# First Analysis

The following model is a simplified version of the multiple regression model used by Biddle and

Hamermesh (1990) to study the tradeoff between time spent sleeping and working and to look at

other factors affecting sleep:

*sleep=* β0 + β1totwrk + β2 educ + β3 age + u

β1totwrk = β + β2educ + β3age + u - sleep

As adults decrease the amount of sleep will cause a negative relation with total work and cause total work to increase, as shown in the equation above.

β2 variable is a positively related variable to total work, as more educated people are expected to get more return form it, thus saying less sleep. β3 is negatively related to total work, as age increases the total work variable decreases and leading to increase in sleep.

Since sleep variable is calculated in minutes we need to convert hours to minutes, 5\*60=300. Now we can plug this into 0.148(totwrk) and find how many minuites of sleep is lost. 0.148(300) = 44.4 can be rounded to 45 minutes.

From the equation formed in part i we can see that as educ increases it will positively relate to totwrk and as we seen before this lead to decrease in sleep. But from the information found in part iv we can see that with 5 hours of increased work will lead to 45 minutes of sleep lost, which is not much.

There are many other factors that affect the amount of sleep a worker gets, for example some major factors are how the health of the adult is, if the adult has any children (also how many children) and if there are any other variable like criminal background, which may lead to pay to be less.

# Second Analysis

Use CRIME1

In 1986 we can see that there were higher percentage of people employed in quarters than there were people in prison. Since all variables have p value of 0.00 there are not any significant statistics.

(regress narr86 pcnv ptime86 qemp86)

The coefficient for qemp86 is not different for from 0.1 at 5% due its p value being 0.

The coefficient for black is 0.3422634, the coefficient for hispan is 0.2034439 and coefficient born60 is -0.0383927. The variable born60 is significant since its p value is higher than 0.1 but less than 0.5

# Second Analysis

Use discrim

The base model is ln(psoda) = β + β1prpblck + β2ln(income) + β3prppov + u and form running a regression we can determine the actual model to be;

ln(psoda) = -1.463333 + 0.0728072popblck + 0.1369553ln(income) + 0.38036poppov where number of observations is 401 and the r squared is 0.0870.

(gen x = ln(psoda), gen y = ln(income), regress x prpblck y prppov)

The correlation between ln(income) and prppov is -0.8385 and β1 is a variable that is statistically different from others has its p value is 0.018, which is less than 5% (0.05) and greater than 1% (0.01).

The coefficient produced for ln(hesval) is 0.1213056 and the p value produced is 0.00. From the coefficient we can tell that any change in ln(hesval) will lead to 0.12 times change in ln(psoda), for example if there was a 1% increase in ln(hesval) then there will be 0.12 times change in ln(psoda). From the p value we can reject the null hypothesis at 1% significance level.

From the new regression we can see the significance level for ln(income) and prppov have increased. The new p value for ln(income) is 0.159, before was 0) and the p value for prppov is 0.699, before it was 0.004. From this we can see that ln(income) is greater than 1 % significance but less than 5% significance and prppov is greater than both 1% and 5% significance. These two variables together significant since the combine p value for them is greater than 5% significance.

From the previous regression I can say that prppov, the proportion of poverty, the dependent variable in the function as it largely influences the function changes and level of significance.