

# An RBC model with endogenous labor supply (Frisch elasticity-based) and GHH utility

## Recursive formulation

The representative household solves the following problem:

$$\begin{aligned} V(a; S) = \max_{c, a'} & \frac{1}{1-\sigma} \left( c - \frac{\eta}{1 + \frac{1}{\chi}} L^{1+\frac{1}{\chi}} \right)^{1-\sigma} + \beta \mathbb{E} V(a'; S') \\ \text{s.t.} \quad & c + a' = (1 + r(S))a + w(S)L \end{aligned}$$

where the aggregate state  $S$  is as follows

$$S = [K, A].$$

$K$  is the aggregate capital stock.  $A$  is TFP that follows the log AR(1) process:

$$\log(A') = \rho \log(A) + \sigma \epsilon, \quad \sigma \sim N(0, 1).$$

$c$  is consumption,  $L$  is labor supply, and  $a$  is the wealth in the beginning of a period.