Effects of Government Spending on Welfare

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Social planner's problem

influenced by g

$$\max \; U(c, g)$$

c: private sector; g: public sector

labor force; unproductive; public

$$c = 1 - (u + v) - g$$

(resource)

Planner's problem

$$\max_{g} \; U\left(1 - (u + v) - g, \; g\right)$$

u, v: public employment crowds out private employment (mechanical)

g: public goods (+)

Stabilization assumption

- unemployment rate depends on g: $u = u(g)$
- recruiting rate depends on g through Beveridge curve: $v = v(u(g))$

Planner's problem:

$$\max_{g} \; U\left(1 - \left(u(g) + v(u(g))\right) - g, \; g\right)$$

Take derivative of social welfare wrt g =

$$\frac{\partial \mathcal{W}}{\partial g} + \frac{\partial \mathcal{W}}{\partial c} \times \left[-u'(g) - v'(u) \times u'(g) - 1 \right]$$

$$= \frac{\partial \mathcal{W}}{\partial g} - \frac{\partial \mathcal{W}}{\partial c} - \frac{\partial \mathcal{W}}{\partial c} \times u'(g) \times \left(1 + v'(u) \right)$$

$$= \frac{\partial \mathcal{W}}{\partial g} - \frac{\partial \mathcal{W}}{\partial c} + \frac{\partial \mathcal{W}}{\partial c} \times \left[-u'(g) \right] \times \left[1 + v'(u) \right]$$

more private workers → more welfare

productive workers

more public goods ↳ more welfare

more public workers ↳ less private workers ↳ less welfare (crowding out)

more public workers → less unemployment

stabilization $g \to u$

public econ. (Samuelson 1954)

(Michaillat & Saez 2019)