

# Downward Nominal Wage Rigidity and Inflation Dynamics during and after the Great Recession

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## Research question

✓ Does **downward nominal wage rigidity (DNWR)** resolve two inflation puzzles: **the missing deflation** and **the excessive disinflation**?

## Approach

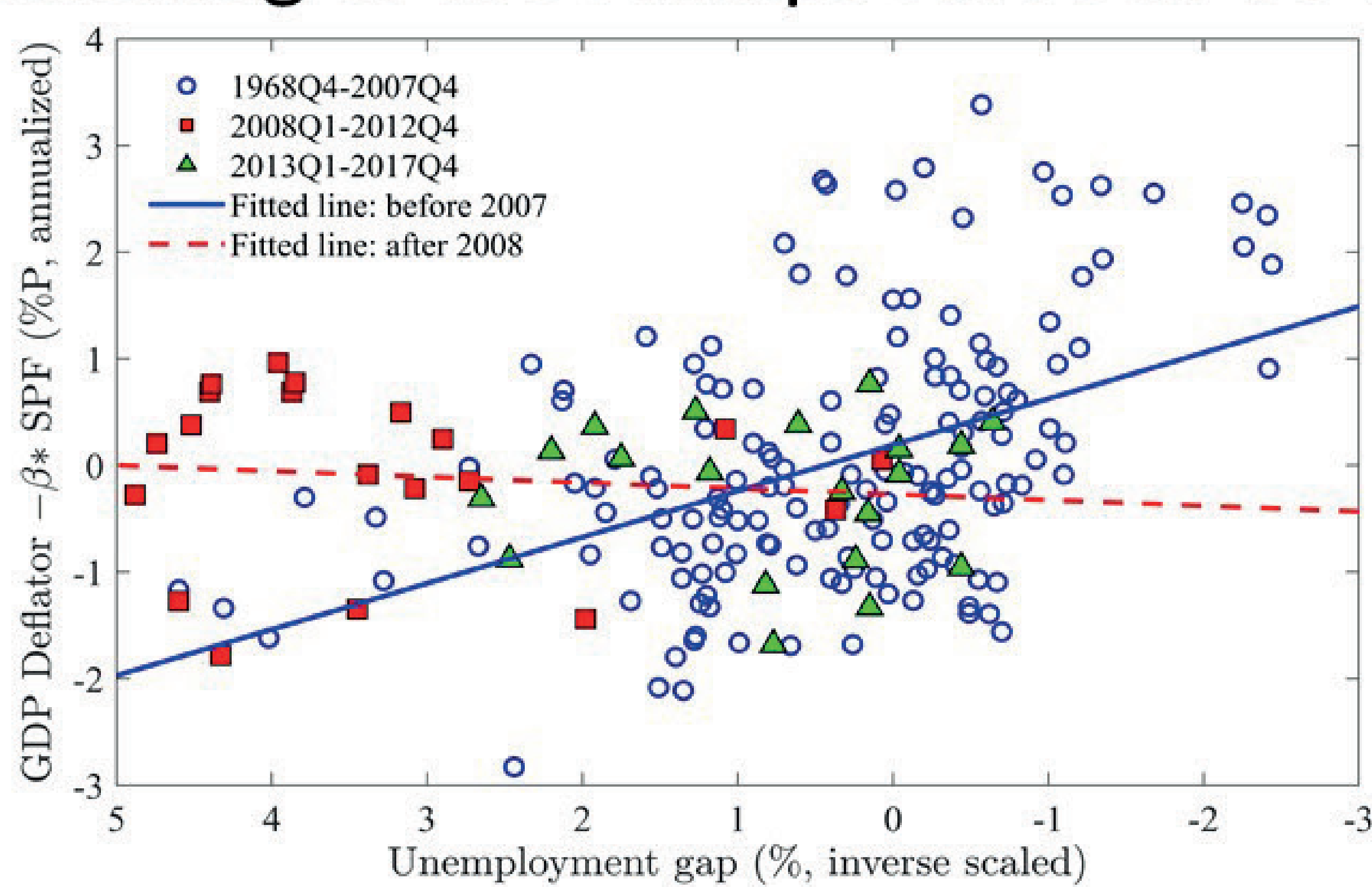
✓ This paper develops a New Keynesian model with DNWR for individual workers.

