Recessionary Wage Flexibility in a Monetary Union – A TANK Approach

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What are the ***BENEFITS*** of ***WAGE FLEXIBILITY*** in a monetary union?

Motivation

In a Monetary Union

- No exchange rate adjustment $\rightarrow$ Internal devaluation through wage flexibility

  Post-crisis consensus: Enhance wage flexibility to restore competitiveness

- Spain (2012): Decentralized bargaining $\Rightarrow$ Higher flexibility

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Emerging Challenges to Orthodoxy

- EU (2022): Minimum Wage Directive – Concerns of in-work poverty

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How do wage adjustment mechanisms perform when households face financial constraints?

Outline

Understanding wage flexibility (so far)

Two channels

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Households perfectly insured:

Labor income changes do not affect aggregate demand.

What do we do

Revisit effects of **wage flexibility** with **financial constraints**

Analyze effects **analytically** and **quantitatively**

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$\rightarrow$ Main results: **Flexible wages** can be **more recessionary**

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→ **Analytically**: Derive simple condition

- Depends on degree of PPI **price rigidity**, share of **HtM** and **trade openness**

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Model overview I

Small open economy (SOE) model

- **Price**- and **wage** rigidities
- **Monetary union** $\quad \Rightarrow \quad i_t = i_t^*$

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Two goods

- **Domestic good** sold at $P_{Ht} = P_{Ht}^*$
- Bundled **Foreign goods** sold at $P_{Ft} = P_{Ft}^*$
- **MP** stabilizes $P_{Ft} = 1$
- **Consumption basket** sold at P_t.
- **Terms of trade**: $S_t = \frac{P_{Ft}}{P_{Ht}}$
  - Increase in terms of trade = Depreciation

Model overview II

▸ 5 eq. model

Tractable TANK

- **Domestic** households $K \in \{C, U\}$
  - **Constrained** households C — **Hand-to-mouth**
  - **Unconstrained** households U — Access to **state-contingent bonds**
- **Backward-looking** wage- and price **Phillips curve**
- **i.i.d. non-persistent** World demand shock: $C_t^* = \chi_{1t}^*$

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  - Study the effect of wage rigidity on the response

$$\frac{\partial a_1}{\partial \theta_W} = ?$$

Effects of wage flexibility

Proposition

More flexible wages are recessionary in response to a contractionary foreign shock if and only if

$$\underbrace{1-\theta_P}_{\text{Price flexibility}} < \underbrace{(1-\nu)}_{\text{Home bias}} \underbrace{\lambda C_c}_{\text{Weight HtM}} .$$

Intuition

- More likely with high price rigidity, rather closed economy, a large share of HtM

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- More likely with high price rigidity, rather closed economy, a large share of HtM
- Amplification requires constrained households

Intuition

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- **Competitiveness channel**:
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- **Real income channel**
  - Wages fall $\Rightarrow$ Domestic income falls $\Rightarrow$ HtM households reduce consumption $\Rightarrow$ Demand **falls**

Quantitative Model

Relax simplyfing assumptions

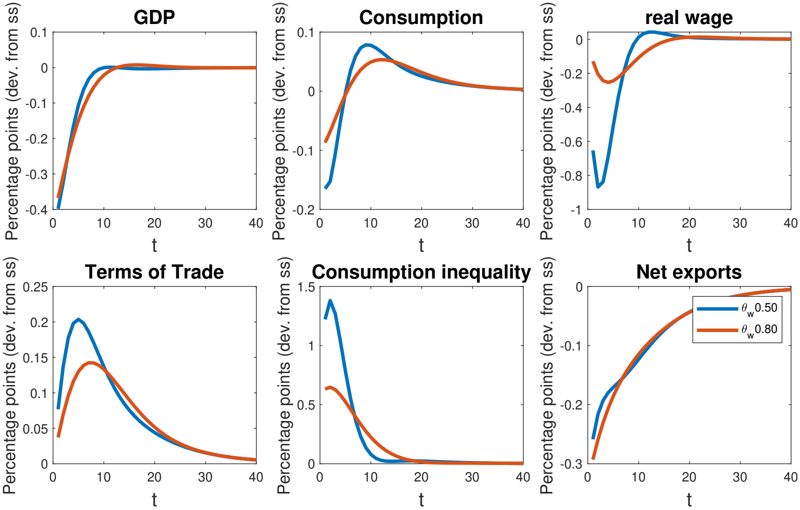
- Standard **forward-looking** wage- and price **Phillips curve**
- **Persistent** shocks
- Standard **calibration**

