Discussion of: **Unemployment Inertia and the Fiscal Multiplier**

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ESSIM 2012

May 23, 2012

Labour market frictions, wage rigidities, and the fiscal multiplier at the zero lower bound.

- Cash m is storable and is the numeraire.
- p_t is the price of output in terms of the numeraire.
- Households supply labour inelastically. Full employment is normalised 1.
- $n_t \leq 1$ operating firms employ workers and produce z_t

$$y_t = z_t n_t$$

- Unemployment $u_t = 1 - n_t$

Labour market frictions

Free entry of risk neutral entrepreneurs. Vacancies v satisfies:

$$k = \phi\left(\frac{v_t}{u_t}\right) J_t$$

Where $\phi\left(\frac{v_t}{u_t}\right)$ is the probability to fill the vacancy
J is the market value of a firm:

$$J_t = \beta E_t \left[\frac{u'(c_{t+1})}{u'(c_t)} \left(\frac{\overbrace{p_t z_t - \widetilde{w}}^{\text{dividends}}}{p_{t+1}} + (1-\lambda) J_{t+1} \right) \right]$$

Nominal wages are assumed to be rigid: $\widetilde{w}_t = \widetilde{w}$

Money demand

Cash in advance constraint (with associated multiplier μ):

$$x_{t+1} = M_t - p_t c_t \geq 0$$

If the equilibrium interest rate on bonds falls to zero, $\mu = 0$ and the household hoards "excess" cash, $x_{t+1} > 0$.
Aggregate equilibrium:

$$\overbrace{x_t + w_{t-1}}^{m} = p_t y_t + x_{t+1}$$

$$p_t = \frac{m - x_{t+1}}{y_t}$$

Experiment

z_t is constant and equal to 1 until $t = 0$.
At time $t = 0$ agents learn that $z_1 = 0.93$.
$z_t = 1$ for $t \geq 2$

Amplification effect

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$$p_0 = \frac{m - x_1}{y_0}$$

- In normal times $x_1 = 0$. News about z_1 reduces J_0, because $\widetilde{w}$ fixed$\Rightarrow$ v_0,n_0 and y_0 falls. This increases p_0 and reduces real wages (dampening).

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- An increase in government spending increases p_0 and breaks this vicious circle.

Comments

- Not the first paper to argue that the fiscal multiplier is large at the zero lower bound.
  - New mechanism.
  - Highlights and interesting amplification effect.
- Quantitative result, but very stylised model.
  - Dramatic news!!! (Large drop in productivity)
  - How much unemployment would wage rigidity alone create? (i.e. you do not allow for cash, only bonds, and the interest rate can be negative).
  - What about rigidity of real wages?

Comments

- If we interpret this shock as a recession, How realistic are dynamics? (Vacancies, Real wages,...).
- Story about saving, but there is no unemployment risk in the model, and no aggregate uncertainty except for the one time shock.
- Quantitative result in a more realistic setting? (Aggregate uncertainty and realistic wealth dynamics)

Comments

For example, suppose households are ex-ante identical but face unemployment risk$\longrightarrow$distribution of wealth.

- Some households have very low wealth because unemployed (binding borrowing constraint, consume unemployment benefit)
- Some households are rich because have been employed for long time and accumulated precautionary assets.

The shock hits, then:

- Poor households are already consuming the minimum.
- Rich households should be less sensitive to the aggregate shock.

Smaller effect?

Small technical points

- How do you solve for J after the shock? Solution is more complicated than in the paper because now J depends on the evolution of future $U(c_{t+s})$, $s \geq 0$
- Do you need the superscript for q?