

SABRE

EXERCISE 1 Pooled (Cross-Sectional) Logit

File: WEMP2.DAT

THE DATA

This dataset looks at the relationship between the employment status of married women and a set of explanatory variables for 155 individuals. For each individual, data is recorded annually. There are 1580 measurements.

REFERENCE

Davies, R.B., Elias, P. and Penn, R. (1992) 'The relationship between a husband's unemployment and his wife's participation in the labour force', *Oxford Bulletin of Economics and Statistics*, 54. pp.145-171.

THE VARIABLES

case	individual identifier
femp	wife's employment status; 1=employed, 0=unemployed
mune	husband's employment status; 1=unemployed, 0=employed
time	calendar time (year-1975)
und1	children aged < 1 year old; 1=yes, 0=no
und5	children aged 1 - 5 years old; 1=yes, 0=no
age	mother's age

SABRE is an old (but gold) programme so here are some tips. Try to keep your data in the same directory as SABRE. Try to avoid long file names. If you are working on a Unix machine make sure your data is in Unix ASCII format.

1. Declare the variables; read the data; specify the response variable

```
<S> data case femp mune time und1 und5 age  
<S> read wemp2.dat  
<S> yvar femp
```

2. To keep a log of your work.

```
<S> outfile out1
```

3. Fit a cross-sectional (i.e. pooled) logistic regression model with mune as an explanatory variable. **int** specifies an interaction term in the model.

```
<S> lfit int
```

4. You can look at the output of this model.

```
<S> dis m
```

5. Now include mune in the model.

```
<S> lfit int mune
```

6. You can examine the parameter estimates for this model.

```
<S> dis e
```

dis e

Parameter	Estimate	S. Error
int	0.74174	0.55924E-01
mune	-1.8518	0.22117

7. Note the deviance and the degrees of freedom of this model.

8. Compute a simple Z score for the variable mune.

9. Compute a Wald test for the variable mune.

10. Construct a 95% confidence interval for the estimate of mune.

11. Estimate the probability of a wife being employed ($y=1$) if her husband is employed ($mune=0$).

12. Estimate the probability of a wife being employed ($y=1$) if her husband is unemployed ($mune=1$).

13. What does this suggest about the effects of husband's employment status on a wife's labour market participation?

14. Now look at the effects of the other variables und1 und5 & age.

15. Which variables are significant?

16. Which model is most appropriate?

17. Now exit SABRE and take a look in the log file out1

18. Check your work by fitting a standard logit model in SPSS using wemp2.sav or in STATA using wemp2.dta .