Monetary policy implications of state-dependent prices and wages

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Research question and approach

Research question: Explore the monetary policy implications of price and wage stickiness in a framework with state-dependent pricing, specifically with **control costs**
Main exercises performed:

- Quantify the effects of varying the control cost parameter (degree of noise or mistake)
- Compare aggregate dynamics to Calvo model with same frequency of price changes

Similar to Costain and Nakov's JME paper.
The innovation is wage stickiness

Control costs

Aim to capture the fact that taking precise decisions is costly
"Control costs" generates both:

- Infrequent setting of prices and wages
- Imprecise setting even in periods when price (or wage) is re-set

Model ingredients

- Standard NK model except for control costs being the only nominal rigidity
  - Very symmetric for prices and wages - monopolistic suppliers of both goods and labor
    - Follows Erceg, Henderson and Levin (2000)
- No capital
- Entire price and wage distribution becomes state variable
  - Use Reiter (2009) algorithm to solve on discretized grid
    - Combines projection (steady state) and perturbation (dynamics)
- Two versions of labor disutility modeled:
  - Linear - simple to compute
  - Convex - standard, more realistic assumption

Main findings

1. Wage stickiness tend to induce more persistent effect of monetary policy compared to price stickiness
   - Results approximately unchanged if completely removing price stickiness
2. Linear disutility of labor: State-dependent pricing implies substantially less persistent real effects, compared to Calvo price and wage setting
   - Flip-side of this: State-dependence implies fast reaction of prices
3. With linear disutility of labor idiosyncratic productivity shocks have no effect on wages
4. (Slightly confusing/surprising results for model version with convex disutility of labor)

My comments

Overall view

- Work in progress - readability of draft can be improved
  - State main research questions more clearly
  - Discuss key assumptions and interpretation more

Main comments

1. Is there a need to adjust wages to idiosyncratic productivity shocks?
2. How to compare implications of state-dependent and time-dependent pricing

Is there a need to adjust wages to idiosyncratic productivity shocks?

- Individual workers get hit with idiosyncratic productivity shocks
- To avoid excessive volatility in hours worked they therefore need to change their wages accordingly
- **Which real world problem does this represent?**
- It clearly can not be interpreted literally - individual workers do not set wages and agree to work whatever number of hours are demanded at that price
- Does the shock hit at the level of a union or a sector?
  - Did the union/sector agree to inelastically supply labor at a given wage?
    - Answer: Yes, if new workers can be found (extensive margin)

Comparison to EHL, i.e. without worker-specific shocks

- Standard EHL labor market only has aggregate shocks
- Here shock/wage setting is easier to interpret:
  - Wages increase in a boom for a number of reasons: Upward sloping labor supply curve

How to compare state-dependent and time-dependent pricing

One aim of the paper is to compare implications of state-dependent and time-dependent pricing

1. What aspects of the model implications are most relevant to compare?
2. How can we keep comparison as quantitative and objective as possible?
3. Is there a need for an empirical horse race between models?

Summary of remarks

- Neat theoretical exercise - Extends authors' JME paper to sticky wages in Erceg, Henderson and Levin labor market
- More interpretation needed - unclear exactly what idiosyncratix shock/sticky wage interaction represents

Comments to authors

- Please facilitate comparison between Fig 4 and Fig 5 (control cost vs. Calvo). I think you should keep the scaled of the y-axes fixed for this reason
- Creative idea: How about two levels of control costs: intermediate producers and retailers (clearly complicates model structure somewhat)