

Stabilization Term

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<https://www.pascalmichailat.org/t5.html>



Stabilization term: $m \times \left[\underline{1 - (-v'(u))} \right]$

unemployment multiplier, $-du/dg$

slope of Beveridge curve

First-order approximation of $-v'(u)$ around u^*

$$-v'(u) \approx \underbrace{-v'(u^*)}_{=1} - v''(u^*) \times [u - u^*]$$

u^* minimizes $u + \sigma(u) \rightarrow 1 + v'(u^*) = 0$
 $\rightarrow \underline{-v'(u^*) = 1}$

$v(u)$ is an hyperbola: $v(u) = A/u$

$$v'(u) = -A/u^2$$

$$v''(u) = 2A/u^3$$

$$\rightarrow v''(u) = -v'(u) \times 2/u$$

$$\rightarrow v''(u^*) = -v'(u^*) \times 2/u^*$$

$$\rightarrow \underline{v''(u^*) = 2/u^*}$$

Overall, we obtain the following first-order approximation around u^*

$$-v'(u) = 1 - \frac{2}{u^*} \times [u - u^*]$$

$$\boxed{1 - (-v'(u)) = 2 \times \frac{u - u^*}{u^*}}$$