

Discussion of slides posted on Blackboard

Cobb-Douglas production for a firm  $\max_{K,H} z_t K_t^\alpha H_t^{1-\alpha} - (r_t + \delta_t)K_t - w_t H_t$  has FOC  $z_t K_t^\alpha H_t^{-\alpha}(1 - \alpha) = w_t$

and so  $z_t K_t^\alpha H_t^{1-\alpha}(1 - \alpha) = w_t H_t$  so  $1 - \alpha = \frac{w_t H_t}{y_t}$  which is the labor share - so labor share is constant across time (and roughly constant, about 0.35, across empirical data such as: countries across GDP per capita in 2000). That's one of the reasons Cobb-Douglas is a strong aggregate production function: it corresponds to real-world observations such as this one.

This is further discussed in Williamson.