Discussion of: *Fiscal Multipliers: Liquidity Traps and Currency Unions*

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This paper: key role of "inflation channel"

1. Critical in making ZLB fiscal multiplier **large**

$$\uparrow G \rightarrow \underbrace{E\pi \rightarrow \downarrow \text{real int. rate}}_{i=0} \rightarrow \underbrace{\uparrow C}_{\substack{\text{crowding-in} \\ \text{of private C}}}$$

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$\rightarrow$The "overreliance" of NK models on the (expected) inflation channel

Questions

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- $R_t = 1$
- Assume current price **fixed**

$$\underbrace{(Y_t - G_t)}_{C_t}^{-\sigma} = \beta \frac{\overline{P}_t}{P_{t+1}} (Y_{t+1} - G_{t+1})^{-\sigma} \quad \text{Euler condition}$$

- Rewrite

$$Y_t = \underbrace{G_t}_{\substack{\text{contemporan.}\\ \text{multiplier}}} + \underbrace{\overbrace{\left(\frac{P_{t+1}/\overline{P}_t}{\beta}\right)^{\frac{1}{\sigma}}}^{\text{substitution effect}} \overbrace{(Y_{t+1} - G_{t+1})}^{\text{income effect}}}_{\substack{\text{expectation-based}\\ \text{multiplier}}}$$

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- Woodford (2013)

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- Note: if ΔG purely **temporary** $\longrightarrow$ expectation-based multiplier $= 0$

- Can a purely **temporary** fiscal expansion generate an increase in **future** output?

$$
\begin{aligned}
G_t &> 0 \\
G_{t+1} &= 0
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- Can construct equilibrium s.t **multiplier** $>$**1** can be obtained via future deflation

$$\uparrow G_t \rightarrow \quad \uparrow Y_{t+1} \text{ and } \quad \underbrace{\downarrow P_{t+1}}_{\text{future } \textbf{deflation}}$$

- Suppose **frictional** labor markets → Unemployment **endogenous** state (e.g Rendahl 2014)

$$Y_{t+1} = N_{t+1} = Y(N_t)$$

$$\underbrace{\uparrow G_t \rightarrow \quad \uparrow Y_t = N_t}_{\substack{\text{increase in} \\ \text{current Y}}} \rightarrow \qquad \underbrace{\uparrow N_{t+1}}_{\substack{\text{persistence via} \\ \text{frictional labor mkt}}} \qquad \rightarrow \text{ Multiplier } > 1$$

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- Suppose CIA constraint binding in t+1

$$\overline{M}_{t+1} = P_{t+1} Y_{t+1}$$

- Conditional on $\overline{M}_{t+1}$:

$$\uparrow Y_{t+1} \qquad \underbrace{\downarrow P_{t+1}}_{\text{future deflation}}$$

Isn't a muted inflation response precisely what we should expect in deep recessions?

Inflation particularly unresponsive to stimulus policies during recessions

- General implication of models in which **marginal** cost of hiring differs from the **average** cost (especially in **recessions)**
- With **frictional** labor markets:

$$\uparrow \text{labor market tightness} \rightarrow \uparrow \text{marg. cost} \rightarrow \uparrow \text{inflation}$$

- Recession $\rightarrow$ Demand stimulus policies likely to have a **muted effect** on tightness

General implication of DMP-frictional labor market model

- "Labor **supply**"

$$\underbrace{\uparrow \theta}_{\text{tightness}} \longrightarrow \text{easier for job seekers to find jobs} \longrightarrow \uparrow N$$

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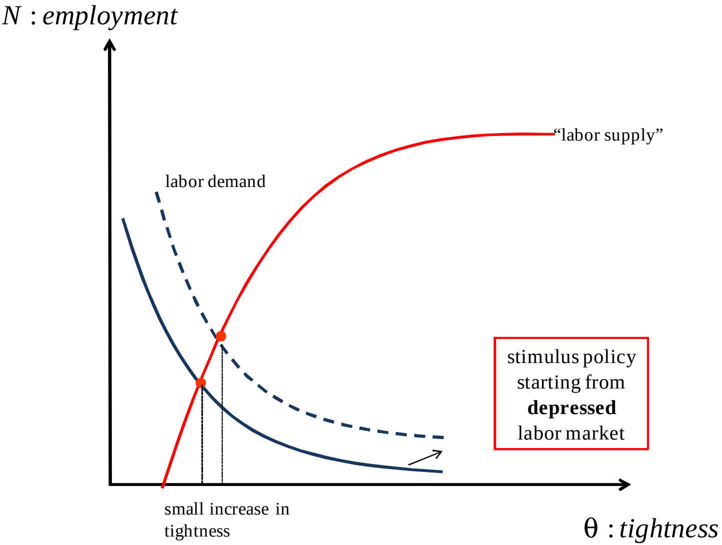
- CRS matching function + prod. function with decreasing marginal returns to labor (see e.g. Michaillat 2013)

