

SOC 5050: Week 10 Commands Quick Reference

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Macros

Local Macros

```
local macroName "string"  
local macroName = val  
display 'macroName'
```

Global Macros

```
global macroName "string"  
global macroName = val  
display $macroName
```

Scalars

```
return list1
```

¹ This command must be executed after a statistical test that stores scalars.

MarkDoc

```
txt "The average of the variable 'x' is " ///  
    %10.3f 'mpgMean' " ." 2
```

² This can only be run during a MarkDoc session. The text %10.3f rounds the output to the thousandths place.

if and in Qualifiers

if

This qualifier can be used to set a condition on almost any command in Stata. The if qualifier should appear *before* any command options but after the main body of the command. The if qualifier must be paired with an expression that Stata can evaluate. The expression should use relational and (optionally) logical operators.

Relational Operators

> - greater then
< - less then
>= - greater then or equal
<= - less then or equal
== - equal³
!= - not equal

³ This is a common point of confusion for new programmers. Stata (and other languages) use a single equals sign (=) for the assignment of a value to an object. In order to differentiate the evaluation of an expression from this assignment, evaluations use the double equals sign (==).

Relational Operators

& - and

| - or

! - not

Combining Operators

```
summarize var1 if var2 <= 10
```

```
summarize var1 if var3 == 4
```

```
summarize var1 if var2 <= 10 & var3 == 4
```

in

This qualifier allows you to limit the scope of a command to a particular set of observations.⁴

```
list var1 in 1
```

```
list var1 in 1/10
```

⁴ The `list` command will display data for the given variables and (optionally) observations. A forward slash (/) can be used to specify a range of values.

The `in` qualifier is used far less frequently than the `if` qualifier. It is used principally for data exploration and occasionally (in narrowly applied) for data manipulation.

*T-Tests**One Sample T-Test*

```
ttest yVar = mu
```

Levene's Test

```
sdtest yVar, by(xVar)
```

Independent Samples T-Test

```
ttest yVar, by(xVar) [unequal welch]
```

Dependent Samples T-Test

```
ttest g1Var==g2Var
```

Cohen's d

```
esize twosample yVar, by(xVar) cohensd [unequal welch]
```

Graphing Means

Collapsing Data

For graphing single means as well as means from independent samples, data must be “collapsed” or summarized using the

`collapse` command:

```
collapse (mean) mVar = yVar (sd) sVar = yVar (count) nVar=yVar [, by(xVar)]
```

Standard Error Bar Chart

```
serrbar mVar sVar xVar, scale(val)
```

This chart typically requires significant alternation to make it useable.

The following twoway graph options are *strongly recommended* for all graphs:

```
ytitle("string") - y-axis title
```

```
xlabel({xVal "string" xVal "string" | none}) - x-axis labels5
```

```
xtitle({"string" | ""}) - x-axis title
```

```
title("title text")
```

```
subtitle("subtitle text")
```

```
note("note text")
```

```
caption("caption text")
```

⁵ Pairs of `xVal` and *strings* can be repeated as necessary. For these graphs, you will need two pairs.

The following twoway graph options are *strongly recommended* for one sample t-test graphs *only* to visualize μ :

```
yline(yVal, lcolor(color)) - draw horizontal line representing  $\mu$ 
```

```
text(yVal 1 "&mu", place(n)) - label line as  $\mu$ 
```

The following twoway graph options *may* be needed depending on the distribution you are working with:

```
yscale(r(lowerVal upperVal)) - y-axis scale
```

```
ylabel(lowerVal(steps)upperVal, grid) - y-axis labels
```

```
xscale(r(-.2 1.2)) - x-axis scale6
```

⁶ This can be used as-is for both independent and dependent sample plots.

Typographic Details

```
{&mu} - add  $\mu$  letter
```

```
{it:string} - italicize text
```

Power Analysis

```
power twomeans mean1 mean2, sd(val) power(beta)
```

Document Details

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