



EViews Training

Samples

Note: The Workfiles and Data for examples for this tutorial are:

- ✓ Data: **Data.xls**
- ✓ Results: **Results.wf1**
- ✓ Practice workfile: **Data.wf1**

Data and Workfile Documentation



- **Data.wf1** and **Data.xlsx** have two pages (tabs) with the following data:
 - Workfile Page *Payroll* (Data.xlsx: tab *Payroll*): monthly data from Jan 1950 – May 2012
 - ✓ Payroll – Payroll employment levels (in thousands) (source: Bureau of Labor Statistics)
 - ✓ Unemployment – unemployment rate (in percent) (source: Bureau of Labor Statistics).
 - Workfile Page *Cross_Section* (Data.xlsx: tab *Cross_Section*): state-level data (50 states)
 - ✓ Population – population data in 2000 (source: the Census Bureau).
 - ✓ GDP – nominal GDP (in millions of dollars) (source: the Bureau of Economic Statistic).
 - ✓ Area – square miles (source: the Census Bureau).

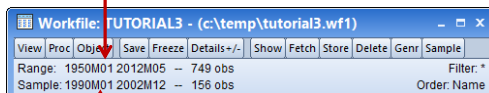
Samples



- **Samples** are sets (usually subsets) of observations in a workfile.
- **Samples** may be specified over ranges of observations and “if” conditions.

Workfile Range (includes all observations)

(here from Jan 1950 – May 2012)



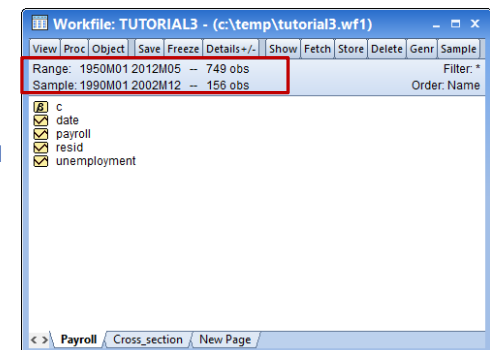
Workfile Sample (includes only sample observations)

(here from Jan 1990 – Dec 2002)

Range and Sample



- Workfile **Data.wf1** is a dated workfile with monthly frequency.
- Page “**Payroll**” of the workfile contains data on “*payroll*” and “*unemployment*” from January 1950 to May 2012.
- The range of the workfile is from 1950M1 to 2012M5.
- The sample is set from 1990M01 to 2002M12.

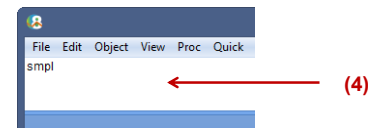
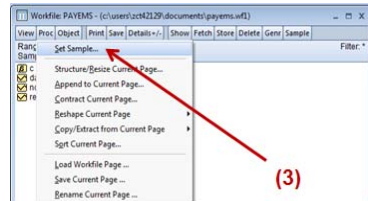
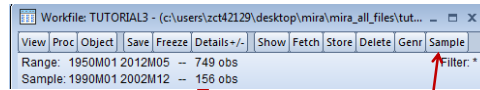


Changing the Sample



- There are a few different ways to change/set the workfile sample:

- ✓ Click the **Sample** button in the workfile toolbar (1).
- ✓ Double click on the **Sample** display in workfile window (2).
- ✓ Select **Proc/Set Sample** from workfile menu (3).
- ✓ Type “`smp1`” in the command window (4).



5

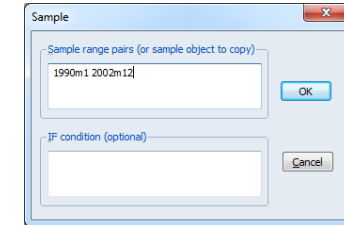
Changing the Sample in Time Series Data Date Pairs: Example 1



- When using any of the above methods to change/set the sample, EViews opens the **Sample** dialog box asking for input.
- Sample specifications are entered in pairs (i.e., as date or observation pairs).

Change the sample to Jan 1990 – Dec. 2002

1. Select any of the above methods (1-3).
2. The **Sample** dialog box opens up. In the upper portion of the box under **Sample range pairs**, type the new sample in date pairs with spaces between the pairs.
1990m1 2002m12
3. Click **OK**.

