

## Interpreting Regression Results

Some of the readings we will discuss in the class make use of multivariate linear regression or related techniques. The results of statistical tables will always be summarized in the readings, but here I provide some suggestions if you would like to interpret the tables yourselves.

First, determine what the *dependent variable* is. This should be listed in the table. The dependent variable is the variable being predicted. Next, select an *independent variable*. This is a variable that is used to predict the dependent variable. Find the coefficient. If the coefficient is positive, this means that if the independent variable is increased, the dependent variable is predicted to increase. If the coefficient is negative, this means that if the independent variable is decreased, the dependent variable is predicted to decrease. Finally, find the standard error, which is a number in parentheses, under the coefficient. If the coefficient is more than twice as large as the standard error, then we can statistically distinguish the coefficient from zero (we say the effect is statistically significant). Otherwise, we determine that there is no effect on the dependent variable.

As an example, consider the table below, which summarize a regression predicting the Democratic Vote Share in U.S. Senate races. Three independent variable are used to predict the dependent variable.

Dependent Variable: Democratic Vote Share	
Democratic Quality Advantage	0.23 (0.02)
Democratic Spending Advantage	0.65 (0.47)
Southern State	-0.34 (0.12)

From this table, we can determine that,

- (i) As the Democratic Quality Advantage increases, the Democratic Vote Share increases (0.23 is positive, and  $0.23 / 0.02 = 11.5 > 2$ ).
- (ii) The effect of Democratic Spending Advantage on Democratic Vote Share is not statistically distinguishable from zero ( $0.65 / 0.47 < 2$ )
- (iii) The Democratic Vote Share is predicted to be lower in Southern states (-0.34 is negative and  $0.34 / 0.12 > 2$ ).