Discussion of
"Uncertainty, Wages, and the Business Cycle"
by Matteo Cacciatore and Federico Ravenna

Mathieu Taschereau-Dumouchel

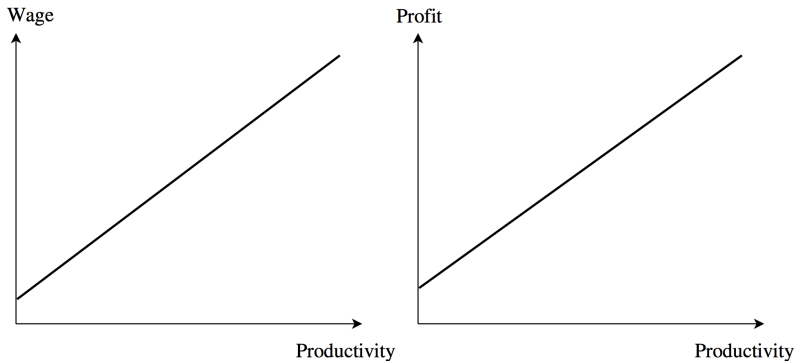The Wharton School of the University of Pennsylvania

CMSG November 7th 2015

Summary

- This paper
  - In a search model with downward wage rigidity:
    - What is the impact of uncertainty shocks?
    - What is the impact of first moment shocks on uncertainty?
- This discussion
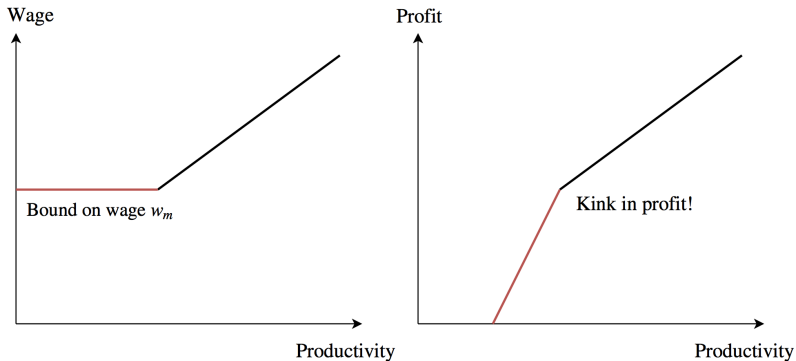 - Brief overview of the mechanism
  - Some comments

- Normal Nash Bargaining

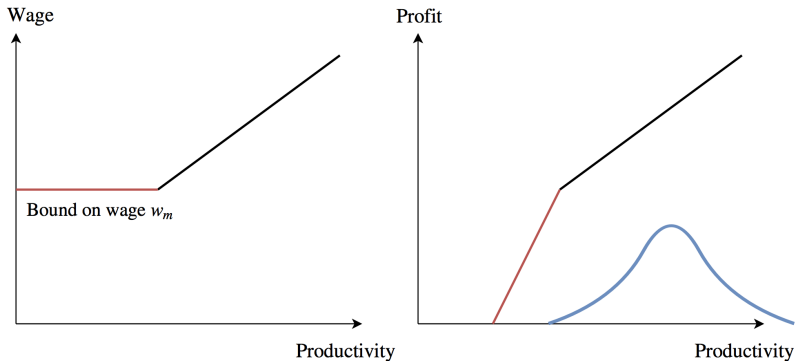- Profit and wage are close to linear in productivity

