2-period RBC Model: Setup

- **Timing:** 2-period model, $t = 1, 2$.
- **Agents:** single generation of N households + firms (as in OLG setup).
- **Households:** enter with initial endowment a_1, supply labour (at wage rate w_t) + supply capital (at rental rate R_t) + get dividends π_t from firms each period.
- **Budget Constraints:** Thus, their budget constraints in period 1 is:

$$c_1 + a_2 = w_1 + R_1 a_1 + \pi_1$$

and in period 2:

$$c_2 = w_2 + R_2 a_2 + \pi_2$$

- **Lifetime Budget Constraint:** substituting for a_2, we can write:

$$c_1 + \frac{c_2}{R_2} = w_1 + \frac{w_2}{R_2} + R_1 a_1 + \pi_1 + \frac{\pi_2}{R_2}$$

2-period RBC Model: Setup

- **Firms:** perfect competition in both input and output markets.
- **Production Function:** $Y_t = F(z_t, K_t, L_t)$, where z_t can vary across periods.
- **Profit Maximisation:**

$$\max_{K_t, L_t} \Pi_t \equiv F(z_t, K_t, L_t) - R_t K_t - w_t L_t$$

- **Market Clearing:** labour, asset/capital, and goods markets clear each period.
- **In Equilibrium:**
  1. households choose c_1, c_2 optimally to maximise lifetime utility,
  2. firms choose K_t, L_t optimally to maximise profits each period,
  3. labour, asset, and goods markets clear each period.