CALIFORNIA STATE UNIVERSITY – SACRAMENTO
ECON 145 Economic Research Methods
Prof. Van Gaasbeck

Applied economics: Micro example
Poverty rates

California Poverty Rates

The data for this project are in the file poverty.xls ("California poverty rates" on the class web page)

The data are from the 1980 Census of California for 58 counties:

POVRATE   Percentage of Families with Income Below Poverty Line
URB   Percentage of Urban Population
FAMSIZE   Average Number of Members per Family
EDUC1   Percentage of the Population (25 Years and Older) that completed no more than 8 years of education
EDUC2   Percentage of the Population (25 Years and Older) that graduated from high school
EDUC3   Percentage of the Population (25 Years and Older) that completed four years of college
UNEMP   Percentage of the Population (16 Years and Older) unemployed
MEDINC   Median Family Earned Income

Import this data into EViews. Note – the first data cell is A2.

1. *Preliminaries and Modeling*
   - Explain how you expect urbanization, family size, unemployment, education, and median income will affect the percentage of families below the poverty line. Explain why for each variable.

2. *Data transformation*
   - Divide the MEDINC variable by 1000 (call it a new variable "MED"). Why might this transformation make sense in the context of regression analysis?

3. *Simple Regression and Prediction*
   - Run a regression with POVRATE as the dependent variable and MED as an explanatory variable (plus the constant term). Paste your results into a Word document.
   - Using your results from the regression above, how does a one-thousand dollar increase in median family income affect the county poverty rate?
   - Using your results from the regression above, what would the poverty rate be for a California county with a family median income of 20,000 (20 thousand – remember you scaled this variable).

4. *Other Factors and Multivariate Regression* (regression with more than one explanatory variable)
   - Are there other variables on the list above that might help explain the result you found in question 3? For instance, do you expect there is a relationship between education and median family income? Or unemployment and median family income?
   - Run a regression with POVRATE as the dependent variable and the explanatory variables on the list above (excluding the EDUC variables), including a constant term. Paste your table into a Word document. Which variables are statistically significant? How do you know?
   - Based on your regression output, compare the signs of the coefficients on URB, FAMSIZE, UNEMP, and MEDINC to your answers in question 1. Are the signs as expected? Explain why or why not.
   - Now, incorporate education into your analysis. Think about how to link your model of how education affects poverty to the actual data you have.
   - Based on your regression output, how much does a one-thousand dollar increase in median family income affect a county's poverty rate. Explain how and why this result differs from the prediction you had in question 3.