Conventional Monetary Policies for Unconventional Times: Tracking Monetary Policy Bounds Using Microheterogeneity

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Discussion by Bence Bardóczy[a]

ASSA, January 2024

[a] The views expressed are my own and do not necessarily reflect those of the Board of Governors of the Federal Reserve System.

A possibility result

- Tenet of monetary policy: fight inflation by raising interest rates
- **This paper**: tightening during a major supply disruption may be inflationary
- Interesting and very clean paper, similar in flavor to
  - Abadi, Brunnermeier, Koby (2023): reversal interest rate
  - Guerrieri, Lorenzoni, Straub, Werning (2022): Keynesian supply shocks
- My discussion complements comparative statics exercises in the paper
  - visualization
  - decomposing PE and GE effects

Environment

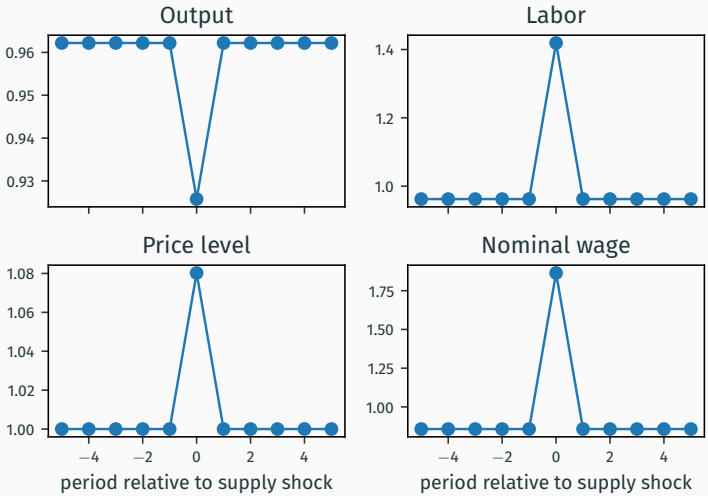
- Two-tiered production
  - unit mass of suppliers produce intermediate goods from labor
  - representative final good firm (client) sells to households

- In period 0, fraction $1 - \omega$ of suppliers become much less productive

- Pricing + information frictions
  - price and quantity of intermediate goods fixed by **contract**
  - client does not observe which suppliers were hit

- **Optimal contract** bails out suppliers claiming force majeure w **probability** a^*
  - client prefers to keep shocked suppliers from exiting
  - wants to deter non-shocked firms from lying

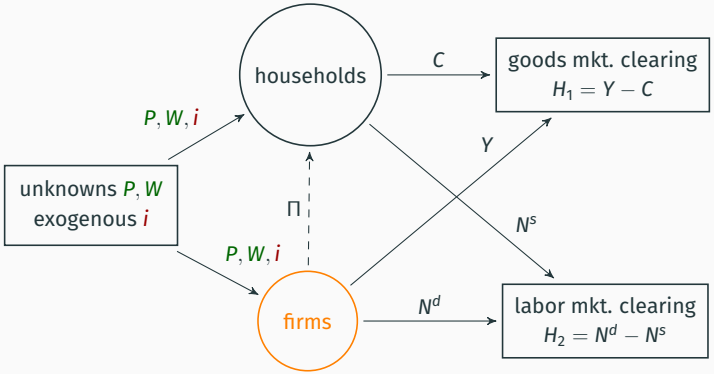
Baseline impact of supply disruption



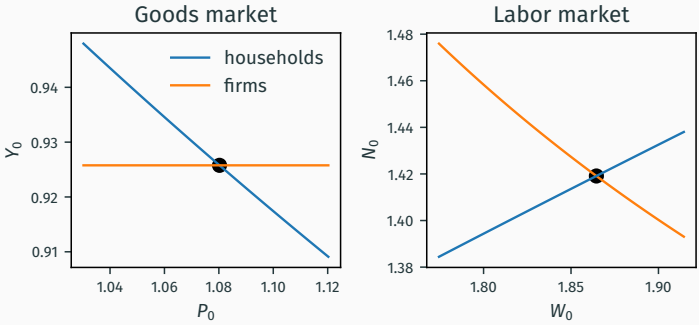
- Supply disruption causes output loss and inflation
- **Next:** central bank raises nominal rate i to fight inflation

Monetary policy transmission

- Given nominal rate i, equilibrium prices $\{P, W\}$ solve $\mathbf{H}(P, W, i) = 0$



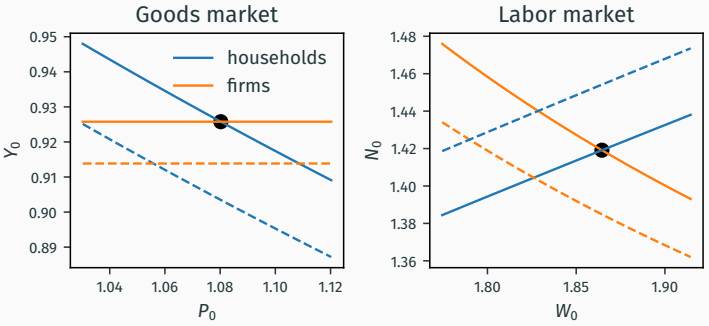
Supply and demand



- Consider special case of RA household
- Supply and demand with $i = i_{ss}$

- Price P_0 is irrelevant for firms because sales price and quantity are contracted
- Higher wage W_0 reduces firm profits and raises exit rate

Supply and demand



- Consider special case of RA household
- Supply and demand with $i = i_{ss}$ and $i > i_{ss}$

- Higher nominal rate i reduces PV of future profits and **increases exit** of shocked firms directly + indirectly by lowering probability of renegotiation

$\rightarrow$ **inflationary tightening** may be possible; **Next:** formalize curve shifting

Possibility of inflationary tightening

- Applying the implicit function theorem to

$$\mathbf{H}(P, W, i) = \begin{bmatrix} Y(P, W, i) - C(P, W, i) \\ N^d(P, W, i) - N^s(P, W, i) \end{bmatrix} = 0$$

yields

$$\begin{bmatrix} dP \\ dW \end{bmatrix} = - \begin{bmatrix} \frac{d(Y-C)}{dP} & \frac{d(Y-C)}{dW} \\ \frac{d(N^d-N^s)}{dP} & \frac{d(N^d-N^s)}{dW} \end{bmatrix}^{-1} \begin{bmatrix} \frac{d(Y-C)}{di} \\ \frac{d(N^d-N^s)}{di} \end{bmatrix} di$$

- Solve analytically using inverse formula for 2×2 matrices

Decomposition of inflation response

- Can show that

$$\frac{dP}{di} = \underbrace{\frac{1}{dC/dP}\frac{dY - dC}{di}}_{\substack{\text{goods mkt clearing} \\ \ominus \times (\ominus - \ominus)}} - \underbrace{\frac{1}{\frac{dC}{dP}\frac{dN^d - dN^s}{dW}}\frac{dY}{dW}\frac{dN^d - dN^s}{di}}_{\substack{\text{labor mkt clearing} \\ \oplus}}$$

- $\frac{dY}{di} < \frac{dC}{di} < 0$ is a necessary (not sufficient) condition for inflationary tightening
- Walrasian labor market makes inflationary tightening less likely

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  - infinitely elastic labor supply
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- **Empirical evidence** on monetary tightening pushing down aggregate supply? Plausible in light of e.g. Hartwig & Lieberknecht (2020) who estimate that tightening
  - increases firm exit (as here) & reduces entry