## Key findings

- ✓ DNWR makes **the observed Phillips curve flatter** in recessions.
- It creates a wedge between the output gap and marginal cost in an asymmetric manner.
- ✓ Endogenous **evolution of cross-sectional wage distribution** accounts for non-linearities.
- ✓ The ZLB reinforces the mechanism by amplifying the impacts of an exogenous shock.

## Motivation

✓ Flattening of the Phillips curve in US data



## Model

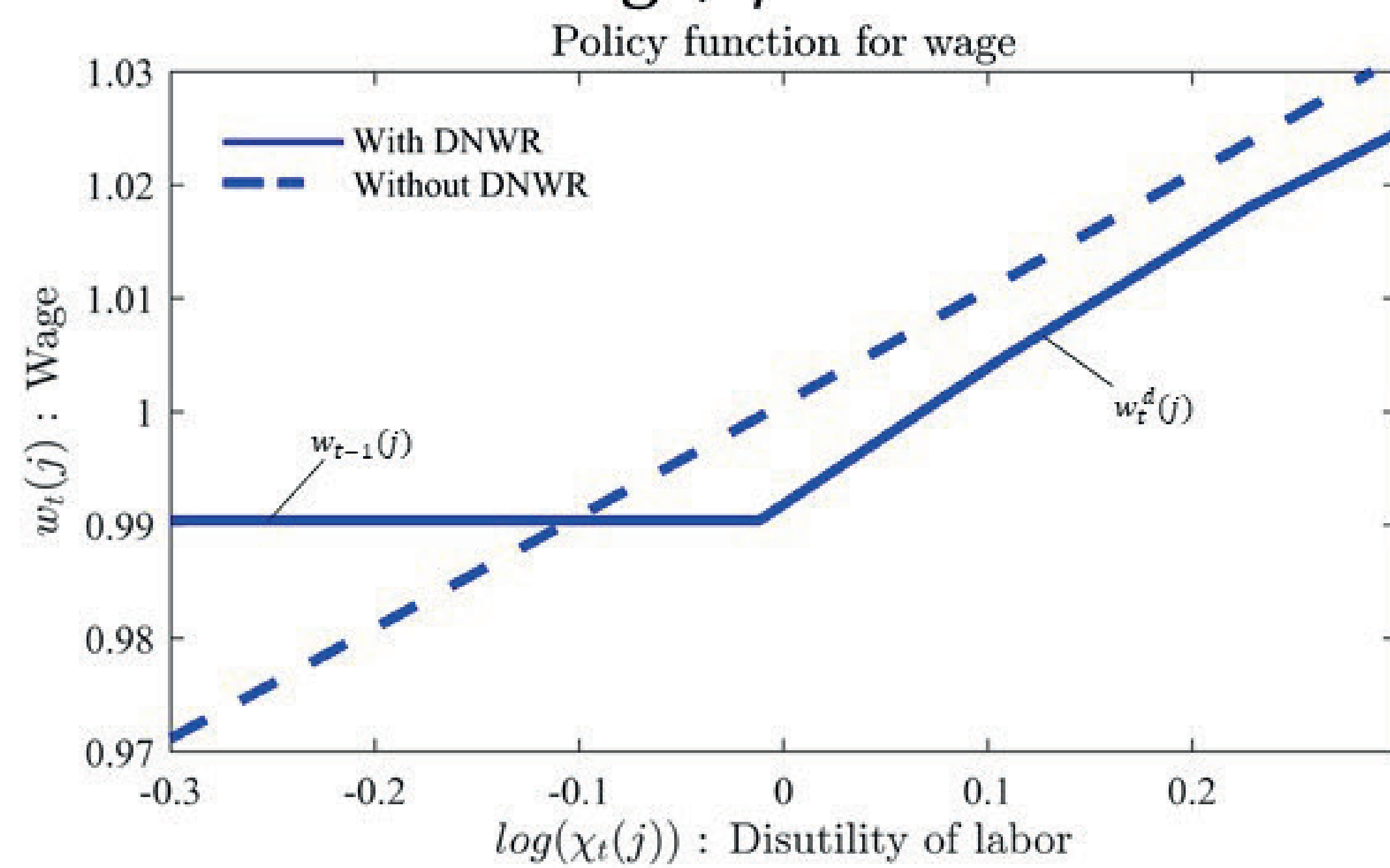
✓ Individual wage setting with DNWR

$$w_t(j) = \max\{w_t^d(j), w_{t-1}(j)\}$$

$$\frac{w_t^d(j)}{P_t} = \frac{\chi_t(j) h_t(j)^\eta}{C_t^{-\sigma}} - \beta_t E_t[\psi_{t+1}(j)] \left( C_t^{-\sigma} \frac{\theta_w h_t(j)}{w_t^d(j)} \right)^{-1}$$

