Discussion of:

Policy at the Zero Bound

by Correia, Fahri, Nicolini & Teles

Todd Keister

FRBNY and NYU-STERN

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The issue

- The zero lower bound has become a pressing policy concern
  - federal funds rate in the U.S. has been near zero since Dec. 2008

- Other, unconventional policy tools have been used
  - fiscal stimulus, targeted tax credits (housing, autos, etc.), asset purchases

- These tools are costly to use; involve inefficiencies
  - much discussion about the effectiveness of particular tools

- Question here: what is *optimal* policy in this situation?
  - how can one implement efficient allocations?
• Considers a standard New Keynesian model
  – set of tax instruments is fairly “large” (labor & consumption)

• Shows that the efficient allocation can be implemented regardless of the zero lower bound
  – in fact, monetary policy is a redundant tool

• Paper is interesting, and clearly very policy relevant
  – Bullard (St. Louis Fed) recently proposed the Fed buy more long-term assets to avoid being trapped at the zero lower bound

• My discussion: Review the main result in a very simple model
  – then offer some comments/questions
A two-period model

- Preferences: \( u(C_1, N_1) + u(C_2, N_2) \xi \)

- Technologies: \( C_1 \leq A_1 N_1 \) and \( C_2 \leq A_2 N_2 \)

- Budget constraints (in current-period dollars):

  \[
  (1 + \tau^c_1) P_1 C_1 \leq (1 - \tau^m_1) W_1 N_1 - B \\
  (1 + \tau^c_2) P_2 C_2 \leq (1 - \tau^m_2) W_2 N_2 + RB
  \]
The efficient allocation

\[\text{slope} = -A_t\]

\[c_1^* \quad n_1^* \quad n_1\]

\[c_2^* \quad n_2^* \quad n_2\]

\[c_1 \quad c_2\]
The efficient allocation

slope = $-A_t$

\[ c_1^n c_2^n \]
In equilibrium

\[ \text{slope} = \frac{(1 - \tau_2^*) \ell n_2}{(1 + \tau_2^*) P_2} \]

\[ \text{slope} = -R \frac{(1 + \tau_1^*) P_1}{(1 + \tau_2^*) P_2} \]
• In equilibrium, prices must be such that

\[ R \left( \frac{1 + \tau_1^c}{1 + \tau_2^c} \right) \frac{P_1}{P_2} = \frac{u_c(C_1, N_1)}{u_c(C_2, N_2) \xi} \]

• Note: there are three prices on the LHS (and only one equation)
  – this is the usual nominal indeterminacy in general equilibrium

• Assume: central bank can choose \( R \)
  – can also normalize \( P_1 = 1 \)

• Suppose there is a “shock” to intertemporal preferences
  \( \xi \rightarrow \xi' \)
A “shock”
A “shock”

Real relative price must change
Suppose $\tau_t = 0$ in both periods. Equilibrium then requires

$$R' \frac{P_1}{P_2'} = \frac{u_c(C_1, N_1)}{u_c(C_2, N_2) \xi'}$$

**Sticky prices**

- Suppose there is a real resource cost of having $P_2 \neq P_1$

- Then central bank should set

$$R' = \frac{u_c(C_1, N_1)}{u_c(C_2, N_2) \xi'}$$

  - this is optimal monetary policy in a New Keynesian framework

  - central bank changes $R$ to maintain price stability
The zero lower bound

• If agents can hold cash, arbitrage requires $R \geq 1$

• What if

$$\frac{u_c(C_1, N_1)}{u_c(C_2, N_2) \xi'} < 1?$$

• Monetary policy cannot implement the efficient allocation,
  - $P_2$ must adjust (which is costly)

• But with time-varying consumption taxes

$$R' \left( \frac{1 + \tau_1'}{1 + \tau_2'} \right) \frac{P_1}{P_2'} = \frac{u_c(C_1, N_1)}{u_c(C_2, N_2) \xi'}$$

  - set $\tau_c$ so that $P_2' = P_1$
Adjust labor taxes to preserve static efficiency
Adjust labor taxes to preserve static efficiency

Earlier literature missed this result because it only considered one policy at a time
What else the paper does

• This is all straightforward. What about ...
  – richer production structure? government consumption?
  – many time periods? capital accumulation?
  – multiple steady states and liquidity traps (as in Benhabib et al.)?

• The paper shows that none of these matter
  – the intuition from the very simple model carries through

• Conclusion: these “unconventional” policies are unnecessary
  – adjusting tax rates is a better approach
Some Comments/Questions
(1) Which prices are sticky?

- Consumer pays \((1 + \tau^C_t) P_t\), producer receives \(P_t\)
  - which price is costly to change?

- Consumer price need to respond to the preference shock
  - if \(P_t\) is sticky, tax policy can implement the efficient allocation
  - if \((1 + \tau^C_t) P_t\) is sticky, it cannot

Q: How important are the details of the price setting process?

  - not just the parameters of a Calvo-type rule, but ...

  - in general, how does a change in \(\tau^C_t\) affect consumer/producer prices?

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(2) Long term interest rates

- Many unconventional policies aim to reduce long-term interest rates
  - promises to keep short-term rates low for an “extended period”
  - purchases of long-term assets

- Presumably reflects the importance of durable goods

- In principle, consumption taxes can affect long-term rates
  - commit to the entire sequence \( \{\tau^c_s\}_{s=t}^T \)

- But ... would this be time consistent?
  - how would policy makers respond to future shocks?
Q: Is the optimal policy here time consistent?

Q: Would introducing durable goods change the answer?

– the model may not be giving some of the unconventional policies a fair chance

• Commitment is also an issue in using monetary policy to lower long-term rates

– clear example: “extended period” language

• However, this is why we have independent central banks

Q: Could time consistency considerations make unconventional monetary policy more powerful than fiscal policy?
(3) Richness of tax instruments

- While the taxes in the model appear reasonable, they are really quite powerful
  - counting policy instruments and decision margins

- Suppose there are more decision margins
  - home production, other untaxed activity, costly tax avoidance, etc.

- With limited tax instruments, monetary policy (and the zero lower bound) would again be relevant

Q: Would this change the main message?

  - or would you still want to use consumption taxes as shown here?
(4) Limits on tax rates

- The problem with monetary policy is the limit $R \geq 1$
- Fiscal policy is very effective when there are no limits on $\tau^j$

Q: Is this realistic? Or are we giving fiscal policy too much credit?
  - if policy is revenue neutral, $\tau$ must be high in some periods
  - if $\tau$ is very high, tax evasion may become an issue
Conclusion

- Paper addresses a very important policy issue
  - results are clear, quite general

- Conclusion: these “unconventional” policies are unnecessary
  - adjusting tax rates is a better approach

Q: Does this result survive the introduction of other (realistic) features?
  - if so, the case becomes much stronger