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Exercise 6 – Advanced Econometrics

Problem 1

(A)

Ordered probit model for pctstk

|  |  |
| --- | --- |
|  | (1) |
| VARIABLES | pctstck |
|  |  |
| choice | 0.371\*\* |
|  | (0.184) |
| age | -0.0501\*\* |
|  | (0.0226) |
| educ | 0.0261 |
|  | (0.0353) |
| female | 0.0456 |
|  | (0.206) |
| black | 0.0934 |
|  | (0.282) |
| married | 0.0936 |
|  | (0.233) |
| finc25 | -0.578 |
|  | (0.423) |
| finc35 | -0.135 |
|  | (0.431) |
| finc50 | -0.262 |
|  | (0.427) |
| finc75 | -0.566 |
|  | (0.478) |
| finc100 | -0.228 |
|  | (0.469) |
| finc101 | -0.864 |
|  | (0.529) |
| wealth89 | -9.56e-05 |
|  | (0.000374) |
| prftshr | 0.482\*\* |
|  | (0.216) |
| Constant cut1 | -3.087\* |
|  | (1.624) |
| Constant cut2 | -2.054 |
|  | (1.619) |
|  |  |
| Observations | 194 |

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

1. Ordered probit model with heteroskedasticity-robust to cluster correlation within family

|  |  |
| --- | --- |
|  | (1) |
| VARIABLES | pctstck |
|  |  |
| choice | 0.371\*\* |
|  | (0.183) |
| age | -0.0501\*\* |
|  | (0.0242) |
| educ | 0.0261 |
|  | (0.0351) |
| female | 0.0456 |
|  | (0.200) |
| black | 0.0934 |
|  | (0.253) |
| married | 0.0936 |
|  | (0.255) |
| finc25 | -0.578 |
|  | (0.524) |
| finc35 | -0.135 |
|  | (0.500) |
| finc50 | -0.262 |
|  | (0.496) |
| finc75 | -0.566 |
|  | (0.539) |
| finc100 | -0.228 |
|  | (0.534) |
| finc101 | -0.864 |
|  | (0.539) |
| wealth89 | -9.56e-05 |
|  | (0.000374) |
| prftshr | 0.482\* |
|  | (0.251) |
| Constant cut1 | -3.087\* |
|  | (1.724) |
| Constant cut2 | -2.054 |
|  | (1.714) |
|  |  |
| Observations | 194 |

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Ordered probit model with heteroskedasticity-robust standard errors

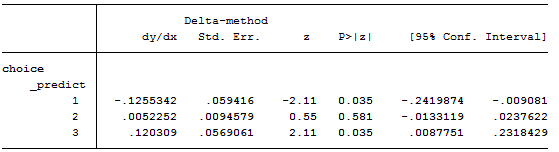
|  |  |
| --- | --- |
|  | (1) |
| VARIABLES | pctstck |
|  |  |
| choice | 0.371\*\* |
|  | (0.178) |
| age | -0.0501\*\* |
|  | (0.0246) |
| educ | 0.0261 |
|  | (0.0350) |
| female | 0.0456 |
|  | (0.205) |
| black | 0.0934 |
|  | (0.260) |
| married | 0.0936 |
|  | (0.247) |
| finc25 | -0.578 |
|  | (0.495) |
| finc35 | -0.135 |
|  | (0.486) |
| finc50 | -0.262 |
|  | (0.475) |
| finc75 | -0.566 |
|  | (0.516) |
| finc100 | -0.228 |
|  | (0.515) |
| finc101 | -0.864\* |
|  | (0.518) |
| wealth89 | -9.56e-05 |
|  | (0.000359) |
| prftshr | 0.482\*\* |
|  | (0.244) |
| Constant cut1 | -3.087\* |
|  | (1.737) |
| Constant cut2 | -2.054 |
|  | (1.729) |
|  |  |
| Observations | 194 |

Robust standard errors in parentheses

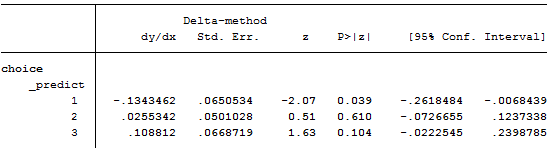
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Eyeballing the results, there are no significant difference between the standard errors between the two.

