Stata Intermediate & Monte Carlo Simulation

Chap2 Stata进阶

1. `bysort` , `egen` , `binscatter`

- 数据类型

Storage type	Minimum	Maximum	Closest to 0 without being 0	bytes
byte	-127	100	+/-1	1
int	-32,767	32,740	+/-1	2
long	-2,147,483,647	2,147,483,620	+/-1	4
float	-1.70141173319*10^38	1.70141173319*10^38	+/-10^-38	4
double	-8.9884656743*10^307	8.9884656743*10^307	+/-10^-323	8

- 数据格式转换

```
format varlist %fmt
format %fmt varlist
```

> %9.2f

2.数据类型转换：`destring`，`tostring`，`encode`，`decode`，`real`

- 字符串提取：

```
gen newvar1 = substr( str1 ,1,3)
gen newvar2 = substr( str2 ,-2,.)
```

- 日期数据处理：

```
gen date1 = date( date , "YMD")
```

3.数据拆分与合并：横向拆分与纵向拆分，`append`，`merge`

```
merge 1:1 varlist using filename
keep if _merge == 3
drop _merge

merge m:1 varlist using filename, nogen

merge 1:m varlist using filename
merge m:m varlist using filename
merge 1:1 _n using filename
```

4.长宽数据转换：`reshape`

```
reshape wide var, i(id) j(year)
reshape long var, i(id) j(year)
```

5.条件语句

```
local score = 88
if `score' >= 90{
        di "优秀"
}
else if `score' >= 80{
        di "良好"
}
else if `score' >= 70{
        di "一般"
}
else if `score' >= 60{
        di "合格"
}
else{
        di "不合格"
}
```

6.循环语句

- `while`

```
set obs 1
gen sum = 0
local i = 1
local n = 100
while `i' <= `n' {
        qui replace sum = sum + `i'
        local i = `i' + 1
}
list
```

- `forvalues`

```
set obs 1
gen sum = 0
forvalues i = 1/100 {
        qui replace sum = sum + `i'
}
list
```

- `foreach in/of`

```
foreach v of varlist d81-d87{
        gen `v'educ = educ*(`v')
}
```

Chap3 一元线性回归及蒙特卡罗模拟

chap3.1_Stata模拟重复抽样.do download

chap3.2_simulate修改.do download

chap3.3_同方差异方差.do download

> 安慰剂检验：参考 `BV13E421w79K`

可视化网站：

Ordinary Least Squares, PGFplots.net, Stata Graph Gallery, Stata Visual Library

第二章上机练习

```
//C8
*(i)
clear
set seed 1234
set obs 500
gen x = runiform()*10
sum x
*(ii)
gen u = rnormal(0, 1)*6
sum u
*(iii)
gen y = 1 + 2 * x + u
reg y x
*(iv)
predict uhat, r
egen suh = sum(uhat)
sum suh
egen sxuh = sum(x*uhat)
sum sxuh
*(v)
egen su = sum(u)
sum su
egen sxu = sum(x*u)
sum sxu
*(vi)
clear
set seed 10101
```