

# **Discussion:** Shocks, Frictions, and Inequality in US Business Cycles

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# Summary

**QI:** Does heterogeneity affect the BC?

**QII:** Drivers of (income) Inequality over BC?

## **This work:**

- ▶ Combine HANK + SW
- ▶ Bayesian estimation
- ▶ Analyze IRFS & historical decomposition

# Key Results

**QI:** Does heterogeneity affect the BC? ◀

**QII:** Drivers of (income) Inequality over BC?

- ▶ HANK recessions primarily demand driven
- ▶ RANK recessions primarily supply driven

# Key Results

**QI:** Does heterogeneity affect the BC?

**QII:** Drivers of (income) Inequality over BC? ◀

- ▶ Income uncertainty shocks most important driver
- ▶ Inequality is countercyclical
- ▶ Some importance of markup shocks

# Appraisal

- ▶ Important contribution!
- ▶ HANK literature widely acknowledged
- ▶ Time to bring it to the data
- ▶ Technically very challenging (hard, also computationally!)

## Minor remarks

- ▶ Not actually S&W model
  - ▶ S&W is about endogenous persistence  $\Rightarrow$  estimation problematic
- ▶ One-sided HP
  - ▶ strong assumptions implied
- ▶ Likelihood/model comparison?
  - ▶ RANK vs TANK (specification matters)
  - ▶ TANK vs HANK
  - ▶ NK Phillips Curve

Parameter	RANK	TANK	HANK
$\delta_2/\delta_1$	4.194	1.254	0.528
$\phi$	0.214	4.089	1.440
$\kappa$	0.096	0.092	0.062
$\kappa_w$	0.041	0.073	0.024

# Major remarks I.: Decompositions

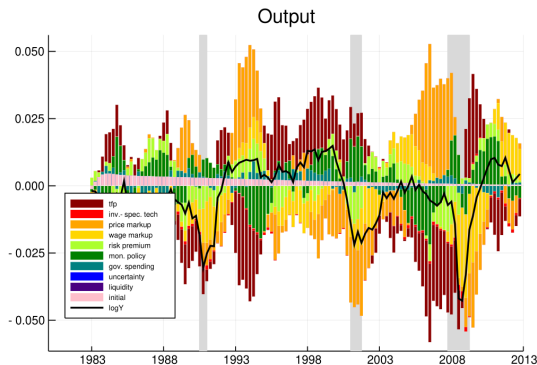


Figure: GDP (RANK)

Puzzles:

- ▶ Many counteracting forces in HANK (but  $\kappa_{\text{HANK}} < \kappa_{\text{RANK}}$ )
- ▶ GFC due to fall in TFP (both models)?

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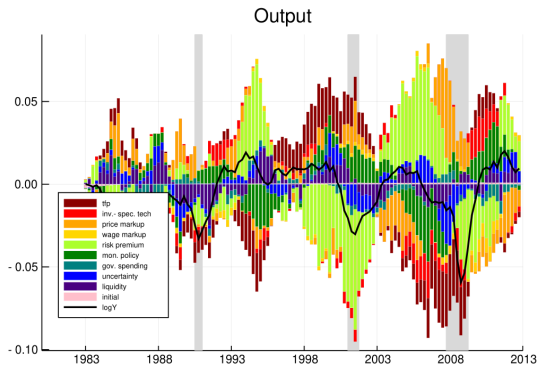


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# Main remark I.: Explanation – ZLB?

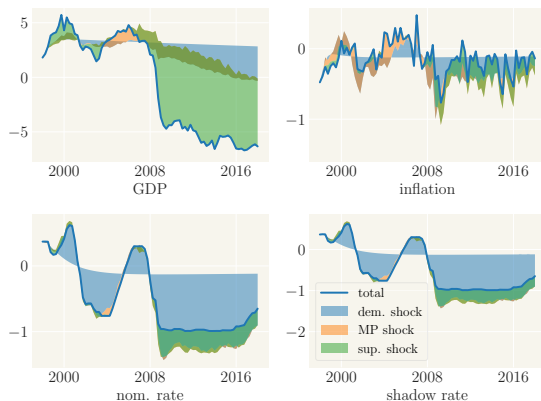


Figure: Filtering without ZLB (own work)

- ▶ Estimation/Filtering with endogenous ZLB alters shock decomposition
- ▶ Growth rates (instead of HP) & endogenous ZLB provide more meaningful decomposition
- ▶ HP filtered  $R_t$ ?