$mrs_t(j)$

where  $w^d$ : desired wage,  $\psi$ : shadow value of DNWR



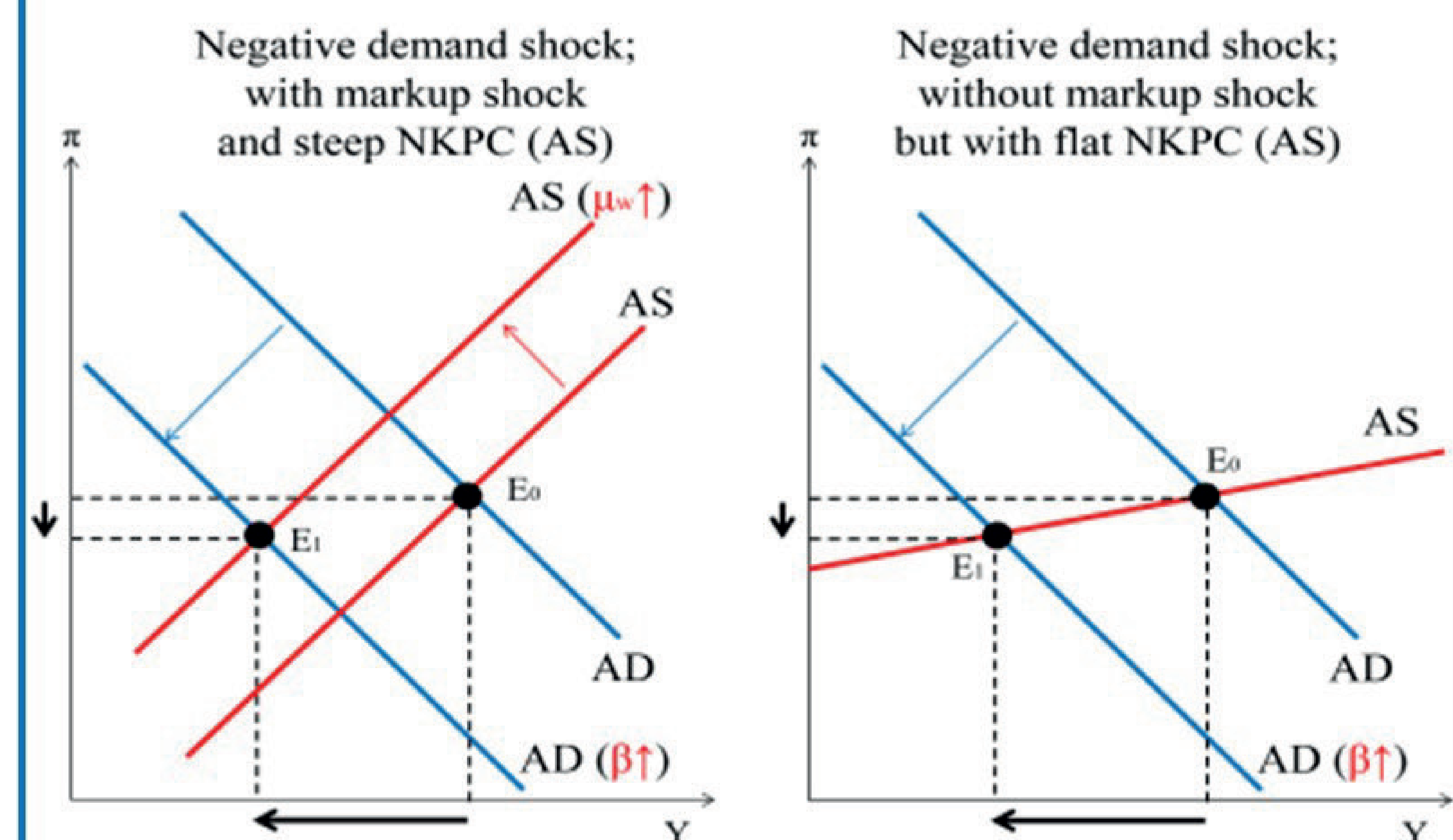
✓ Labor market equilibrium

