**GROUP \_\_\_\_**

**FIXED EFFECTS WORKSHEET**

Suppose you have data containing the number of crimes committed in the previous year and current marital status for 500 individuals. Additionally, suppose you have two observations per individual spaced four years apart.

1. Consider the following model:

Suggest at least two omitted variables that could induce bias in your estimate of *β1*.

1. Suppose all of the omitted variable bias comes from variables whose values do not change across time. Let *ui* in the following model represent the contribution of these variables. We will call this the “fixed effect.”

We cannot estimate this model directly with OLS because we do not observe , and the unobserved part of the equation () may be correlated with marital status. That said, this equation must hold in both time period 1 and 2:

How might you combine these equations to get an equation that **can** be estimated with OLS? Verify that each of the assumptions required by OLS holds and interpret in the context of your new model equation.

1. Now suppose you had three time periods of data. Propose another method that uses all of your data to estimate .