Switching-track after the Great Recession

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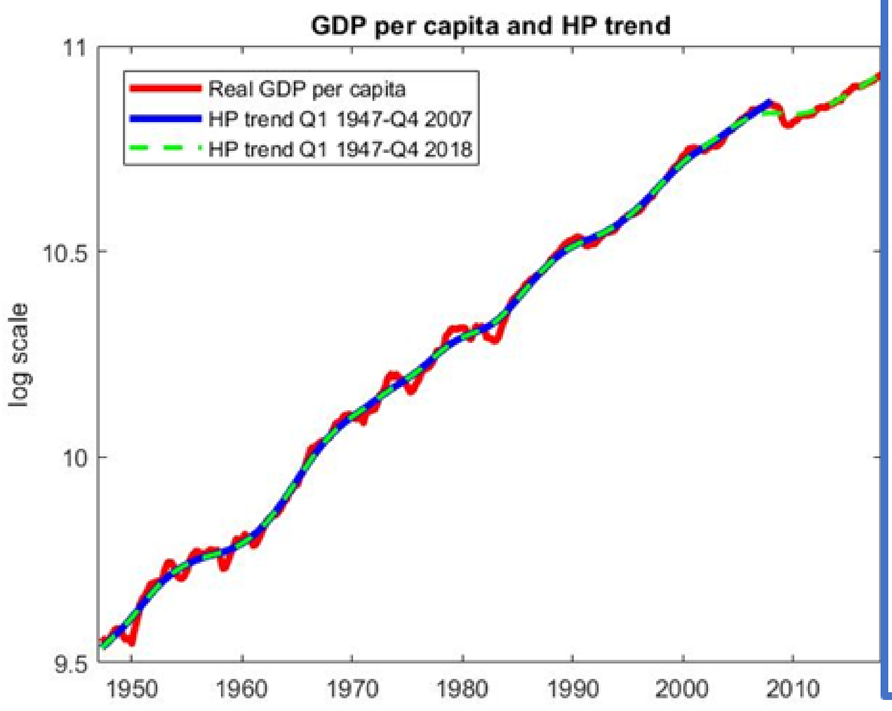
1. Motivation (U.S. data)



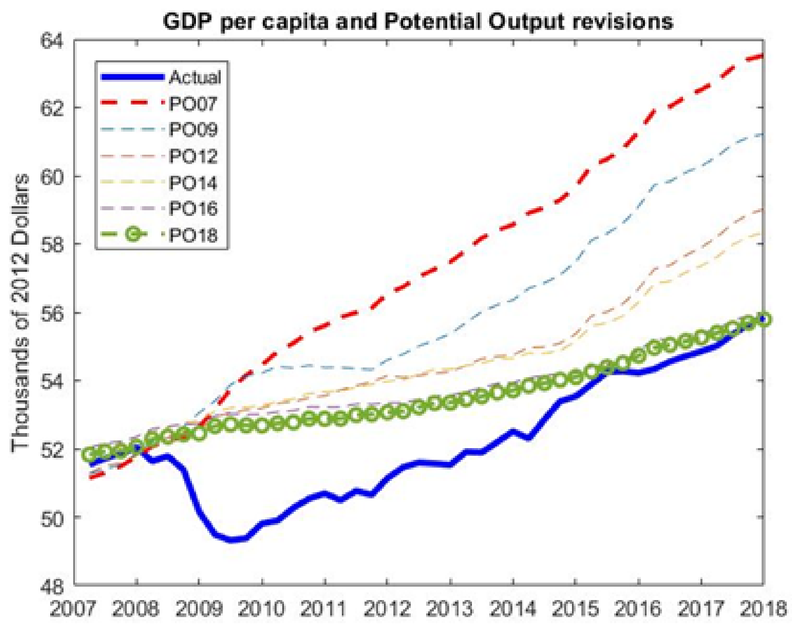
General consensus
before the Great Recession:
downturns are followed by recoveries

→ Potential output = trend in the productive capacity of the economy

"Recessions typically have little effect on historical estimates of potential output because the methodology aims to exclude cyclical effects."

(CBO report 2014)

This time was different



2. Research Questions

1. Can endogenous growth theory explain the observed shift in GDP trend?

   YES → in an AK economy, a negative shock to the capital stock does not affect the marginal return to capital but shifts the level of output to a lower trend

2. Can monetary policy generate recoveries?

   YES → a Taylor rule provides stimulus and protects productive capacity
   → enough to generate a recovery unless the recession is persistent and potential output is revised down

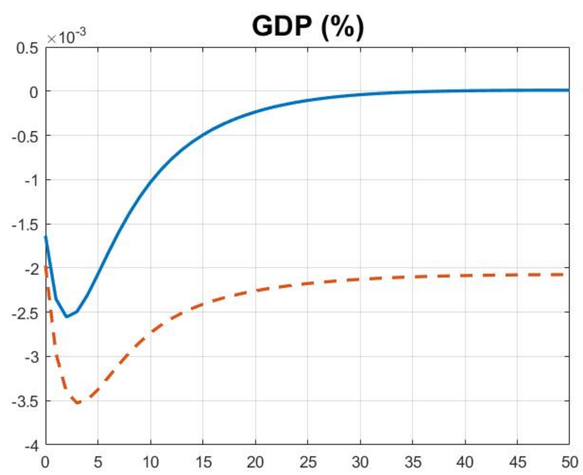
3.The Model

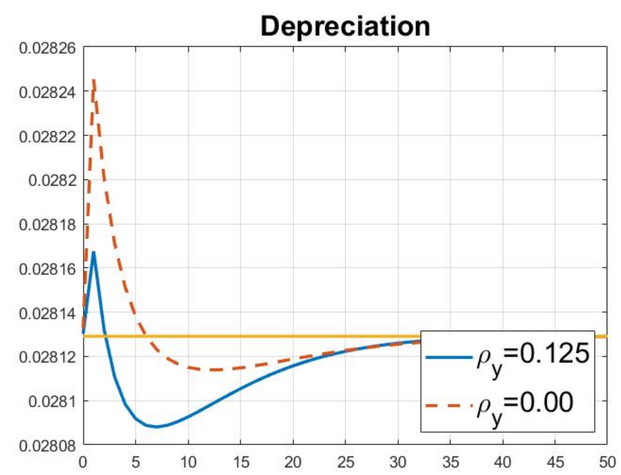
A DSGE model with financial frictions (Christiano et al. 2014).

- Representative household s.t. **Confidence shock**
- Intermediate sector has learning-by-doing technology → **AK in aggregate**
- Entrepreneurs who borrow to buy capital, subject to i.i.d. shocks ω and **bankruptcy risk**
- **Risk shocks** → higher probability of bankruptcy F(ω)

4. Novel depreciation mechanism

- We assume that capital of bankrupt entrepreneurs is subject to physical **depreciation and obsolescence**: $\kappa \in (\delta, 1)$ and introduce disruption spillovers → as the probability of bankruptcy deviates from 'normal' → disruption effects
- By affecting the bankruptcy rate through the financial accelerator channel, monetary policy also affects depreciation
  → **novel productive capacity destruction prevention channel of monetary policy**





5. Monetary Authority

- Follows a **Taylor rule** with ZLB constraint

$$R_t^m = \bar{R}^m + \rho_\pi(\pi_t - \bar{\pi}) + \rho_y \log\left(\frac{G\hat{D}P_t}{y_t^p}\right) \qquad R_t = \max(1, R_t^m)$$

- Allows for **Switching-track** by measuring **potential output** as a moving average of past GDP values → replicating potential output revisions in US

6. Calibrated results: Great Recession and Oil Crises