Example 5: Estimations of the panel logit models explaining female labor participation using a fictitious dataset

The definitions of variables are inherited from those in the manuals “dfelrtna.pdf” and “dfelrtnb.pdf”.

**Dataset**

: fls1986 - fls1992 (female labor supply: 1=supply; 0=no supply, from 1986 to 1992)

: hdbt1986 - hdbt1992 (log of husband’s debt, from 1986 to 1992)

: hinc1986 - hinc1992 (log of husband’s income, from 1986 to 1992)

(Number of individuals)

The model when using the program “dfelrtna.tsp” described later is appropriate for this dataset. True values of parameters generating this dataset are



























and accordingly,







.

In both files “prma.tsp” and “prmb.tsp”, the command

set sdgp = -99999 ;

is used, so that the seed for generating random starting values for the parameters of interest in the optimization trials is automatically created in TSP. Accordingly, we can obtain no reproducible result.

Model, Moment conditions, and parameters to be estimated when using the program “dfelrtna.tsp”

**Model**

,

for .











**Moment conditions**

Used moment conditions based on g-form

, for ,

,

for ; ,

,

for ;,

,

for ;.

Used moment conditions based on h-form

, for ,

,

for ; ,

,

for ;,

,

for ;.

As for the last two types of g-form and h-form moment conditions, we should note that we have the lower and upper limits of using instruments for the transformed equations:

 and  are instruments for the transformed equations  and  for ;

 and

 are instruments for the transformed equations  and

 for ;

 and  are instruments for the transformed equation  and  for ,

because the commands

set spu\_hdbt = 1986 ; set epu\_hdbt = 1991 ;

set spu\_hinc = 1986 ; set epu\_hinc = 1991 ;

and

set d\_hdbt\_sg = 2 ; set d\_hdbt\_eg = -2 ;

set d\_hinc\_sg = 2 ; set d\_hinc\_eg = -2 ;

are used.

**Parameters to be estimated**

: g\_fls\_lag1

: b\_hdbt

: b\_hdbt\_lag1

: b\_hinc

: b\_hinc\_lag1

: dtd1988

: dtd1989

: dtd1990

: dtd1991

Model, Moment conditions, and parameters to be estimated when using the program “dfelrtnb.tsp”

**Model**

, for .



**Moment conditions**

Used moment conditions based on g-form

, for ,

, for ; .

Used moment conditions based on h-form

, for ,

, for ; .

**Parameters to be estimated**

: g\_fls\_lag1

: dtd1988

: dtd1989

: dtd1990

: dtd1991