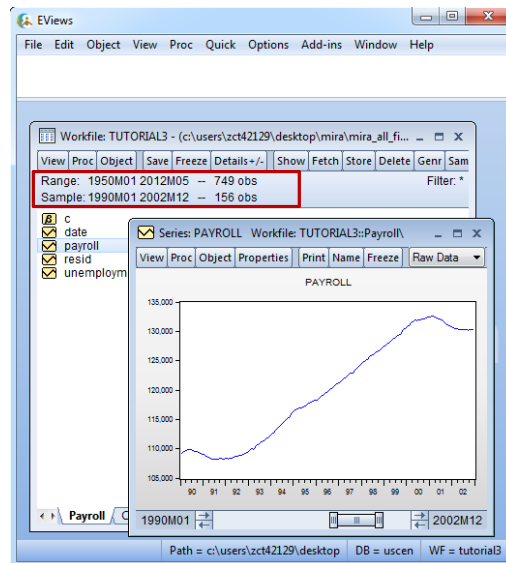


6

Changing the Sample in Time Series Data Date Pairs: Example 1 (cont'd)



- The result is shown here.
- The range is the same as before (January 1950 – May 2005), but the sample has changed as we specified.
- Note that after the sample change, all analysis (graphs, stats, regressions) are carried out over the new sample.



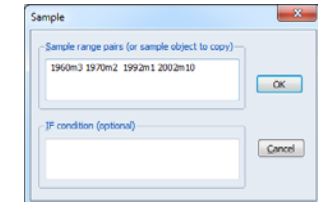
Changing the Sample in Time Series Data Date Pairs: Example 2



- Suppose that you would like to define the sample over two (non-overlapping) periods.
- The process is the same as before: date ranges should be typed in pairs.

Define the sample from March 1960 – Feb 1970 and from Jan 1992 – Oct. 2002

1. Select any of the methods (1-3) that allow you to change the sample.
2. The **Sample** dialog box opens up. In the upper portion of the box under **Sample range pairs**, type the new sample in date pairs with spaces between each pair:
1960m3 1970m2 1992m1 2002m10
3. Click **OK**.

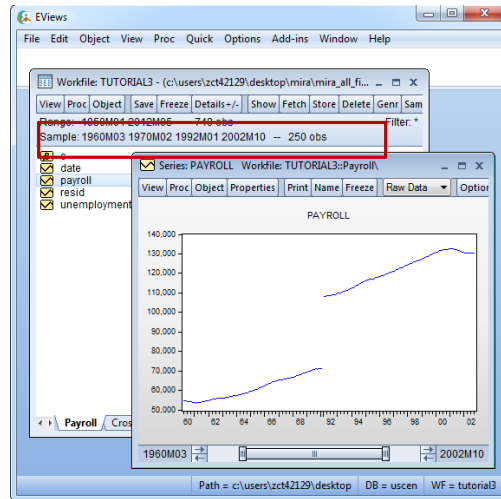


8

Changing the Sample in Time Series Data Date Pairs: Example 2 (cont'd)



- The result is shown here.
- The range is the same as before (January 1950 – May 2005), but the sample has changed as we specified.
- Note that the graph (and all other analysis) reflect the new sample.
- There is a break in the graph of the series because Jan 1992 comes right after February 1970, as was specified in the sample box.



9

Changing the Sample in Cross-Section Data Observation Pairs



- In case of cross-section data, the cross-section identifier **CANNOT** be used to set/change the sample.
- To work through an example for cross-section data, click the **cross_section** page in *Data.wf1* in order to activate that Page.
- Here we have population data for all 50 U.S. states in 2000.

State	Population
Alabama	4447100
Alaska	626932
Arizona	5130632
Arkansas	2673400
California	33871648
Colorado	4301261
Connecticut	3405565
Delaware	783600
Florida	15982378
Georgia	8186453
Hawaii	1211537
Idaho	1293953
Illinois	12419293
Indiana	

10

Changing the Sample in Cross-Section Data Observation Pairs: Example 1



- Suppose you would like to work with a subsample of US states that includes Arizona through Hawaii.
- For this, you must set the sample based on their observation order (3 through 11) and not by using the *state* identifier.

