Discussion of

Inflation and Unemployment in General Equilibrium

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New York/Philadelphia Workshop on Quantitative Macroeconomics
May 11, 2007

What the paper does

- Constructs an explicit DGE model in which money is essential and unemployment arises naturally
  - asks the obvious question
- Perfect foresight model; focus is on steady states
  - sticky prices/information and other short-run considerations play no role
- Shows:
  - higher inflation can either increase or decrease unemployment
  - relationship depends on preferences in an intuitive way

Basic intuition

- Textbook view is that the long-run Phillips curve is vertical
  - with flexible prices and no surprises, indexing works perfectly
- But ... when money is explicitly included in the model, someone must be holding the money
  - inflation is necessarily a tax on some activities
  - even steady, predictable inflation is distortionary
- In GE, one might expect inflation to affect all other variables (more on this later)

  $\Rightarrow$ a (long-run) Phillips curve emerges

Comments

1) Unemployment

2) Inflation

3) Quantitative work

4) Summary

1) Unemployment

- Why do we care about unemployment?

- There are a variety of potential answers
  - uninsurable risk, inequality, political economy concerns

- None of these are in the Rogerson IL model with lotteries
  - changes in unemployment are no different than changes in hours

Q: Is it useful to study unemployment in a model without *involuntary* unemployment?

- Another approach: have a search model of employment
  - LW meets Mortenson-Pissarides (Berentsen, Menzio, & Wright)
  - model very messy, authors resort to calibration and computation
  - highlights the tractability and elegance of the RRW approach

A: Yes, it is useful

- BUT ... need to keep the model in mind when interpreting results
  - ex: Friedman rule is optimal, even if it *maximizes* unemployment
  - but ... unemployment in this model is not very costly to agents

2) Inflation

- The Friedman rule (deflation) is optimal for the usual reasons

- In reality, policymakers seem to prefer positive inflation
  - "comfort" zone of 1% - 2%. Why?

- Possible answers
  - may be "slaves of some defunct economist" (Keynes)
  - may have a "dual mandate": maximum employment and stable prices

Q: Is it useful to study inflation in a model with no reason to inflate?

  - might be worth modifying the model to see what happens

- Why would a (rational, benevolent) government inflate?

- One possibility: seigniorage revenue
  - "easy" tax to implement/administer
  - some currency may be held abroad

- Modified model: Govt buys goods in CM with new money
  - govt consumption additively separable in agents' utility

- Use simple version: one CM good, no endowment, linear production

- Agent's CM budget constraint

$$\ell x_1 + (1-\ell)\, x_0 + \frac{\widetilde{m}}{p} \leq \ell + \frac{m}{p} + T$$

- Solve for

$$\bar{\ell} = \frac{x_0 + \frac{\widetilde{m}}{p} - \frac{E[m]}{p} - T}{1 + x_0 - x_1}$$

- In separable case, x does not depend on inflation rate
  - feature of IL model; assuming an interior solution

- In RRW: $T = \frac{\widetilde{m}}{p} - \frac{E[m]}{p}$

$\Rightarrow$ $\bar{\ell}$ does not depend on inflation (vertical Phillips curve)

- In modified model, $T = 0$. Then

$$\bar{\ell} = \frac{x_0 + \gamma \frac{M}{p}}{1 + x_0 - x_1}$$

  - inflation increases $\bar{\ell}$, even in the separable case!

- Intuition:

  - govt consumption does not crowd out private consumption

  $\Rightarrow$ production (and employment) must rise

- This is a "true" Keynesian Phillips curve

  - recall: small change to RRW model

A: Including why governments inflate seems important

- However ... do we believe the modified model?

- Result clearly depends on the setup of the model
  - inflation tax only affects DM (in the separable case)
  - employment only occurs in CM

- Perhaps this story takes the LW setup (separation of DM and CM) too seriously
  - does the same criticism apply to RRW?
  - seems worth thinking about

3) Quantitative work

- Modified model:

$$\bar{\ell} = \frac{x_0 + \gamma \frac{M}{p}}{1 + x_0 - x_1}$$

- A rough calibration: $x_0 = x_1 = 0.94$
  - unemployment at zero inflation is 6%

- How large is $\frac{M}{p}$ relative to x? 10% seems like an upper bound

- Moving to 10% inflation would increase employment by $\sim$1%
  - unemployment rate falls to 5.06% (a fall of 16%)
  - Would RRW be in this same range?

Summary

- An interesting paper
  - framework is general yet tractable

- Particular model of unemployment
  - a useful abstraction, but be careful with interpretations

(i) Fiscal aspects of inflation may be important

(ii) To what extent do results depend on the special features of LW?

(iii) Are effects quantitatively important?