

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).

Notice that in many of the analyses, I use the where statement to omit single-father families — ask if you are unclear on this.

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. Would it be a good idea to include the dummy variable East in the regressions in which I already have West, South, and Midwest? What would happen, good or bad — what would be the advantages and disadvantages?

9. Does region affect income?

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