State	Population
Alabama	4447100
Alaska	626932
Arizona	5130632
Arkansas	2673400
California	33871648
Colorado	4301261
Connecticut	3405565
Delaware	783600
Florida	15982378
Georgia	8186453
Hawaii	1211537
Idaho	1293953
Illinois	

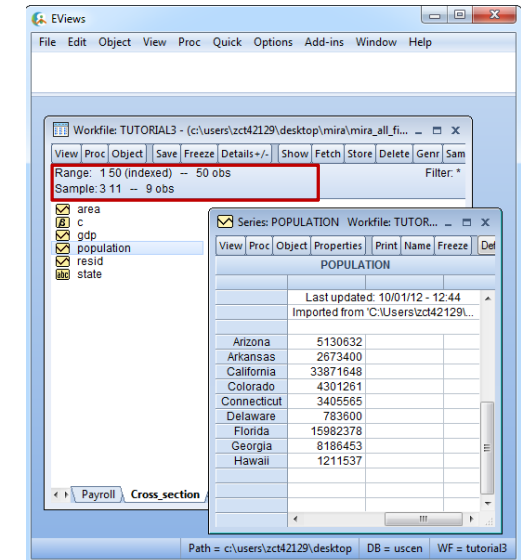
The 'Sample' dialog box shows the 'Sample range pairs (or sample object to copy)' field with the value '3 11'. The 'OK' button is highlighted.

11

Changing the Sample in Cross-Section Data Observation Pairs: Example 1 (cont'd)



- The result is shown here.
- The range is the same as before (50 states), but the sample only include the 9 states we specified.
- As expected, after the sample change, all analysis (graphs, stats, regressions) are carried out over the new sample.



12

Changing the Sample in Cross-Section Data Observation Pairs: Example 2



- As another example, consider defining the sample over consecutive and non-consecutive observation pairs.

Define the sample over consecutive and non-consecutive pairs.

- Select any of the methods (1-3) that allow you to change the sample.
- The **Sample** dialog box opens up. In the upper portion of the box under **Sample range pairs**, type the new sample in observation pairs.
2 2 6 6 8 10 25 25
- Click **OK**.

Note: this command instructs EViews to include only the following observations: 2nd, 6th, 8-10 and 25th.

13

Changing the Sample in Cross-Section Data Observation Pairs: Example 2 (cont'd)



- The result is shown here.
- The range is the same as before (50 states), but the sample only includes the 6 states we specified.

POPULATION	
Last updated: 10/01/12 - 12:44 Imported from 'C:\Users\zct42129\Desktop\...	
Alaska	626932
Colorado	4301261
Delaware	783600
Florida	15982378
Georgia	8186453
Missouri	5595211

Sample Keywords



- EViews uses special keywords which make it easier to define samples.

Function	Description
@all	Refers to the workfile range (includes all observations)
@first @last	Also refers to the workfile range (all obs. from first to last)
@first @first	Includes the first observation only
@last @last	Includes the last observation only

15

Sample Keywords: Example



- Let's show the use of sample keywords through an example.

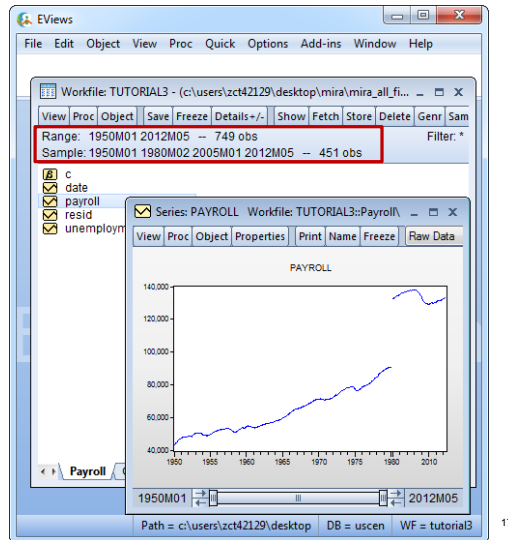
Define the sample from the beginning of the workfile range to Feb 1980 and from Jan 2005 to the end of the workfile

- Click on the workfile page *Payroll*.
- Select any of the methods (1-3) that allow you to change the sample.
- The **Sample** dialog box opens up. In the upper portion of the box under **Sample range pairs**, type the new sample placing spaces between keywords and dates. As usual, all specifications are done in date pairs:
@first 1980m2 2005m1 @last
- Click **OK**.

