The Simple Regression Model

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Section 2.1: The Definition of the Simple Regression Model

The Simple Regression Model

- Most of econometrics deals with relating two random variables Y and X that represent some population model
- Usually, we are interested in ***"explaining Y in terms of X."***
- We confront (at least) 3 issues in "explaining Y in terms of X":
  1. Since there is never an exact relationship between two variables, how do we allow for other factors to affect Y?
  2. What is the functional relationship between Y and X? ($y = f(x)$?)
  3. How can we be sure we are capturing a ceteris paribus relationship between Y and X?

- We start by writing down an equation relating Y to X as follows:

$$Y = \beta_0 + \beta_1 X + u$$

- This equation is assumed to hold for the population of interest. It is called the **Simple Regression Model**

- In this model:
  - Y = explained variable (the variable we are interested in explaining)
  - X = explanatory variable (the variable we believe affects Y)
  - U = error or disturbance term (represents other factors affecting Y)