

# Law of Motion of Unemployment

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Pascal Michailat  
<https://pascalmichailat.org/c2/>

## Law of motion for employment.

$$\dot{l}(t) = f(\theta(t)) [h - l(t)] - \lambda l(t)$$

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

change in employment per unit time

# workers who lose job per unit time

job finding rate

# unemployed workers

# workers who find job per unit time

## Law of motion of unemployment rate.

Unemployment rate

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

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

$1 - u(t)$

$u(t)$

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

job separations

job findings