16

Sample Keywords: Example (cont'd)

- The result is shown here.
- The range is the same as before (January 1950 – May 2005), but the sample has changed.
- The sample now runs from January 1950 (the first observation denoted by **@first**) to February 1980 and from January 2005 to May 2012 (the end of the range denoted by **@last**).
- Note that the graph (and all other analysis) now reflect the new sample.



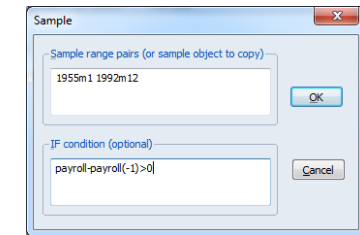
17

Sample “If” Statements: Example 1

- The lower portion of the **Sample** dialog box allows you to add conditions to sample specifications.
- Suppose you want to restrict the sample only to those observations when “*payroll*” increased compared to the previous month over the 1955-1992 period.

Define sample using “if” condition: Example 1

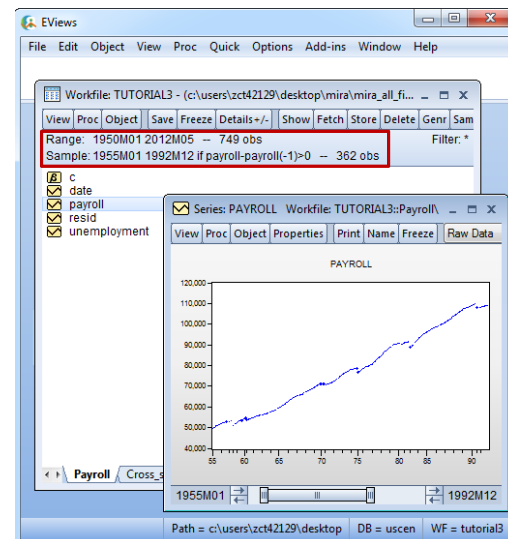
- Select any of the methods (1-3) that allow you to change the sample.
- The **Sample** dialog box opens up. In the upper portion of the box, type first the sample dates (in pairs).
1955m1 1992m12
- In the bottom portion of the **Sample** box under **IF condition**, type:
payroll-payroll(-1)>0
This specification instructs EViews to only include those observations when payroll increased from the previous month.
- Click **OK**.



Note: *payroll(-1)* denotes the first lag of *payroll series*. For more details on series lags see the tutorial on *Data Functions*.

Sample “If” Statements: Example 1 (cont'd)

- The result is shown here.
- The range is the same as before (January 1950 – May 2005), but the sample has changed.
- The sample now runs from January 1955 – December 1992 and includes only those months when payroll levels rose compared to the previous month.
- Note that by default, EViews drops the excluded observations (months when payrolls declined or stayed the same compared to the previous month).

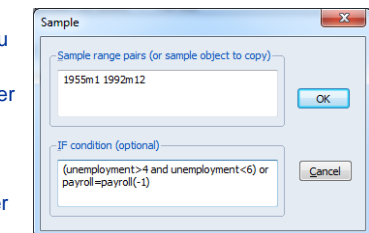


Sample “If” Statements: Example 2

- Let's work on a slightly more complex example.
- Suppose you would like to restrict the sample to those observations when “*unemployment*” was between 4% and 6% or when “*payroll*” was unchanged from the previous month.

Define sample using “if” condition: Example 2

- Select any of the methods (1-3) that allow you to change the sample.
- The **Sample** dialog box opens up. In the upper portion of the box, type first the sample dates (in pairs).
1955m1 1992m12
- In the bottom portion of the **Sample** box under **IF condition**, type:
(unemployment>4 and unemployment<6) or payroll=payroll(-1)
- Click **OK**.



