Lecture notes, Dec 1st, 2020

Within period tradeoff

$$\ln c - \frac{\theta}{2} n^2$$

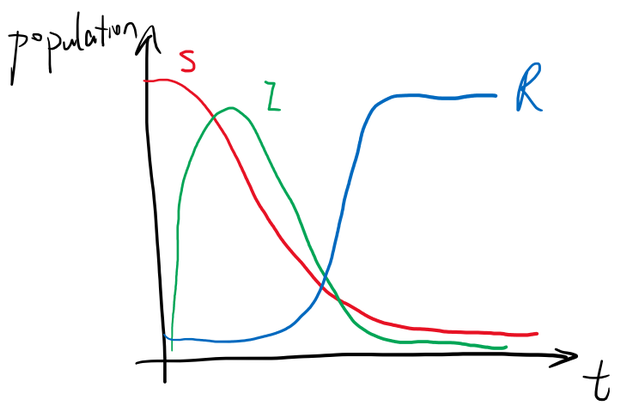
s.t. $(1+\mu) \cdot c \leq w \cdot n + \Gamma \quad \cdots \quad (*)$

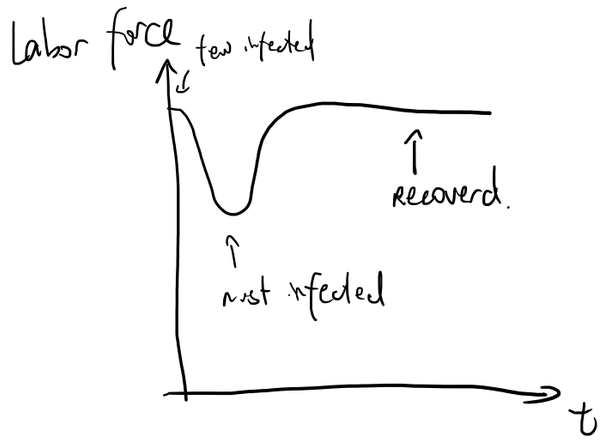
$$\frac{\partial \mathcal{L}}{\partial c} = \frac{1}{c} - (1+\mu)\cdot\lambda \Rightarrow \lambda = \frac{1}{c\cdot(1+\mu)}$$

$$\frac{\partial \mathcal{L}}{\partial n} = -\theta \cdot n + w \cdot \lambda \Rightarrow \lambda = \frac{\theta \cdot n}{w}$$

$$\Rightarrow \frac{1}{c\cdot(1+\mu)} = \frac{\theta \cdot n}{w}$$

SIR model





Lifetime utility

$$U = \max \sum_t \beta^t \left(\ln c_t - \frac{\theta}{2} n_t^2 \right)$$