

# Introduction to MLwiN commands

## Commands: the basics

- ▶ Commands are made up of 4 letters (extra letters are ignored)
- ▶ Case insensitive, but many people use capital letters for clarity
- ▶ Structure: command word comes first followed by parameters
- ▶ Columns to be acted on are specified in the parameters: the commands do not transform the whole worksheet

Command manual:

<http://www.cmm.bristol.ac.uk/MLwiN/download/manuals.shtml>

## The Command interface

- ▶ Everything that can be done by pointing and clicking (i.e. using the GUI) can also be done using commands
- ▶ Some things can only be done by using commands
- ▶ The Command interface allows commands to be entered one by one
- ▶ To save typing, clicking on a command in the top part makes it appear on the bottom line

Data Manipulation → Command interface

## Commands issued when using the GUI

- ▶ When you use the GUI, MLwiN issues commands to do what you ask
- ▶ This can be useful to provide a record of what you have done
- ▶ Can paste into a text document e.g. Word or Wordpad
- ▶ Can paste back into Command interface one by one (<CTRL+V> or right click & select Paste from menu)
- ▶ It is also a useful way to learn which command does what

Uncheck the 'user' box (view)

Highlight commands & <CTRL+C> (copy)

## Documentation of commands

- ▶ The main documentation of the commands is the Command manual though this is a little out of date
- ▶ The Manual Supplement for v2.10, the FAQs on our website and MLwiN's Help also provide some documentation

See CMM website [www.cmm.bristol.ac.uk](http://www.cmm.bristol.ac.uk)  
for Command manual, Manual Supplement, FAQs

## Macros

- ▶ Macros allow a whole series of commands to be executed
- ▶ <CTRL+V> to paste into macro
- ▶ Macros can be saved

File → New Macro

File → Save Macro as

Execute button at bottom of macro

## Running models from macros

- ▶ BATCH 1 and MAXI at the start
- ▶ STAR, NEXT or MCMC to run the model
- ▶ Blue estimates in Equations window

Section 8.4 of Manual Supplement  
Command Manual (MCMC)

## Running multiple models

- ▶ There is a PAUSE command
- ▶ There are commands to store model results in model comparison tables
- ▶ CLEAR and MWIP may be useful (BATCH 1 must go **after** CLEAR as CLEAR resets it)

Command Manual (PAUSE, CLEAR)  
Sections 4 and 8.4 of Manual Supplement

## More advanced topics

### Controlling the Equations window

- ▶ There are commands to control the Equations window display:
  - ▶ parameters or estimates (ESTM)
  - ▶ how much of the model is shown (EXPA)
  - ▶ simple or general notation (NOTA)
  - ▶ single or multiple subscripts (INDE)
  - ▶ variable names or mathematical symbols (NMVA)
- ▶ Using START 1 instead of START will update Equations window during estimation

Section 8.4 of Manual Supplement

### Loops and conditional statements

- ▶ Loops and conditional statements are not generally needed to fit models, but may be useful if running a simulation for example
- ▶ LOOP is used to mark the start of a loop and ENDLoop to mark the end.
- ▶ Only one loop is allowed per macro so the OBEY command which calls another macro is used for nested loops
- ▶ SWITCh, CASE and LEAVE are used together for conditional statements

Command manual

### Boxes and accessing values

- ▶ Boxes store a single value
- ▶ Named b1, b2, . . .
- ▶ PICK can be used to place single value from column in a box
- ▶ Other commands can also put values in boxes
- ▶ PRINT displays the value in a box
- ▶ JOIN can put boxes and columns together into a single column
- ▶ EDIT can change a single value of a column
- ▶ The number stored in a box can be used to refer to a column e.g. if the value 10 is stored in b5, then cb5 is the same as c10

Command manual

### Accessing parameter estimates

- ▶ The fixed parameters are stored in c1098 and the random parameters are stored in c1096
- ▶ This can be useful if running a simulation: generate dataset, run model, PICK parameter value to a box, JOIN onto a column, generate next dataset. . .

FAQ 'Where is the model fitting information stored in MLwiN?'