$$MC_t MPL_t = \frac{W_t}{P_t} = \mu_t^w MRS_t$$

where  $\mu_t^w$ : wage markup

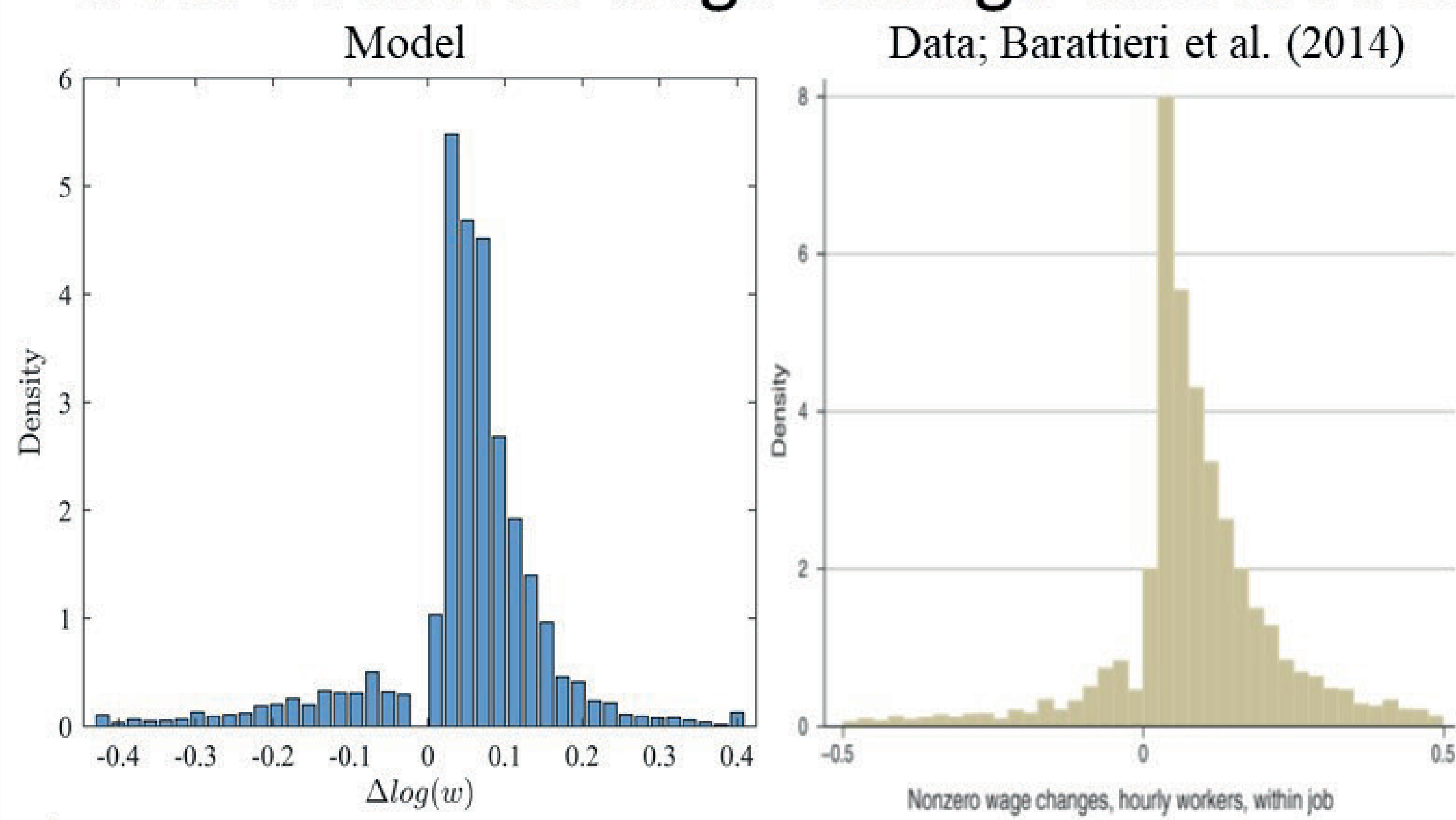
✓ Phillips curve (simplified example)

