

. log using "C:\Documents and Settings\ladkins\Desktop\probit.smcl", replace

name: <unnamed>
 log: C:\Documents and Settings\ladkins\Desktop\probit.smcl
 log type: smcl
 opened on: 31 Mar 2010, 11:56:24

. reg foreign price mpg weight

| Source | SS | df | MS | | | |
|----------|------------|----|------------|-----------------|--------|--|
| Model | 8.58623428 | 3 | 2.86207809 | Number of obs = | 74 | |
| Residual | 6.87322518 | 70 | .098188931 | F(3, 70) = | 29.15 | |
| Total | 15.4594595 | 73 | .211773417 | Prob > F = | 0.0000 | |
| | | | | R-squared = | 0.5554 | |
| | | | | Adj R-squared = | 0.5363 | |
| | | | | Root MSE = | .31335 | |

| foreign | Coef. | Std. Err. | t | P> t | [95% Conf. Interval] | |
|---------|-----------|-----------|-------|-------|----------------------|----------|
| price | .0000794 | .0000148 | 5.37 | 0.000 | .0000499 | .0001089 |
| mpg | -.0154965 | .0107635 | -1.44 | 0.154 | -.0369636 | .0059707 |
| weight | -.0006065 | .000084 | -7.22 | 0.000 | -.0007741 | -.000439 |
| _cons | 1.968918 | .4492632 | 4.38 | 0.000 | 1.07289 | 2.864945 |

. probit foreign price mpg weight

Iteration 0: log likelihood = -45.03321
 Iteration 1: log likelihood = -20.083125
 Iteration 2: log likelihood = -17.363271
 Iteration 3: log likelihood = -17.152935
 Iteration 4: log likelihood = -17.151715
 Iteration 5: log likelihood = -17.151715

Probit regression

Number of obs = 74
 LR chi2(3) = 55.76
 Prob > chi2 = 0.0000
 Pseudo R2 = 0.6191

Log likelihood = -17.151715

| foreign | Coef. | Std. Err. | z | P> z | [95% Conf. Interval] | |
|---------|-----------|-----------|-------|-------|----------------------|-----------|
| price | .0005185 | .0001651 | 3.14 | 0.002 | .000195 | .0008421 |
| mpg | -.0723615 | .0556501 | -1.30 | 0.193 | -.1814337 | .0367106 |
| weight | -.0038232 | .0010392 | -3.68 | 0.000 | -.00586 | -.0017864 |
| _cons | 8.150001 | 2.962982 | 2.75 | 0.006 | 2.342664 | 13.95734 |

. margins, dydx(price mpg weight)

Average marginal effects
 Model VCE : OIM

Number of obs = 74

Expression : Pr(foreign), predict()
 dy/dx w.r.t. : price mpg weight

| | dy/dx | Delta-method Std. Err. | z | P> z | [95% Conf. Interval] | |
|--------|-----------|---------------------------|-------|-------|----------------------|-----------|
| price | .0000675 | .0000131 | 5.13 | 0.000 | .0000417 | .0000932 |
| mpg | -.0094152 | .0067443 | -1.40 | 0.163 | -.0226337 | .0038033 |
| weight | -.0004974 | .000051 | -9.75 | 0.000 | -.0005975 | -.0003974 |

. estat classification

Probit model for foreign

| Classified | True | | Total |
|------------|------|----|-------|
| | D | ~D | |
| + | 19 | 4 | 23 |
| - | 3 | 48 | 51 |
| Total | 22 | 52 | 74 |

Classified + if predicted Pr(D) >= .5
True D defined as foreign != 0

| | | |
|-------------------------------|----------|--------|
| Sensitivity | Pr(+ D) | 86.36% |
| Specificity | Pr(- ~D) | 92.31% |
| Positive predictive value | Pr(D +) | 82.61% |
| Negative predictive value | Pr(~D -) | 94.12% |
| False + rate for true ~D | Pr(+ ~D) | 7.69% |
| False - rate for true D | Pr(- D) | 13.64% |
| False + rate for classified + | Pr(~D +) | 17.39% |
| False - rate for classified - | Pr(D -) | 5.88% |
| Correctly classified | | 90.54% |

. logit foreign price mpg weight

Iteration 0: log likelihood = -45.03321
Iteration 1: log likelihood = -22.244792
Iteration 2: log likelihood = -18.069284
Iteration 3: log likelihood = -17.184699
Iteration 4: log likelihood = -17.161975
Iteration 5: log likelihood = -17.161893
Iteration 6: log likelihood = -17.161893

| | | | |
|-----------------------------|---------------|---|--------|
| Logistic regression | Number of obs | = | 74 |
| | LR chi2(3) | = | 55.74 |
| | Prob > chi2 | = | 0.0000 |
| Log likelihood = -17.161893 | Pseudo R2 | = | 0.6189 |

| foreign | Coef. | Std. Err. | z | P> z | [95% Conf. Interval] |
|---------|-----------|-----------|-------|-------|----------------------|
| price | .0009264 | .0003074 | 3.01 | 0.003 | .000324 .0015288 |
| mpg | -.1210918 | .0956855 | -1.27 | 0.206 | -.308632 .0664483 |
| weight | -.0068497 | .0019996 | -3.43 | 0.001 | -.0107688 -.0029306 |
| _cons | 14.42237 | 5.414367 | 2.66 | 0.008 | 3.81041 25.03434 |

. margins, dydx(price mpg weight)

| | | | |
|--------------------------|---------------|---|----|
| Average marginal effects | Number of obs | = | 74 |
| Model VCE : OIM | | | |

Expression : Pr(foreign), predict()
dy/dx w.r.t. : price mpg weight

| | dy/dx | Delta-method Std. Err. | z | P> z | [95% Conf. Interval] | |
|--------|-----------|---------------------------|-------|-------|----------------------|----------|
| price | .0000686 | .0000136 | 5.04 | 0.000 | .0000419 | .0000952 |
| mpg | -.0089607 | .006596 | -1.36 | 0.174 | -.0218886 | .0039672 |
| weight | -.0005069 | .000055 | -9.21 | 0.000 | -.0006148 | -.000399 |

. estat classification

Logistic model for foreign

| Classified | True | | Total |
|------------|------|----|-------|
| | D | ~D | |
| + | 19 | 5 | 24 |
| - | 3 | 47 | 50 |
| Total | 22 | 52 | 74 |

Classified + if predicted Pr(D) >= .5
True D defined as foreign != 0

| | | |
|-------------------------------|-------------|--------|
| Sensitivity | Pr(+ D) | 86.36% |
| Specificity | Pr(- ~D) | 90.38% |
| Positive predictive value | Pr(D +) | 79.17% |
| Negative predictive value | Pr(~D -) | 94.00% |
| False + rate for true ~D | Pr(+ ~D) | 9.62% |
| False - rate for true D | Pr(- D) | 13.64% |
| False + rate for classified + | Pr(~D +) | 20.83% |
| False - rate for classified - | Pr(D -) | 6.00% |
| Correctly classified | | 89.19% |

. log close

name: <unnamed>
log: C:\Documents and Settings\ladkins\Desktop\probit.smcl
log type: smcl
closed on: 31 Mar 2010, 11:57:11