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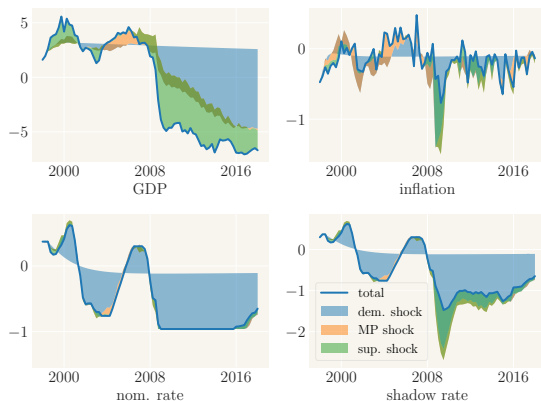


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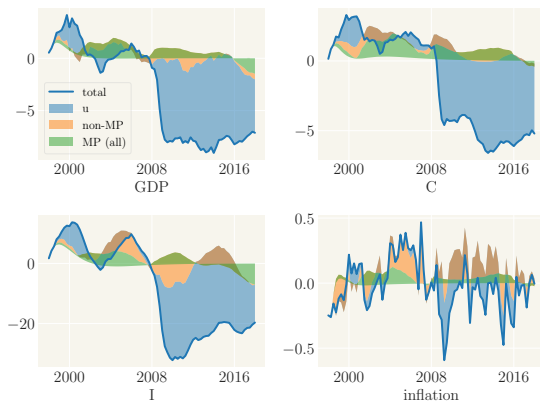


Figure: Decomposition estimated SW with ZLB (own work)

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- ▶ HP filtered  $R_t$ ?

## Main remark II.: Decomposition of inequality

- ▶ **Result:** inequality driven by idiosyncratic income risk
- ▶ **But:**
  - ▶ Inbuilt feature of model?
  - ▶ Jeff Bezos, Bill Gates & Warren Buffet very risk averse?
- ▶ For improved insight:
  - ▶ Inequality must be an observable
  - ▶ Model must contain different explanation mechanisms
- ▶ Probably hard:
  - ▶ Gini vs. top shares
  - ▶ Piketty/Saez/Zucman data subject to strong measurement errors
  - ▶ Requires very complete (complex) model

## Major remarks II.: Drivers of inequality?

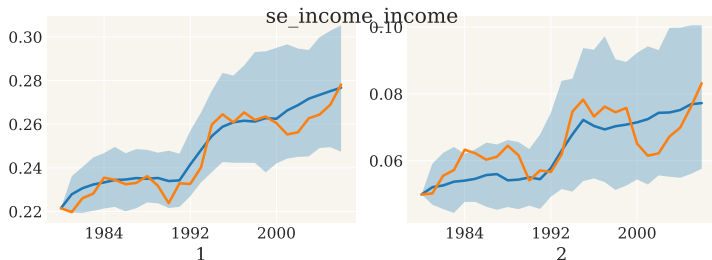


Figure: Swedish income shares explained by taxes (own work<sup>1</sup>)

- ▶ **Large literature:** variations in labor share, Piketty's  $r - g$ , superstar shocks, redistribution, ...
- ▶ Much empirical research on impact of MP & GFC on inequality
  - ▶ Probably: inequality  $\Rightarrow$  BC
  - ▶ Probably not: BC  $\Rightarrow$  inequality

<sup>1</sup>Impose distribution, solve Fokker-Planck, assume drift/diffusion of polynomial form, estimate coefficients, posterior draws.

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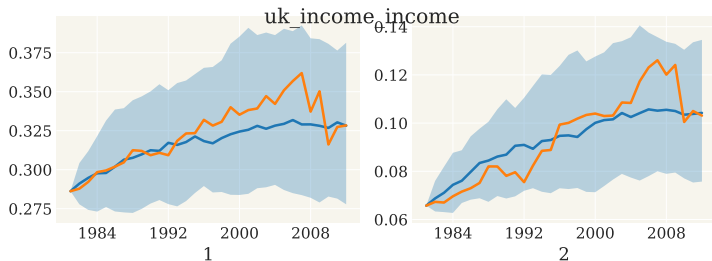


Figure: UK income shares explained by taxes (own work<sup>1</sup>)

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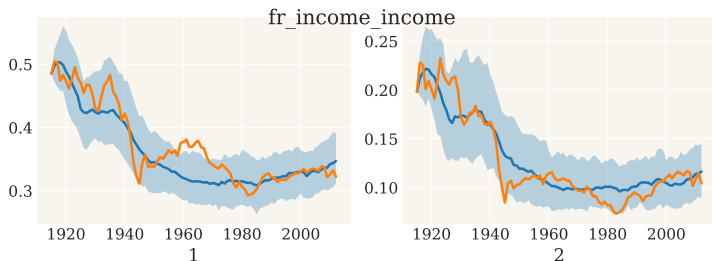


Figure: French income shares explained by taxes (own work<sup>1</sup>)

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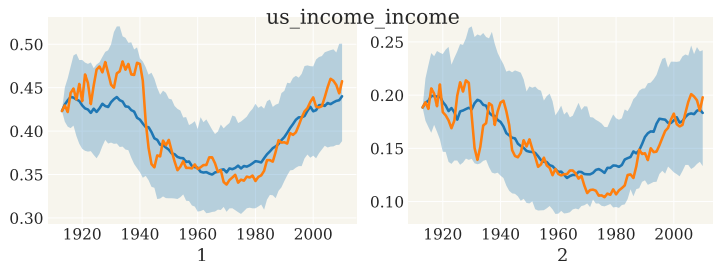


Figure: US income shares explained by taxes (own work<sup>1</sup>)

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**Thank you for your attention!**