- Constrained Nash Bargaining

- The bound on wages w_m generates a kink in the profit function

- Constrained Nash Bargaining

Wage

Bound on wage w_m

Productivity

Profit

Productivity

- Expected future profits are what matters for vacancy posting

- **First moment shock**

Wage

Bound on wage w_m

Productivity

Profit

Productivity
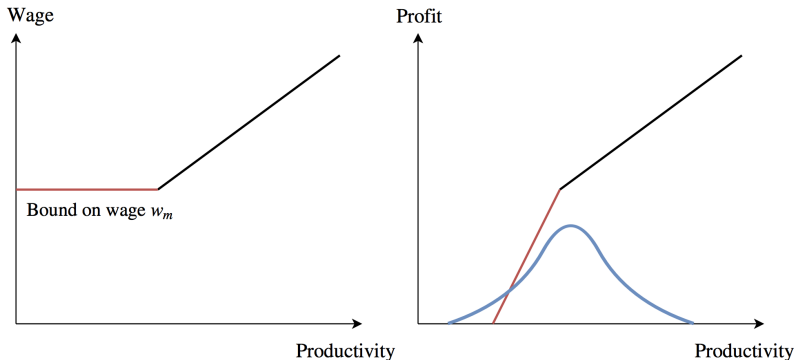
- First moment shocks have non-linear impact (skewness)
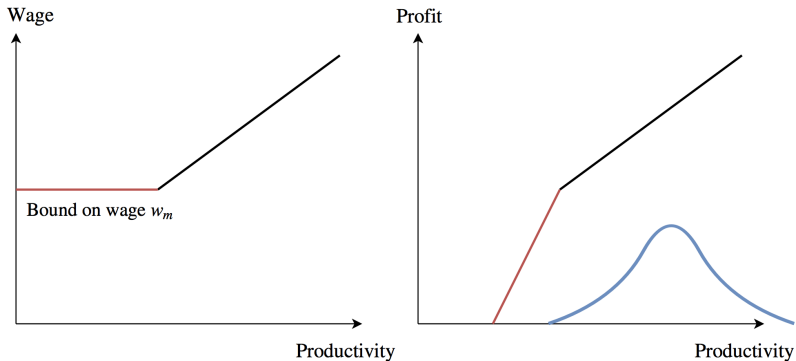
- Constrained Nash Bargaining

Wage

Bound on wage w_m

Productivity

Profit

Productivity

- Expected future profits are what matters for vacancy posting

- **Uncertainty shock**

Wage

Bound on wage w_m

Productivity

Profit

Productivity
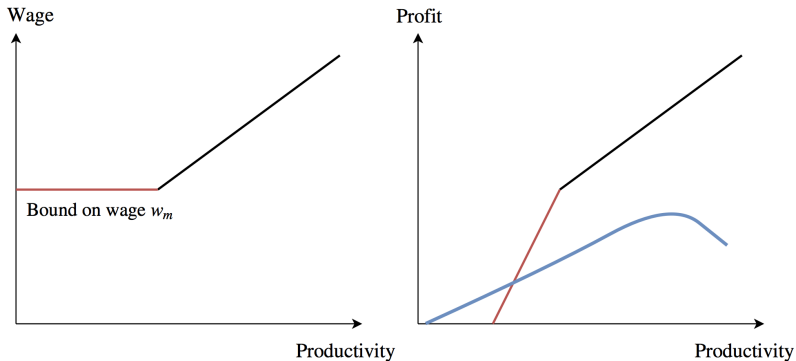
- Uncertainty shocks matter because of the kink

Impulse response

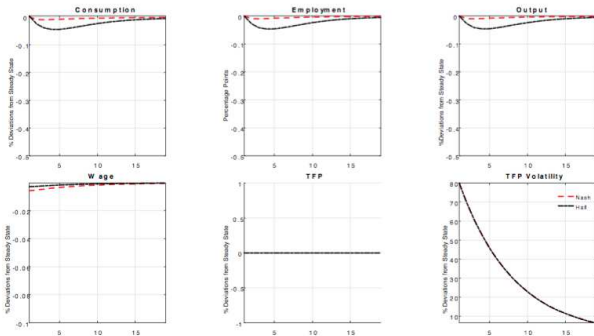- Standard search models:

Figure 5. Impulse responses, one standard deviation increase in uncertainty. *Solid line:* flexible Nash wage bargaining; *Dotted line:* Hall (2005) wage rigidity. The economy is at the stochastic steady prior to the realization of the productivity shock. Solution method: unpruned, third-order approximation of the policy functions.

