Discussion of “Monetary policy options in a ‘low for long’ era” by R. Harrison, M. Seneca and M. Waldron

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Andreas Tischbirek
University of Lausanne

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Overview

How effective are different types of monetary policy at stabilising inflation and output in an environment with a low r^*?

- Small-scale model
- Calvo rigidities in goods market, efficient steady state
- Persistence through
  - Consumption habits
  - Fraction of rule-of-thumb price setters
  - Price indexation
- QE in the form of long-term government bond purchases
  - Long end of the yield curve is a separate policy instrument due to portfolio costs that depend on bond positions
- Odyssean forward guidance

Model

- Assumption–No rule-of-thumb firms, no price indexation, no habits
- Simplified model

$$
\begin{aligned}
\pi_t &= \bar{\beta}\mathrm{E}_t\pi_{t+1} + \kappa x_t + u_t \\
x_t &= \alpha\mathrm{E}_t x_{t+1} - \tilde{\sigma}(r_t^e - \mathrm{E}_t\pi_{t+1} - r_t^*) \\
r_t^e &= r_t^s - \phi_1 q_t - \phi_2(q_t - q_{t-1}) + \phi_3\mathrm{E}_t(q_{t+1} - q_t)
\end{aligned}
$$

- Policy tools
  - Short-term interest rate r_t^s
  - Long-term bond purchases q_t

Policy

- Loss function

$$L_t = \mathrm{E}_t \sum_{s=t}^{\infty} \beta^{s-t} \left[\pi_s^2 + \lambda_x x_s^2 + \lambda_q q_s^2 + \lambda_{\Delta q} \left(\Delta q_s \right)^2 + \lambda_{\Delta r} \left(\Delta r_s \right)^2 \right]$$

- Constraints under different policy approaches

	Strd. Policy	**QE**	**Time consistent**
"Pre-crisis consensus"	$r_t \geq zlb$	$q_t = 0$	yes
"Post-crisis revealed pref."	$r_t \geq zlb$	$0 \leq q_t \leq \bar{q}$	yes
"Forward guidance"	$r_t \geq zlb$	$q_t = 0$	no

Results for the UK

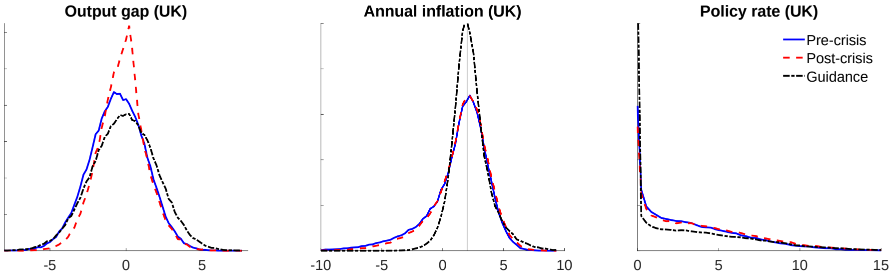

Figure: Effect of different policy approaches for $r^* = 0$

Comments

- Simplified model

$$\begin{aligned}
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x_t &= \alpha\mathrm{E}_t x_{t+1} - \tilde{\sigma}(r_t^e - \mathrm{E}_t\pi_{t+1} - r_t^*) \\
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\end{aligned}$$

- Key challenges

  1. Forward guidance puzzle $\Rightarrow$ Role of expectations
  2. Slope of the Phillips curve

Role of Expectations

$$x_t = \underbrace{\alpha}_{=1/(1+\epsilon_\beta)} \mathrm{E}_t x_{t+1} - \tilde{\sigma}(r_t^e - \mathrm{E}_t \pi_{t+1} - r_t^*)$$

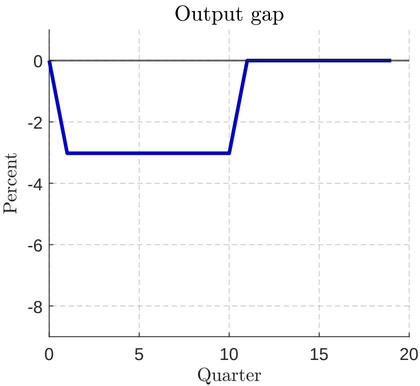
- Commitment to interest rate path far in the future has implausibly large effects (Del Negro et al., 2015)
- Result of forward looking nature of dynamic IS curve (McKay et al., 2016)
- Issue mitigated by "discounted Euler equation" (McKay et al., 2017)
  $\Rightarrow$ Can be seen as result of bigger incomplete markets model
    - How much discounting is plausible?
    - Based on micro-foundations in McKay et al. (2017), $\alpha \in \{0.94; 0.97\} \Rightarrow \epsilon_\beta \in \{0.03; 0.06\}$
    - Here, based on Gabaix (2020), $\epsilon_\beta = 0.175$

A Single ELB Recession

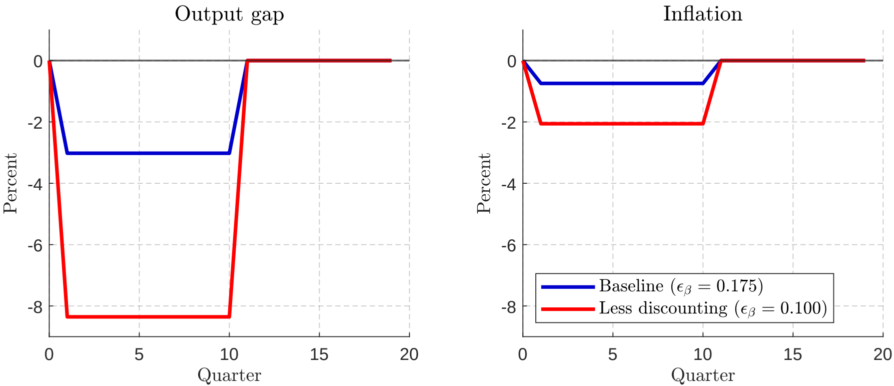
- Thought experiment as in Eggertsson and Woodford (2003) and McKay, Nakamura and Steinsson (2017), among others
- Consider calibrated/estimated
  - Dynamic IS curve
  - Phillips curve

  from simplified model (for the US)
- Conventional policy tool set according to $r_t^s = \max\{0, r_t^* + \phi\pi_t\}$
- Shock
  - r_t^* drops to annualised value of -2%
  - Remains at low value with probability $\lambda = 0.9$ each quarter
  - Reverts to positive pre-crisis value with probability $1 - \lambda = 0.1$ (absorbing state)

A Single ELB Recession



A Single ELB Recession



Slope of the Phillips curve

$$\pi_t = \bar{\beta}\mathrm{E}_t \pi_{t+1} + \kappa x_t + u_t$$

- Debated following "missing disinflation" in the wake of the Great Recession and "missing reinflation" in late 2010s
- Limited-information estimation of κ
  - Based on macro data, parameters of the NKPC weakly identified (Mavroeidis, Plagborg-Møller, Stock, 2014)
    $\Rightarrow$ Wide range of estimates
  - Recently, identification based on state-level data from the US (e.g. Hazell et al., 2020)
    $\Rightarrow \hat{\kappa} \approx 0.008$
  - Here, $\kappa = 0.026$

A Single ELB Recession