TIME

Intertemporal preference

$$U(c_1, \ldots, c_T) = \sum_{t=1}^{T} u_t(c_t).$$

Intertemporal preference

$$U(c_1, \ldots, c_T) = \sum_{t=1}^{T} \alpha^t u(c_t).$$

Intertemporal optimization with two periods

$$\tilde{w}_2 = \tilde{c}_2 = (w_1 - c_1)[R_1 x + R_0(1 - x)] = (w_1 - c_1)R.$$

Intertemporal optimization with two periods

$$U(c_1, \tilde{c}_2) = u(c_1) + \alpha E u(\tilde{c}_2),$$

Intertemporal optimization with several periods

$$U(\tilde{c}_1, \ldots, \tilde{c}_T) = \sum_{t=0}^{T} \alpha^t E u(\tilde{c}_t).$$

$$\tilde{w}_{t+1} = [w_t - c_t]R,$$

Intertemporal optimization with several periods

$$V_{T-1}(w_{T-1}) = \max_{c_{T-1}, x_{T-1}} u(c_{T-1}) + \alpha E u[(w_{T-1} - c_{T-1})R].$$

Intertemporal optimization with several periods

$$u'(c_{T-1}) = \alpha E u'(\tilde{c}_T)\tilde{R}$$

$$E u'(\tilde{c}_T)(\tilde{R}_1 - R_0) = 0.$$

General equilibrium overtime

$$1 + r_t = \frac{1}{p_t}$$

General equilibrium overtime

$$\sum_{t=1}^{T} p_t c_t = \sum_{t=1}^{T} p_t \bar{c}_t \qquad \sum_{t=1}^{T} \frac{c_t}{1+r_t} = \sum_{t=1}^{T} \frac{\bar{c}_t}{1+r_t}.$$