

# A Quick Tutorial on Using LIMDEP in the Fungler PC Lab

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- 1) LIMDEP is a collection of statistical and econometric routines
  - its primary strengths are its specialized and relatively advanced microeconomic, cross-section routines (it has some specialized time series routines too)
  - many of the statistical procedures discussed in Greene's *Econometric Analysis* text are available (Greene is the author of LIMDEP); the LIMDEP manual also follows the *Econometric Analysis* text pretty closely
  - it is not as helpful for data manipulation and management as SAS; a good strategy is to
    - use SAS for data processing and simple statistics and
    - use LIMDEP for more advanced statistics only after the data are prepared and initially analyzed
  - my experience is that LIMDEP is more "buggy" and "quirky" than SAS; I would not publish a result based on a LIMDEP statistical analysis without performing some type of confirmatory analysis
  
- 2) Basic operating principles
  - Batch vs. Interactive operation
    - LIMDEP is geared more toward interactive operation, although batch and semi-batch operation is possible
    - as with SAS, we will typically use an editor within LIMDEP to assemble commands and then submit the commands as a group (semi-batch approach)
  - Starting LIMDEP; after logging onto PC, invoke LIMDEP from Windows by clicking **Start • Course Software • ECON 277 • LIMDEP7**
  - LIMDEP will open two windows
    - a command window with a [N]==> prompt appears in the foreground
    - an editing/listing window appears in the background
  - Ending a session:
    - at the [N]==> prompt, type **STOP**
    - will be prompted whether you want to save your work
  - LIMDEP maintains three types of active data work areas
    - an internal data array (rows are observations, columns are variables)
    - a matrix buffer
    - names and values for scalar values
  
- 3) LIMDEP commands
  - General structure of LIMDEP Commands:

**VERB ; specification ; specification ; ... ; specification \$**
  - verb: a four character string that lists the function to be

- performed
  - specification: information used by the function that tells it how or on what to perform
  - \$: indicates the end of the command (not always needed)
- Comments
  - everything following a ? on a line is treated as a non-executable comment
  - extra characters following the first four characters of a command verb and the semicolon indicating the start of the first specification are also treated as a comment (restated, LIMDEP only reads the first four characters of a command verb and nothing else until it hits a semicolon or \$)

#### 5) Editing commands within LIMDEP

- To enter the editor,
  - at the [N]==> prompt, type **EDIT**
  - this will open a full-screen editing window (the screen will change)
- To leave the editor and return to the command window, press the *Esc* key
- To get a list of available commands and help, press the *Shift+F10* keys
- To read an existing file into the editor, press the *F1* key (LIMDEP treats this as the “active” file); be careful, typing *F1* clears the existing editing screen
- To write out to a file, press the *F2* key

#### 6) Other general system commands

- to obtain descriptions of the contents of the current work areas, type **STATUS \$**
- to clear the current work areas and restart the session, type **RESET \$** (note: this command is useful if you have run some commands already, made some changes and want to re-run the new commands)
- to redirect where the statistical output is sent, type

**OPEN ; OUTPUT = filename \$**

- to close the output file, type **CLOSE \$**

#### 7) Commands to input data

- basic syntax is

**READ; specification \$**

- specifications include
  - NOBS** = number of observations
  - NVAR** = number of variables
  - NAMES** = list of variable names separated by commas
  - FILE** = name of input data file
  - FORMAT** = format description (either a set of FORTRAN codes or an indicator for a spreadsheet format)

### Example LIMDEP Program (sample1.lim)

? LIMDEP program to input AFDC data, create alternative price variable,  
? compute means, and run a regression

```
READ ; NOBS = 1224 ; NVAR = 20 ;  
    NAMES =    fips, year, rafdc4, rafdc, rafdcfs4, rbensum, rinc, xprice,  
              xsshare, xrecip, xada, xpcbl, xage65, xpc14un, xpchs, xpcco,  
              xtsexrt, xfunem, rrtinc, pce ;  
    FILE = c:\temp\ECON277\afdcrest.asc $
```

```
REJECT ; year < 1981 $                ? Eliminate 1969-80 data
```

```
CREATE ; tprice = xsshare * xrecip $   ? Alternative price variable
```

```
DSTAT ; RHS = * $
```

```
REGRESS ;  LHS = rafdc4 ;  
           RHS = xprice, rinc, xpcbl, ONE $
```

- 8) Commands to manipulate data
- to create new variables enter

**CREATE ; variable\_name = math expression \$**

- to delete observations enter

**REJECT ; logical condition \$**

- 9) For simple descriptive statistics type

- **DSTAT ; RHS = list of variables \$** to get statistics for a subset of variables, or
- **DSTAT ; RHS = \* \$** to get statistics for all the variables in the data set

- 10) Standard (OLS) regression

- the basic commands are

**REGRESS ;           LHS = dependent variable ;  
                      RHS = list of independent variables \$**

- if you want to include an intercept, you need to include the special LIMDEP

- variable **ONE** in the list of right-hand-side variables  
the regression procedure generates coefficients, standard errors, t-statistics and p-values for individual coefficient significance tests, fit statistics, autocorrelation statistics, etc.