Robustness

- Standard **HANK** model with **non state-contingent** bonds
- **Analytically & numerically** robust with **interest rate** and **domestic demand** shock

IRFs - Foreign demand shock

‣ Peak responses ‣ HANK



Conclusion

Whether increased wage flexibility is beneficial in a monetary union depends on country characteristics.

→ Reaction of **PPI prices**

→ **Openness** of economy

→ Share of **high MPC households**

Appendix

Equilibrium

with i.i.d.-non-persistent foreign demand shocks

Back

Goods market clearing

$$\hat{y}_t = (1-\nu)\hat{c}_t + (1-\nu)(\nu + \frac{\nu}{1-\nu})\hat{s}_t + \nu\hat{\chi}^*_{1t}$$

Aggregate Euler equation

$$\hat{c}_t = (1-\nu)\hat{s}_t - \frac{\lambda}{\gamma(1-\lambda)+\lambda}\hat{\gamma}_t$$

Price Phillips Curve

$$-\hat{s}_t = \hat{p}_{Ht} = \kappa_H\left[\hat{\omega}_t + \nu\hat{s}_t\right]$$

Wage Phillips Curve

$$\hat{\omega}_t - (1-\nu)\hat{s}_t = \hat{w}_t = \kappa_w\left[(\varpi_Y + \bar{\rho})\hat{y}_t - \varpi_S\hat{s}_t - \hat{\omega}_t - \frac{1}{1-\bar{u}}\frac{\nu}{1-\nu}\hat{\chi}^*_{1t}\right]$$

Gap in consumption

$$\hat{\gamma}_t = -\left[\hat{\omega}_t + \hat{y}_t - (1-\nu)\hat{s}_t\right]$$

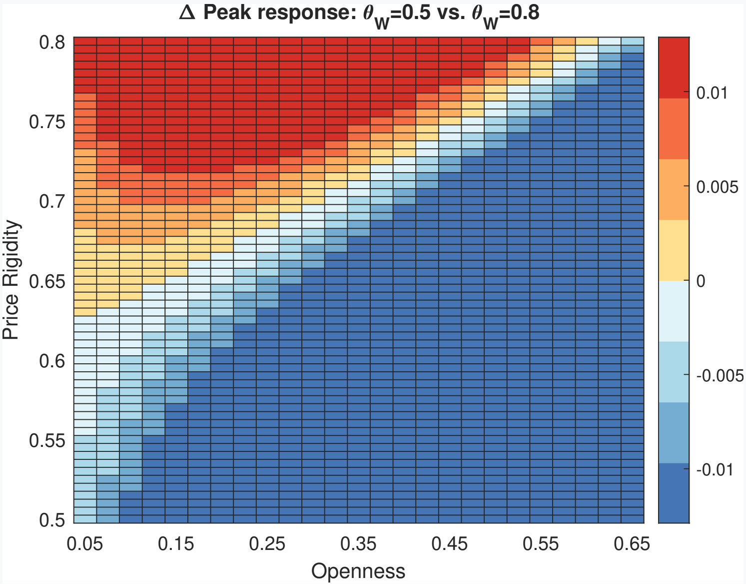
Calibration

Back

Parameter	Value	Description
λ	0.3	HtM share
α	0.23	Complement of the labor share
β	0.99	Quarterly discount factor
σ	1.0	CRRA utility coefficient
φ	2.0	Curvature of labor disutility
ϵ_H	4.3	Elasticity of substitution (goods)
ϵ_W	4.3	Elasticity of substitution (labor)
θ_H	0.8	Price rigidity
θ_W	0.8	Wage rigidity
ν	0.33	Openness
η	[0.5,1,2]	Trade elasticity of imports
η^*	[0.5,1,2]	Trade elasticity of exports
ρ_i	0.9	Persistence of shocks

Peak responses - Foreign demand shock

Back



HANK - Foreign demand shock

▸ Back