Non-linear effect on tightness of stimulus policy



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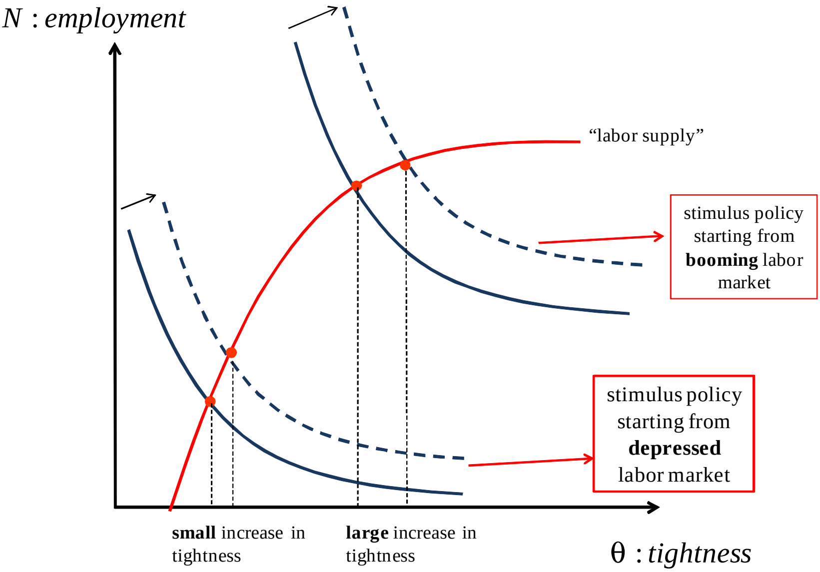
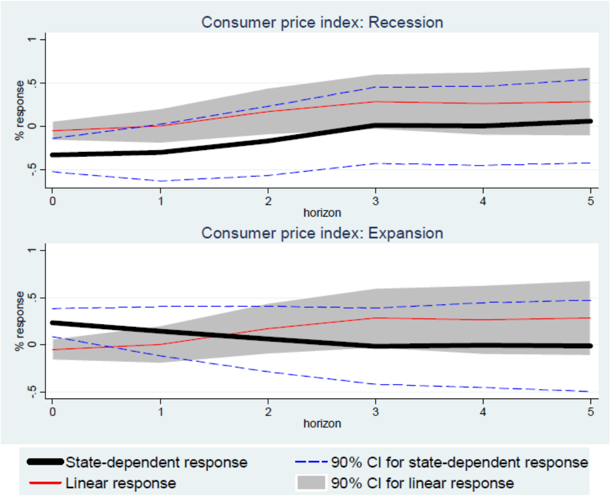


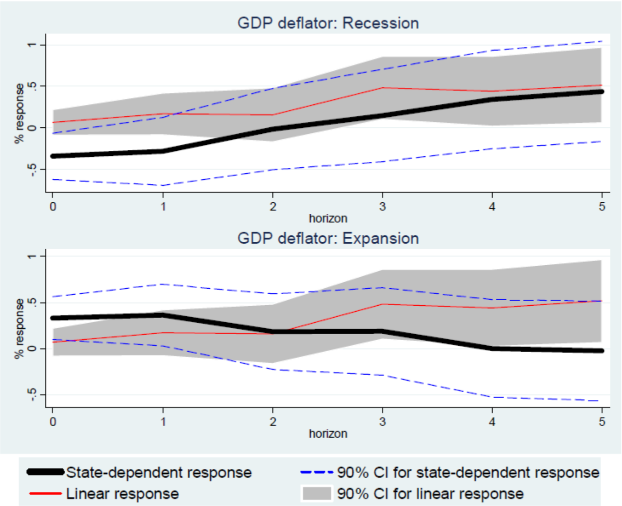
What does the empirical evidence say?

Evidence of state dependence

Source: Auerbach and Gorodnichenko (2011)



- Note: if anything the price level **falls** in recessions.



GDP deflator: Recession
% response
-.5
0
.5
1
0
1
2
3
4
5
horizon
GDP deflator: Expansion
% response
-.5
0
.5
1
0
1
2
3
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5
horizon
State-dependent response
Linear response
90% CI for state-dependent response
90% CI for linear response

Policy multipliers are state dependent.

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- Ultimately what we want is **components of GDP** to respond to stimulus.
- Theory and evidence suggest that components of spending that **contract the most** in recessions, i.e. business and durable **investment**, are also the **least reactive** to policy during the same recession.
- True for all components of spending where

1. **fixed costs** are relevant
2. most of adjustment happens along **extensive margin**

→See e.g., Berger-Vavra (2013), Winberry (2014)

Conclusions

- Great and **relevant** paper
- Doubtful that "inflation channel" truly the key one $\longrightarrow$ Says something about the relevance of NK models for analysis of policy multipliers in deep recessions
- Focus on models that emphasize **frictional labor markets** and **state-dependency** of fiscal multipliers