

Applied Econometrics II
Dept of Economics, Carnegie Mellon University
73-360, Fall 2000

Final

Instructions You may use any books, notes, calculators, and other aids you like. You may not converse, nor may you cooperate.

Please complete all questions.

Each question is worth 10 points.

Please show all relevant work.

Wherever possible use statistical tests and procedures we discussed in this course!

Please interpret your results in plain English.

Please refer to the relevant page in the output to tell us where you are getting your numbers and other results. (use the “SAS” page numbers — the small ones — so that the first regression appears on page 2).

For this test, we will use an extract from the 1990 US Census. The extract contains observations on children, paired with characteristics of their families. We are interested in the effects of family structure on the income of families in which children are raised.

| Variable | Type | Description |
|----------|------------|--|
| hhincome | continuous | 1990 pre-tax income in \$ |
| East | dummy | =1 for eastern US |
| West | dummy | =1 for western US |
| South | dummy | =1 for Southern US |
| Midwest | dummy | =1 for Midwestern US |
| momonly | dummy | =1 for families with single mom |
| poponly | dummy | =1 for families with single dad |
| both | dummy | =1 for families with both parents |
| emppar | dummy | =1 for families with a parent employed |
| colpar | dummy | =1 for families with a college-educated parent |

1. What is your best estimate and a 90% confidence interval for the difference in income between a family with both parents present and one with only the mother present?

2. How much, on average, does a family with both parents present make (estimate and 90% confidence interval)?

3. Holding constant region, test the theory that the difference between the incomes of a family with both parents present and one with the mother only present is \$35,000 in favor of the two-parent family.

4. Is the likelihood of a family being mother-only different in different regions of the country?

5. What are your best estimates of the probabilities of a mother-only family in the four regions (East, West, South, Midwest)?

6. Is a family more likely to have a college educated parent if the father is present (holding region constant)?

7. Based on the results so far, what effect do you think leaving out colpar from the model you used to answer question 1 had?

8. Please tell me how much you expect a family in the East with an employed, college-educated parent single mom to make.

9. Does region affect income?

10. Describe the characteristics of a family most likely to be mother-only.