

## Cross section exercise

This exercise provides some practise in cross section econometrics and a chance to use Stata

The data set contains a cross section of UK companies with information on their size in 1980 and in 1985. You will check to see if there is any relation between company survival and growth using limited dependent variable estimation methods.

The exercise is based on: Dunne, P. and A. Hughes (1994) "Age, Size, Growth and Survival: UK Companies in the 1980s", *Journal of Industrial Economics*, Vol XLII, No 2, June, 1994, pp 115-40.

## Stata Exercise: Growth, Survival and Firm Size

- Open Stata
- Download relevant data file for exercise, read the data file into Excel, then block and copy
- Open the data editor window in Stata and paste data in
- Type:

```
summarize size ind dy ls85 ls80 lage
corr ls85 ls80 lage dy
reg ls85 ls80
```

- NB don't need to specify constant to run regression
- Note N=1101 because missing values automatically dropped
- Should get

$$\begin{array}{rclcl} \text{ls85} & = & 1.3 & + & 0.95 \text{ ls80} \\ & & (5.8) & & (69.1) \\ & & \text{Rsq} = 0.8 & & \text{N}=1011 \end{array}$$

- Open the log file and give it a name
- Open the do file editor add age to the regression and run
- Check out the regression post estimation menu and look at plots
- Get robust standard errors –add , robust to end of equation
- Estimate survival probability equations by typing

```
probit dy ls80
logit dy ls80
```

- Also try adding lage
- Allow for more complex relation:

```
generate ls80sq=ls80*ls80
generate lagesq=lage*lage
generate lsage=ls80*lage
```

- Run the survival equations with the extra variables.
- You can now:
  - Save the session
  - Save the do file
  - Save and print the log file
- The next session will take this analysis further.