$$\begin{aligned} \pi_t^p &= \beta E_t[\pi_{t+1}^p] + \kappa \widehat{MC}_t \\ &= \beta E_t[\pi_{t+1}^p] + \kappa \widehat{Y}_t^{gap} + \hat{\mu}_t^w \end{aligned}$$

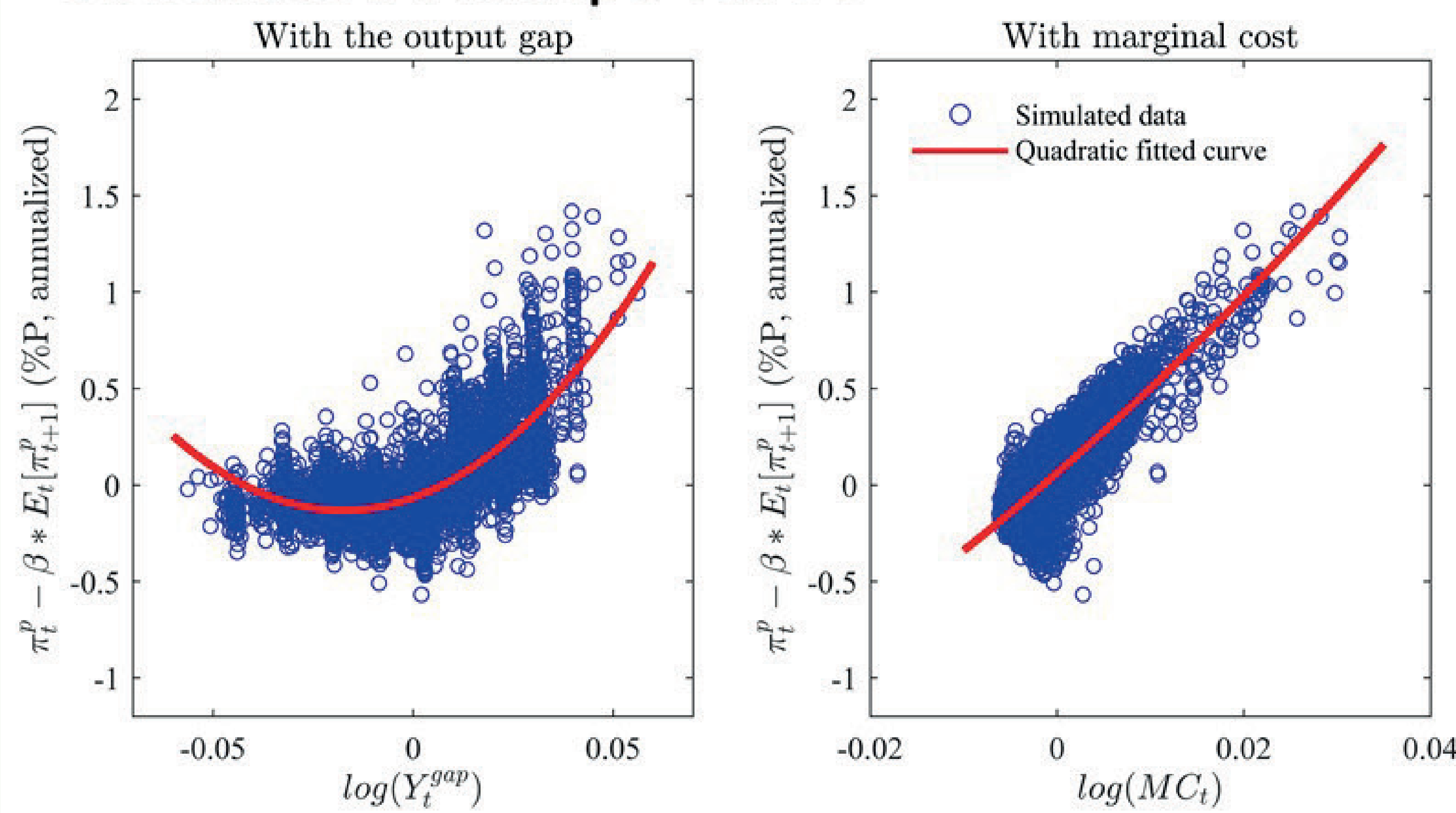