(C) The estimated average marginal effects of choice on probabilities of asset allocation in defined contribution plans



(D) Estimate the marginal effects of choice for a single, nonblack female with 12 years of education who is 60 years old. Assume she has net worth (in 1989) equal to $150,000 and earns $45,000 per year, and her plan is not profit sharing.



(E) E(pctstk |choice =1, x\*) =



E(pctstk |choice =0, x\*) =



Problem 2.

Here is the descriptive statistics

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | Obs | Mean | Std.Dev. | Min | Max |
| NR | 4,360 | 5262 | 3496 | 13 | 12548 |
| YEAR | 4,360 | 1984 | 2.292 | 1980 | 1987 |
| AG | 4,360 | 0.0321 | 0.176 | 0 | 1 |
| BLACK | 4,360 | 0.116 | 0.320 | 0 | 1 |
| BUS | 4,360 | 0.0759 | 0.265 | 0 | 1 |
| CON | 4,360 | 0.0750 | 0.263 | 0 | 1 |
| ENT | 4,360 | 0.0151 | 0.122 | 0 | 1 |
| EXPER | 4,360 | 6.515 | 2.826 | 0 | 18 |
| FIN | 4,360 | 0.0369 | 0.189 | 0 | 1 |
| HISP | 4,360 | 0.156 | 0.363 | 0 | 1 |
| HLTH | 4,360 | 0.0170 | 0.129 | 0 | 1 |
| HOURS | 4,360 | 2191 | 566.4 | 120 | 4992 |
| MAN | 4,360 | 0.282 | 0.450 | 0 | 1 |
| MAR | 4,360 | 0.439 | 0.496 | 0 | 1 |
| MIN | 4,360 | 0.0156 | 0.124 | 0 | 1 |
| NC | 4,360 | 0.258 | 0.437 | 0 | 1 |
| NE | 4,360 | 0.190 | 0.392 | 0 | 1 |
| OCC1 | 4,360 | 0.104 | 0.305 | 0 | 1 |
| OCC2 | 4,360 | 0.0915 | 0.288 | 0 | 1 |
| OCC3 | 4,360 | 0.0534 | 0.225 | 0 | 1 |
| OCC4 | 4,360 | 0.111 | 0.315 | 0 | 1 |
| OCC5 | 4,360 | 0.214 | 0.410 | 0 | 1 |
| OCC6 | 4,360 | 0.202 | 0.402 | 0 | 1 |
| OCC7 | 4,360 | 0.0920 | 0.289 | 0 | 1 |
| OCC8 | 4,360 | 0.0147 | 0.120 | 0 | 1 |
| OCC9 | 4,360 | 0.117 | 0.321 | 0 | 1 |
| PER | 4,360 | 0.0167 | 0.128 | 0 | 1 |
| PRO | 4,360 | 0.0764 | 0.266 | 0 | 1 |
| PUB | 4,360 | 0.0401 | 0.196 | 0 | 1 |
| RUR | 4,360 | 0.204 | 0.403 | 0 | 1 |
| S | 4,360 | 0.351 | 0.477 | 0 | 1 |
| SCHOOL | 4,360 | 11.77 | 1.746 | 3 | 16 |
| TRA | 4,360 | 0.0656 | 0.248 | 0 | 1 |
| TRAD | 4,360 | 0.268 | 0.443 | 0 | 1 |
| UNION | 4,360 | 0.244 | 0.430 | 0 | 1 |
| WAGE | 4,360 | 1.649 | 0.533 | -3.579 | 4.052 |