


Lecture 5d: Practice Problems: John McGready



Lecture 5d: Practice Problems

John McGready
Johns Hopkins University

CE Charges

1. The following MLR relates total charges from the carotid endarterectomy procedures to the subject's race. To start, the race is coded as 0 for Caucasians, 1 for African Americans, and 2 for others in neither of the first two race categories. Here is the distribution of race in the sample of persons from 1995 in Maryland who had such a procedure.

```

. tab race
-----
      race | Freq.  Percent  Cum.
-----+-----
      0 |   2,488   92.87   92.87
      1 |     167    6.23   99.10
      2 |      24    0.90  100.00
-----+-----
      Total |   2,679  100.00

```

```

. tab race, nolab
-----
      race | Freq.  Percent  Cum.
-----+-----
          0 |   2,488   92.87   92.87
          1 |     167    6.23   99.10
          2 |      24    0.90  100.00
-----+-----
      Total |   2,679  100.00

```

2

CE Charges

1. Now, here is the MLR using the "xi" option in Stata. Caucasians are the reference group.

```

. xi: regress totchg i.race
      i.race          (naturally coded; _Irace_0 omitted)
-----+-----
Source |           SS          df           MS       Number of obs = 2679
-----+-----
Model | 1.3918e+09            2      695906243       F( 2, 2676) = 25.91
Residual | 7.1861e+10          2676      26853776.6       Prob > F      = 0.0000
-----+-----
Total | 7.3253e+10          2678      27353442.4       R-squared     = 0.0190
                                          Adj R-squared = 0.0183
                                          Root MSE    = 5182.1
-----+-----
totchg |           Coef.      Std. Err.      t    P>|t|     [95% Conf. Interval]
-----+-----
_Irace_1 | 2934.388          414.2395       7.08  0.000    2122.127    3746.65
_Irace_2 | 1549.089          1062.874       1.46  0.145   -535.0484   3633.226
      _cons | 6889.995          103.8909      66.51  0.000    6685.29    7092.709
-----+-----

```

3

CE Charges

- What does the overall F-test conclude about a population-level association between total CE charges and race (assume a significance level of 0.05)?
- What is the estimated mean difference in CE charges for African-Americans compared to Caucasians?
- What is the estimated mean CE charges for African-Americans?
- What is the estimated mean difference in CE charges for African-Americans compared to non-Caucasians/non-African Americans?

4