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1 *****
2 * A Practical Guide to Using Panel Data
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5 * Chapter 10
6 *****
7
8 clear all
9 version 12
10 set more off
11 capture log close
12
13 cd "C:\My Documents"
14
15 global datadir "S:\final"
16 global dirresults "C:\My Documents\"
17
18 log using "$dirresults\Example_Chapter10.log", replace
19
20
21 * 10.2.1 Modelling Unobserved Heterogeneity
22 *-----
23
24 foreach w in m n o p q r {
25     use `w'hid pid `w'sex `w'mastat `w'age `w'qfachi `w'region2 ///
26     `w'jbstat `w'memorig `w'lfsato ///
27     using "$datadir/`w'indresp", clear
28     renpfix `w'
29     capture rename id pid
30     gen wave = index("abcdefghijklmnopqr", "`w'")
31     if indexnot("m", "`w'") append using temp
32     save temp, replace
33 }
34 quietly mvdecode _all, mv(-9/-1)
35
36 ** We create the same variables we created for Chapter 8, but now starting
37 ** with the pooled dataset we created in Chapter 4
38 recode jbstat (1 2 = 1) (3/10 = 0), gen(Employed)
39 label define Employed 1 "Employed/Self-Employed" 0 "Unemployed or Inactive"
40 label value Employed Employed
41
42 generate age2 = age*age
43 label var age2 "age squared"
44
45 generate Female = 1 if sex == 2
46 replace Female = 0 if sex == 1
47 label var Female "Dummy for women"
48
49 generate Married = 1 if mastat == 1 | mastat == 2 | mastat == 7
50 replace Married = 0 if (mastat >= 3 & mastat <= 6) | (mastat >= 8 & mastat < .)
51 label var Married "Whether married or cohabiting"
52
53 recode qfachi (1 = 2)
54 label define Q 2 "1st degree or higher" 3 "hnd,hnc,teaching" 4 "a level" ///
55     5 "o level" 6 "cse" 7 "none of these qualif", modify
56
57 tabulate qfachi, gen(Q)
58 label var Q1 "1st degree or higher"
59 label var Q2 "hnd,hnc,teaching"
60 label var Q3 "a level"
61 label var Q4 "o level"
62 label var Q5 "cse"
63 label var Q6 "none of these qualif"
64
65 tabulate region2, gen(R)
66 label var R1 "North East"
67 label var R2 "North West"
68 label var R3 "Yorkshire & Humber"
69 label var R4 "East Midlands"
70 label var R5 "West Midlands"
71 label var R6 "East of England"
72 label var R7 "London"
73 label var R8 "South East"
74 label var R9 "South West"
75 label var R10 "Wales"

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76 label var R11 "Scotland"
77 label var R12 "Northern Ireland"
78
79 * Analysis sample
80 keep if Female == 0
81 keep if Employed < . & age < . & Married < . & qfachi < . & region2 < 13
82
83 * define local macro of regressors
84 local vlist c.age##c.age i.Married ib6.qfachi ib7.region2
85
86
87 * 10.2.2 Pooled Estimations
88 *-----
89
90 regress Employed `vlist', vce(cluster pid)
91 margins, dydx(*)
92 probit Employed `vlist', vce(cluster pid)
93 margins, dydx(*)
94 logit Employed `vlist', vce(cluster pid)
95 margins, dydx(*)
96
97
98 * 10.2.3 Random Effects Estimators
99
100 xtset pid wave
101
102 xtreg Employed `vlist', re
103 margins, dydx(*)
104
105 xtprobit Employed `vlist', re
106 quadchk, nooutput
107 xtprobit Employed `vlist', re intpoints(50)
108 quadchk, nooutput
109 margins, dydx(*)
110
111 xtlogit Employed `vlist', re
112 quadchk, nooutput
113 xtlogit Employed `vlist', re intpoints(50)
114 quadchk, nooutput
115 margins, dydx(*)
116
117
118
119 * 10.2.4 Fixed Effects Estimators
120 *-----
121
122 xtreg Employed `vlist', fe
123 margins, dydx(*)
124
125 xtlogit Employed `vlist', fe or
126
127 xtlogit Employed `vlist', fe
128
129 clogit Employed `vlist', group(pid)
130
131 bysort pid: egen check1 = mean(Employed & Employed < .)
132 bysort pid: egen check2 = mean(R12 & R12 < .)
133 * identify the first observation for each person
134 bysort pid (wave): generate firstobs = 1 if _n == 1
135 * How many individuals for whom check is 0 or 1
136 tabulate check1 if firstobs == 1 & inlist(check1,0,1)
137 tabulate check2 if firstobs == 1
138
139
140 clogit Employed `vlist', group(pid) or
141
142
143 * 10.2.5 Mundlak Correction
144 *-----
145
146 tabulate(wave), gen(Wave)
147 foreach v of varlist age age2 Married Q1-Q5 R1-R6 R8-R12 Wave* {
148     bysort pid: egen M_`v'=mean(`v')
149 }
150 xtprobit Employed `vlist' Wave2-Wave6 M_*, re

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151 margins, dydx(*)
152
153
154 * 10.2.6 Comparing Different Models
155 *-----
156
157 * Hausman tests
158 xtlogit Employed `vlist', fe
159 estimates store consistent
160 xtlogit Employed `vlist', re intpoints(50)
161 estimates store efficient
162 hausman consistent efficient
163
164
165 * 10.3 Panel Data Methods for Ordered Outcomes
166 *-----
167
168 generate Unemployed = 1 if jbstat == 3
169 replace Unemployed = 0 if jbstat == 1 | jbstat == 2
170
171 tabulate lfsato
172
173 reoprob lfsato Unemployed age age2 Married R1-R6 R8-R12 ///
174             M_age M_age2 M_Married M_R* ///
175             if age >= 23, i(pid)
176 margins, dydx(Unemployed)
177
178
179 xtreg lfsato Unemployed age age2 Married R1-R6 R8-R12 if age >= 23, fe
180
181 recode lfsato (0/3 = 0) (4/7 = 1), gen(satisf_dummy)
182 xtlogit satisf_dummy i.Unemployed age age2 i.Married ib7.region2 ///
183             if age >= 23, or fe
184
185
186 erase temp.dta
187 log close
188

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