## Numerical results

✓ Cross-sectional wage-change distribution

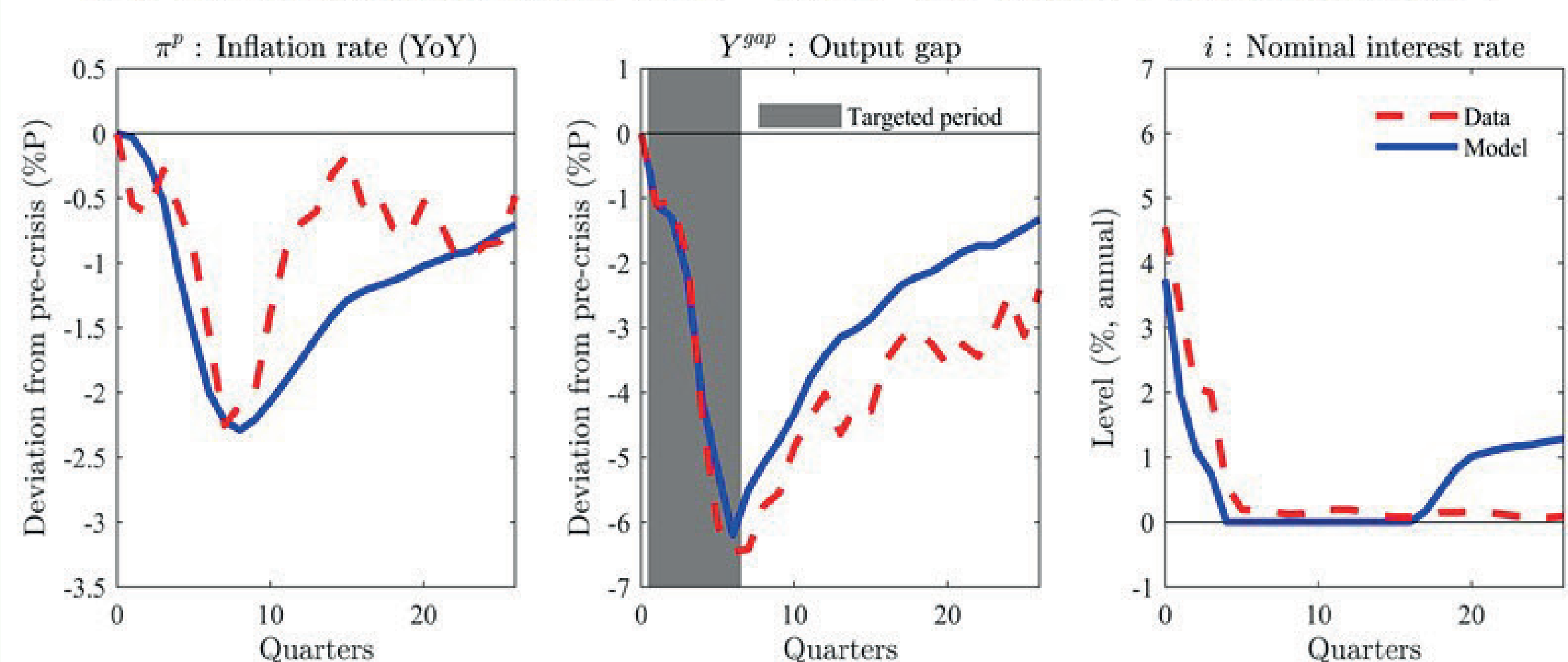


✓ Simulated Phillips curve



## Missing deflation

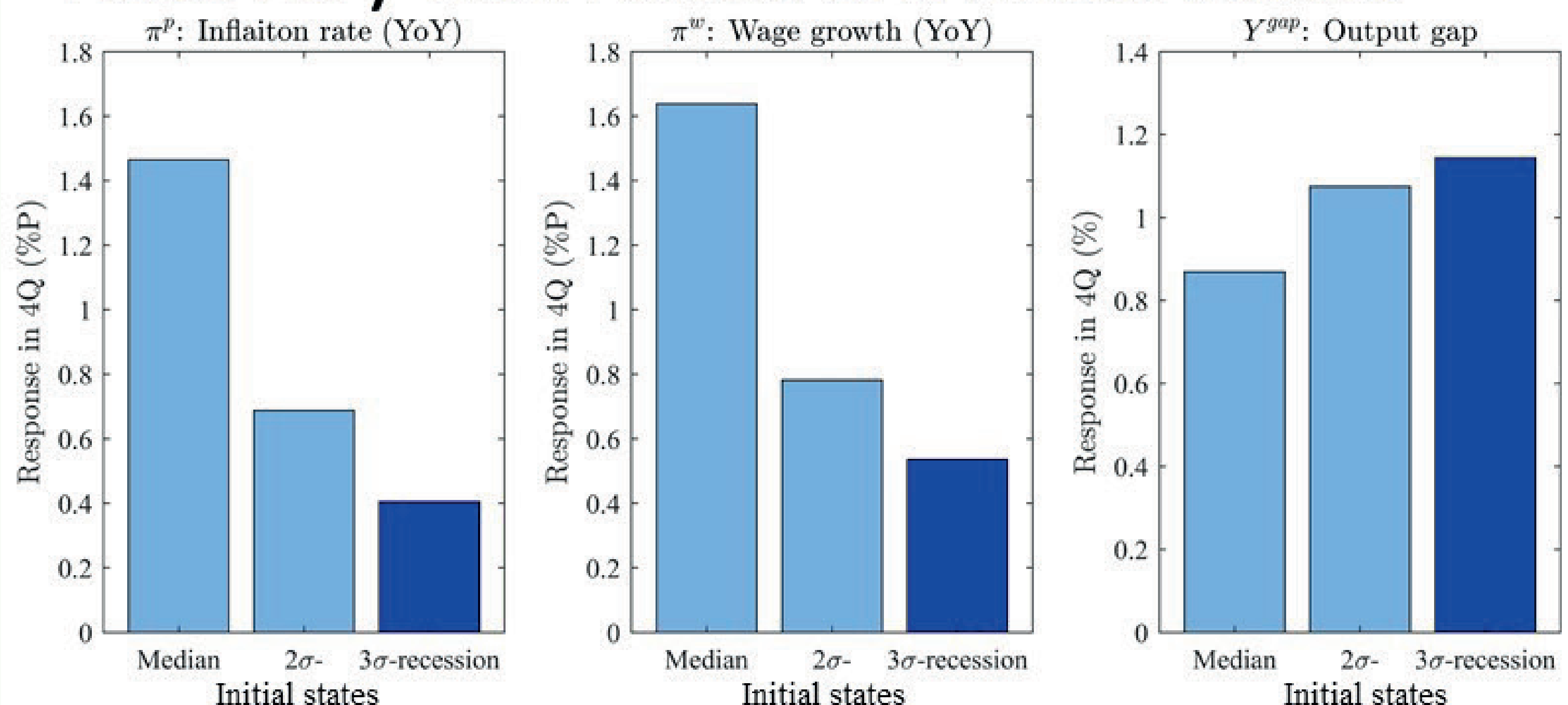
✓ Counterfactual for the Great Recession



- Small and persistent decline of inflation.

## Excessive disinflation

✓ Recovery from different initial states



- Backward- and forward-looking effects of DNWR.