

# Principles of Empirical Analysis: Session 3

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## Outline for today's session

1. Solutions for 2nd problem set
2. Tips and help for the 3rd problem set

## 2nd Problem set

This time data was already in correct format!

For data preparations you needed to merge the CPI to Flead using merge command and create the education classification.

In the analysis part the hardest thing was to calculate the growth rate by percentile

- We will go through this in detail in class.

How to draw random numbers in Stata

T-test and storing results

Constructing a loop to test multiple hypotheses

## Drawing random numbers

Good practice before drawing numbers is to set a seed so that the results can be replicated

- Seed is a number used to initialize a pseudorandom number generator
- In Stata you can type "set seed {number}"

Uniformly distributed random variables can be drawn using the uniform option: `gen random number = uniform()`

We can divide the observations in to two equal sized groups based on the random number

- Those with random number below 50th percentile consist one group and those with random number over 50th percentile belong to the other group

## T-test and storing results

T-test can be used to test whether the means of two sub-groups are statistically significantly different

In Stata you can do this by typing `ttest variable, by(group)`

Stata automatically stores the results. You can "call" the test statistics by typing `r(test statistics)`

Often you want to store results of multiple tests (or regressions) to a matrix or a vector

- In Stata you can do this by first creating a matrix and then storing results there

## Creating a loop to test multiple hypothesis

In your exercise you are asked to conduct multiple t-test

This can be easily done by using a loop

- Today I demonstrate how to conduct multiple t-test where you change the test variable
- In your exercise you need to loop over different groups (men aged 20-29 etc.) holding the test variable constant
- To generate group-ids you can use the egen group option