- Uncertainty shocks do not matter
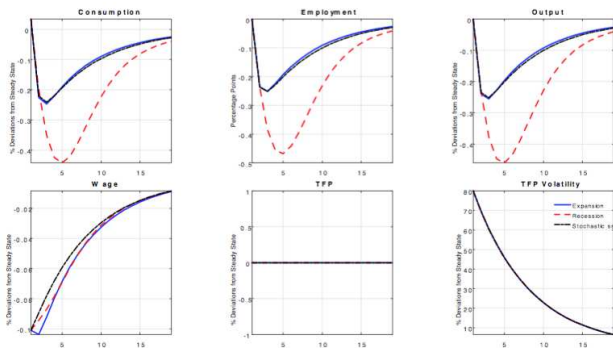
Impulse response

- Current model:

Figure 6. Net impact of uncertainty shocks over the business cycle. *Solid line:* expansion; *Dotted line:* recession. Expansion (recession): one standard deviation increase (reduction) in the level of productivity. We assume a one standard deviation increase in uncertainty in the quarter that follows the productivity shock. For any given variable y, we plot the difference between the percentage change in y (relative to the stochastic steady state) when both productivity and uncertainty shocks are realized and the percentage change in y absent the uncertainty shock. The economy is at the stochastic steady prior to the realization of the productivity shock. Solution method: unpruned, third-order policy functions.

- Uncertainty shocks matter because of the kink

- Additionally, the model generates endogenous uncertainty about future output:
  - ▶ Starts in the right portion of the black line
    - Small shocks have small impact on output
  - ▶ Move to the left towards the kink
    - Small positive shock still have small impact on output
    - Small negative shock have bigger impact on output
  - ▶ Simple model of endogenous uncertainty
    - Uncertainty is negatively correlated with output

Empirical evidence

- What matters in the model is the flexibility of wages for new workers
  - ▶ Debate in the literature about flexibility in the data
    - Pissarides (2009): Wage of new hire is flexible
    - Gertler, Huckfeldt, and Trigari (2014): Wage of new hire is quite rigid

- Endogenous uncertainty
  - ▶ Economic activity generates information: Van Nieuwerburgh & Veldkamp (2006); Fajgelbaum, Schaal & Taschereau-Dumouchel (2015)
  - ▶ Try new ideas in recessions: Bachman & Moscarini (2011); D'Erasmo & Moscoso-Boedo (2011)
  - ▶ Occasionally binding ZLB: Plante, Richter & Throckmorton (2015)

Comments

- Modeling downward wage rigidity
  - In the model, constant aggregate "minimum wage" w_m set to about 1% below the mode of wages
  - Quite strong. Alternatives:
    - Lower cost to increase wage than to decrease it
    - Distribution of heterogeneous workers with wages that can't decline
    - Asymmetric bargaining
    - Does specific approach matter?

- Parametrizing downward wage rigidity
  - OECD countries: 26% of real wage cuts that would have taken place are blocked (Dickens, et al 2007)
  - "We assume that everyone who had a nominal wage freeze would have had a nominal wage cut in the absence of downward nominal rigidity" + symmetry assumption for real rigidity
  - This number relies on a cross-section of worker and cross-section of countries
  - US number $\approx 7\%$

Comments

- Quantification
  - ▶ How does the model perform in terms of volatility?
    - w_m is close to p: Hagedorn Manovskii (2008)
  - ▶ How much of the negative skewness observed in the data can the model replicate?

	Output	Investment	Hours	Consumption
Data	-1.24	-0.92	-0.62	-1.31

Table: Skewness 1985-2015. Source: Schaal & Taschereau-Dumouchel (2015)

  - ▶ How much of the variation in uncertainty (say from the SPF) can the model's endogenous uncertainty account for?

Conclusion

- Interesting paper with clean mechanism
- Curious to see how far it can go in explaining the data