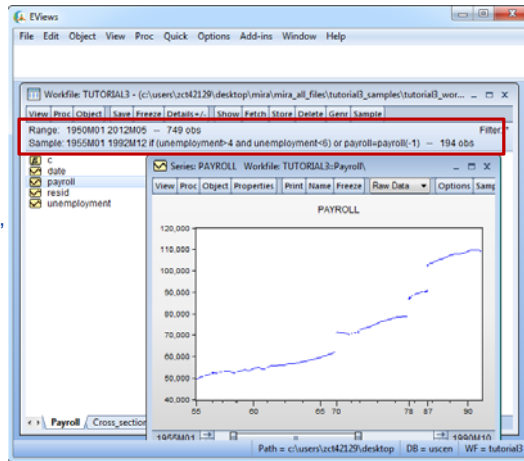
Note: this command instructs EViews to include only those observations when “*unemployment*” was between 4 and 6 or when “*payroll*” was unchanged from the previous month



Sample “If” Statements: Example 2 (cont'd)



- The result is shown here.
- The range is the same as before (January 1950 – May 2005), but the sample has changed.
- The sample now runs from January 1955 – December 1992 and includes only those months when “unemployment” was between 4% and 6%, or payroll levels remained unchanged from the previous month.
- Note that by default, EViews drops the missing observations so the sample is defined over those months that satisfy the “if” condition.



21

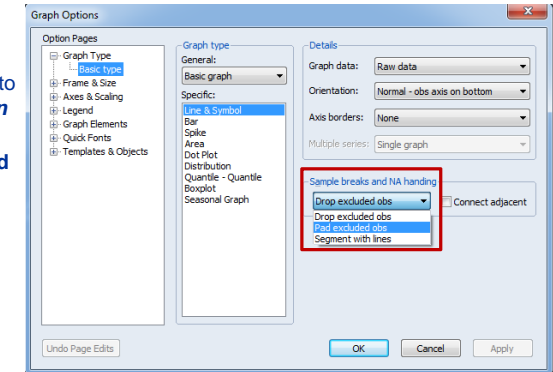
Sample “If” Statements: Example 2 (cont'd)



- You can change the graph so that the sample is defined over all months.
- In these cases, the months when the “if” condition does not hold are shown as missing data (see *Advanced Graphing* tutorial for more details).

To change the graph defined over a sample:

- Double-click on the graph to bring up the **Graph Option** dialog box.
- Under **Sample breaks and NA handling**, select **Pad excluded obs**.
- Click **OK**.

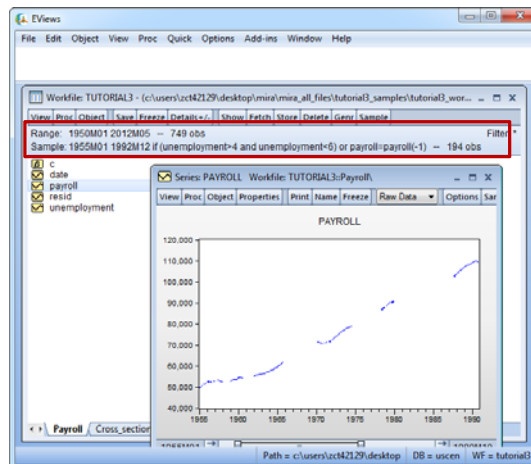


22

Sample “If” Statements: Example 2 (cont'd)



- The result is shown here.
- As you can see, the sample is the same as before, but the graph has changed to include all months in the 1955-1992 period.
- Those months for which the “if” statement does not hold are shown with missing data.



23

Sample Ranges and Mathematical Expressions



- Sample ranges can be defined by using mathematical expressions.
- This is normally used to define a fixed-width window of observations.

Function	Description
@first+12 @last	Excludes the first 12 observations
@first @first+11	Captures only the first 12 observations
@first @last-15	Excludes the last 15 observations
@last-14 @last	Captures only the last 15 observations
1960m3 1960m3+11	Defines a sample with 12 observations starting in <i>March 1960 – Feb 1961</i>

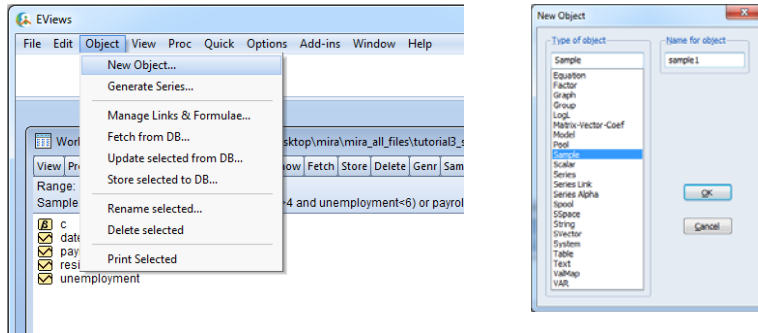
24

Sample Objects

- If you need to work with a number of different samples, it may be useful to define these samples as **Objects**.

