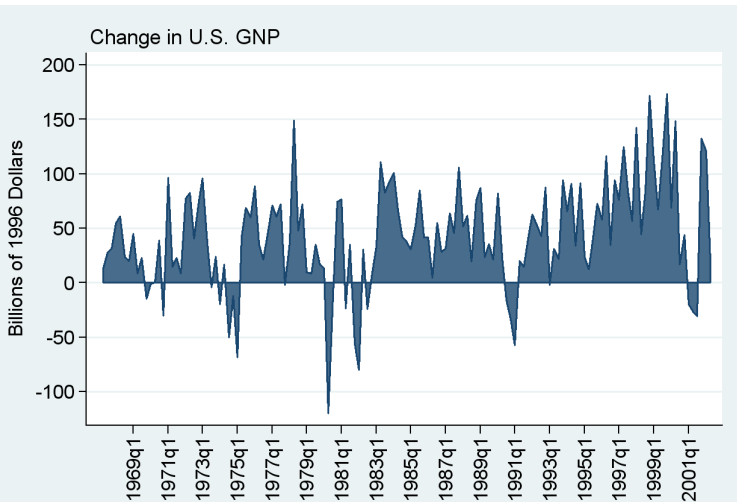
```
. sum age, detail
```

		age			
Percentiles		smallest			
1%	6	5			
5%	22	6			
10%	32.67323	18		obs	150
25%	39.63575	19		Sum of wgt.	150
50%	44.63423			Mean	44.60647
		Largest		Std. Dev.	17.42136
		57.28858		Variance	303.5039
75%	48.22648	133		Skewness	4.172941
90%	51.94449	140		Kurtosis	29.27956
95%	54.09381	170			
99%	140				

Figure: Stata command *sum age, detail*: Outliers in Age

Are your data useful for answering your question/hypothesis?

Explore the tendency/behaviour of your data:



Source: U.S. Department of Commerce, Bureau of Economic Analysis

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

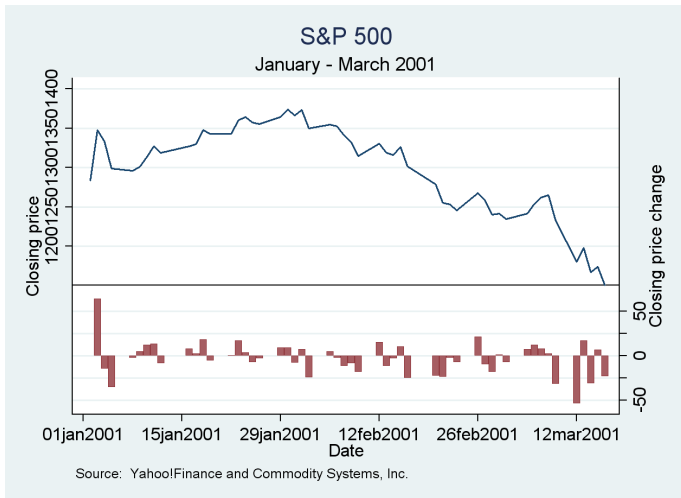
Time Series
Data

Cross Sectional
Data

Panel Data

Are your data useful for answering your question/hypothesis? (cont.)

Time series data for exploring the tendency of S and P indicator:



Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

Are your data useful for answering your question/hypothesis? (cont.)

Cross sectional data for analyzing differences among racial groups regarding life expectancy:

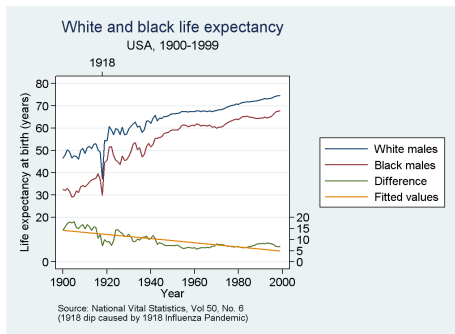


Figure: Stata Graphics: Life Expectancy in US

Stata command: `twoway line.`

Are your data useful for answering your question/hypothesis? (cont.)

