

Applied Macroeconomics

Practical 1

Main aims: (i) generate a time series in Stata; (ii) compare different kinds of time-series processes.

Install Stata using the load applications menu.

Open Stata, start a do file. If you do not know how to do it then follow these steps:

- from the menu bar on top click on 'Windows'
- you will see an option 'Do-file Editor', click on this
- you should get the option 'New Do-file Editor', click on this
- an untitled.do file will open - you can give it any name you want and save it wherever you want.

(The commands below can be typed interactively as well in the command window, but it is always a good practice to maintain a do file.)

```
set obs 100

/*generate a white noise process*/
gen wn=invnormal(uniform())
label var wn "white noise process"
summ wn

/*tsset the data, without this STATA will not recognize that you have time series*/
gen t=_n
tsset t

tsline wn

/*series with pure deterministic trend*/
gen y=1+0.5*t+wn
tsline y
regress y t
predict ys, resid
label var ys "detrended series y"
tsline ys
tsline ys wn

/*deterministic trend with stationary AR(1) component*/
gen y1=wn if t==1
replace y1=0.7*y1+0.5*t+wn if t>1
tsline y1
regress y1 t
predict ys1, resid
label var ys1 "detrended series y1"
tsline ys1

/*stationary AR(1) series*/
gen y2=wn if t==1
replace y2=0.7*y2+wn if t>1
tsline y2
tsline y2 ys1

/*random walk*/
gen y3=wn if t==1
replace y3=1.y3+wn if t>1
tsline y3
tsline y2 y3
```