Law of Motion of Unemployment

Pascal Michaillat
https://www.pascalmichaillat.org/t5.html

Law of motion for employment.

change in employment per unit time

$$\dot{\ell}(t) = f(\theta(t))\left[\bar{h} - \ell(t)\right] - \lambda\,\ell(t)$$

workers who lose job per unit time

$\left(\dot{x}(t) \equiv \frac{dx}{dt}\right)$

job-finding rate

unemployed workers

workers who find job per unit time

Law of motion of unemployment rate.

Unemployment rate

$$u(t) = 1 - \frac{\ell(t)}{\bar{h}}$$

$$\dot{u}(t) = -\frac{\dot{\ell}(t)}{\bar{h}} = \lambda\frac{\ell(t)}{\bar{h}} - f(\theta(t))\left[1 - \frac{\ell(t)}{\bar{h}}\right]$$

$1 - u(t)$ $\qquad$ $u(t)$

$$\dot{u}(t) = \lambda\left[1 - u(t)\right] - f(\theta(t))\cdot u(t)$$

job separations $\qquad$ job findings