Cross sectional data for analyzing spending on education:

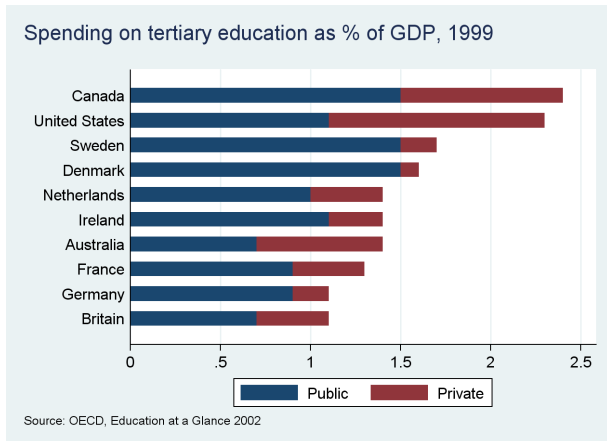


Figure: Stata Graphics: Spending on tertiary education as percentage of GDP

Are your data useful for answering your question/hypothesis? (cont.)

Panel data for evaluating a treatment on blood pressure:

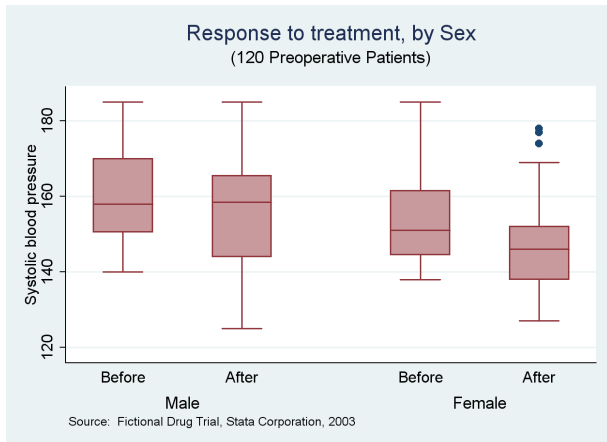


Figure: Stata Graphics: Treatment on Blood Pressure

After cleaning your data

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

Use descriptive statistics to better understand your data:

- 1 Mean, medians, standard deviations, skewness.
- 2 Histograms, kernel densities.

To explore the relationship between two variables

You may use:

- 1 Graphics.
- 2 Cross-tables.
- 3 Correlations.
- 4 Regressions.

For instance, the following graphic reveals a positive relationship between Gross Net Product and Life Expectancy:

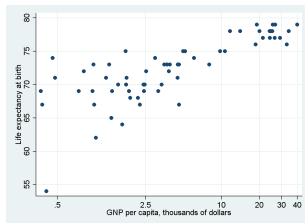


Figure: Stata Graphics: Life Expectancy vs GNP (several countries)

REMEMBER: Correlation and Causality are not the same !!!

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

Correlation is a measure of the relationship between two variables.

Causality is a measure of the effect of one variable on the other.

Examples of Correlation and Causality

- 1** *Correlation*: people with higher incomes, have better health than low-income individuals; but also healthier people may have better productivity than their sicker counterparts and as a consequence, they may have higher incomes. So, we can ensure the relationship of both of them, but not the degree of causality of income-health (unless we have an instrument or experimental data).
- 2** *Causality*: biomarkers of an individual has been taken before and after giving him a pill for reducing cholesterol levels. When the results are compared, the cholesterol levels decreased after the pill was distributed. If there was no other factor interfering with the treatment, we can ensure the pill caused the decrease on cholesterol levels.

To find causal interpretations of econometric results is the **MAIN CHALLENGE** of Empirical Economists.

Conclusion: Economic and Policy Relevance

Analysis of
Economic
Data using
Stata

Ericka Rascon
University of
Essex

Introduction

Sources of
Economic
Data

Software
Packages

Starting our
empirical
analysis

Types of Data

Macro Data

Micro Data

Quantitative
Data

Qualitative Data

Time Series
Data

Cross Sectional
Data

Panel Data

- 1 Are you contributing to the current analysis of socio-economic events ?
- 2 Do your results have policy implications ?
- 3 What sort of future research would you suggest based on your results?