To create a *Sample Object*

- Select **Object** → **New Object** from the menu.
- Click the **Sample** option, name it (in this case *sample1*), and then click **OK**.
- The **Sample** dialog box opens up; specify your sample here.

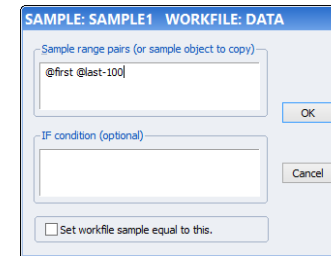


25

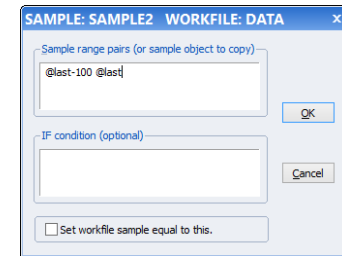
Sample Objects (cont'd)

- Lets create two sample objects:
 - ✓ Sample 1: includes all but the last 100 observations of the data.
 - ✓ Sample 2: includes only the last 100 observations of the data.
- Note: before proceeding with these two sample objects, lets first set the sample equal to the workfile range by typing in the command window:

smpl @all



Sample1 excludes the last 100 observations from the workfile range

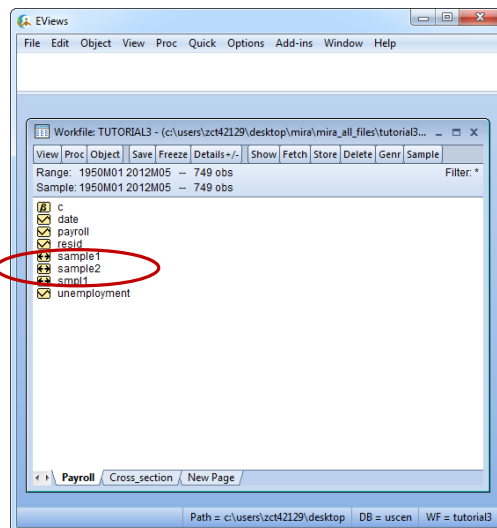


Sample2 includes only the last 100 observations from the workfile range

26

Sample Objects (cont'd)

- Both are saved as Objects in workfile.



27

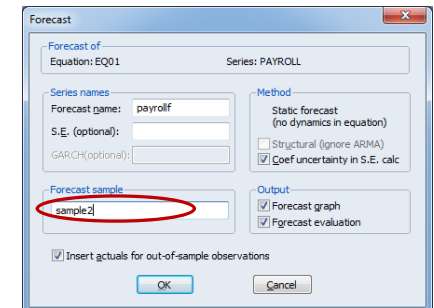
Sample Objects (cont'd)

- You can estimate your equation model in the first sample by typing in the command window:

Smpl sample1
Is payroll c unemployment
- And perform forecast evaluation in the second sample by clicking the **Forecast** button and changing the sample to **sample2**.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	62005.55	3973.086	15.60639	0.0000
UNEMPLOYMENT	3965.118	676.7734	5.858657	0.0000

R-squared: 0.050381 Mean dependent var: 84468.64
 Adjusted R-squared: 0.048914 S.D. dependent var: 27216.73
 S.E. of regression: 26542.75 Akaike info criterion: 23.21398
 Sum squared resid: 4.56E+11 Schwarz criterion: 23.22777
 Log likelihood: -7530.936 Hannan-Quinn criter.: 23.21933
 F-statistic: 34.32620 Durbin-Watson stat: 0.001215
 Prob(F-statistic): 0.000000



28