Mincer earnings function

$$\log(w_i) = \beta_0 + \beta_1 s_i + \beta_2 x_i + \beta_3 x_i^2 + \varepsilon_i \tag{1}$$

Now that we are modeling people's choices, we need to quantify preferences

$$
\begin{aligned}
u_1(z, c, \eta_1) &= f(z, c, \eta_1) \\
u_2(w(s, x), k, \eta_2) &= g(w(s, x), k, \eta_2)
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- z is family background
- c is schooling costs
- k is number of kids in adult household
- η_t are unobservable preferences [similar to ε in equation (1)]

And since we are working with a dynamic model, we need to write down the lifetime utility function—with discount factor $\delta \in [0, 1)$:

$$V = u_1 (z, c, \eta_1) + \delta u_2 (w (s, x), k, \eta_2) \tag{3}$$

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- Equations (1)–(3) define our model
- This model is still **laughably unrealistic**, but at least we have something
- A number of questions remain, but we'll ignore these for now

Once we've written down the model, it's helpful to classify the different model objects:

Once we've written down the model, it's helpful to classify the different model objects:

Exogenous variables

- family background (z)
- schooling costs (c)
- children in household (k)

Endogenous variables

- schooling (s)
- period-2 work decision

Outcome variable

- hourly wages (w)

Unobservables

- log wages (ε)
- preferences (η_t)

Model parameters

- returns to human capital (β)
- discount factor (δ)
- other parameters implied by $f(\cdot)$ and $g(\cdot)$