Concerted Efforts?
Monetary Policy and Macro-Prudential Tools

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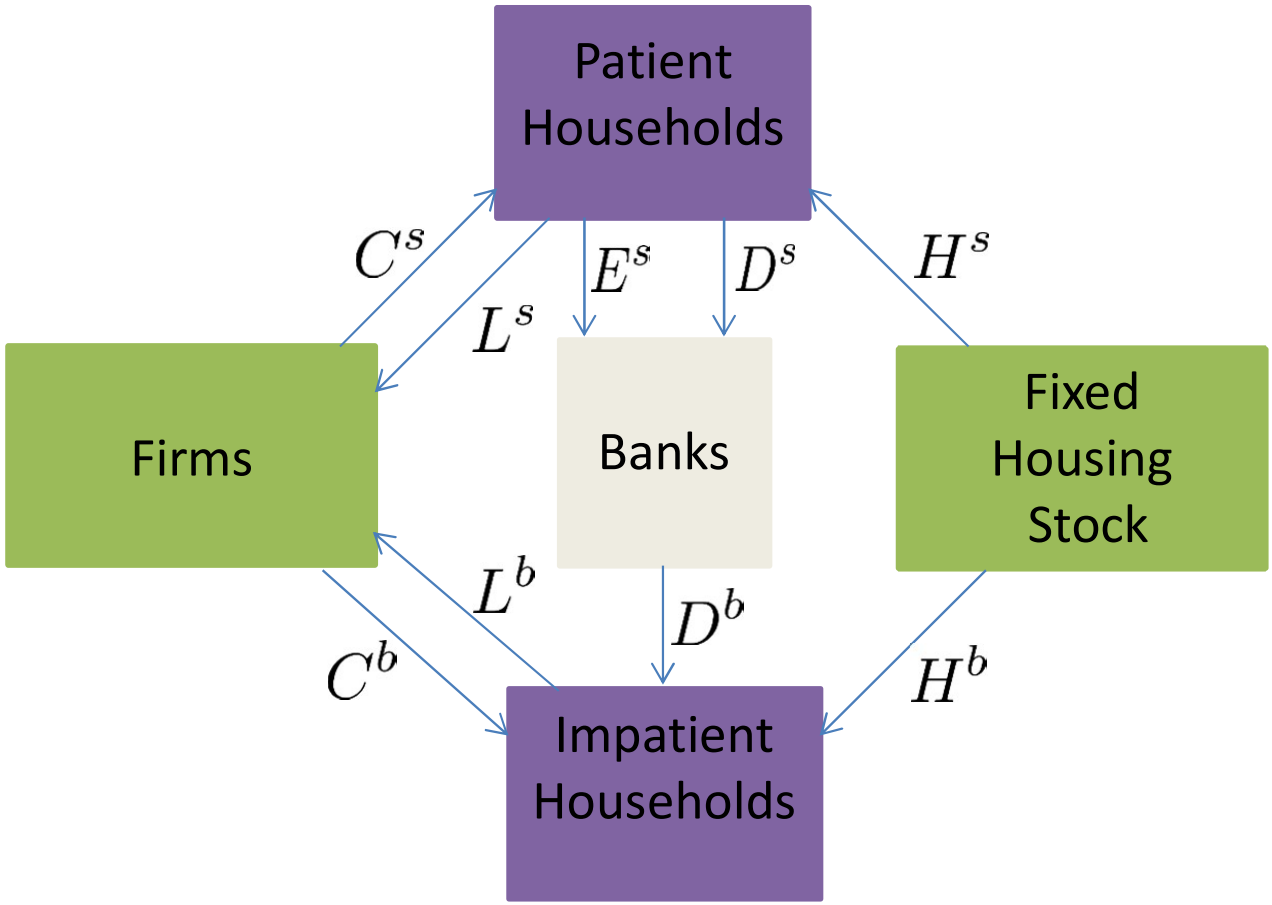
Motivation

Aim:
Find optimal coordination of monetary and macroprudential policies

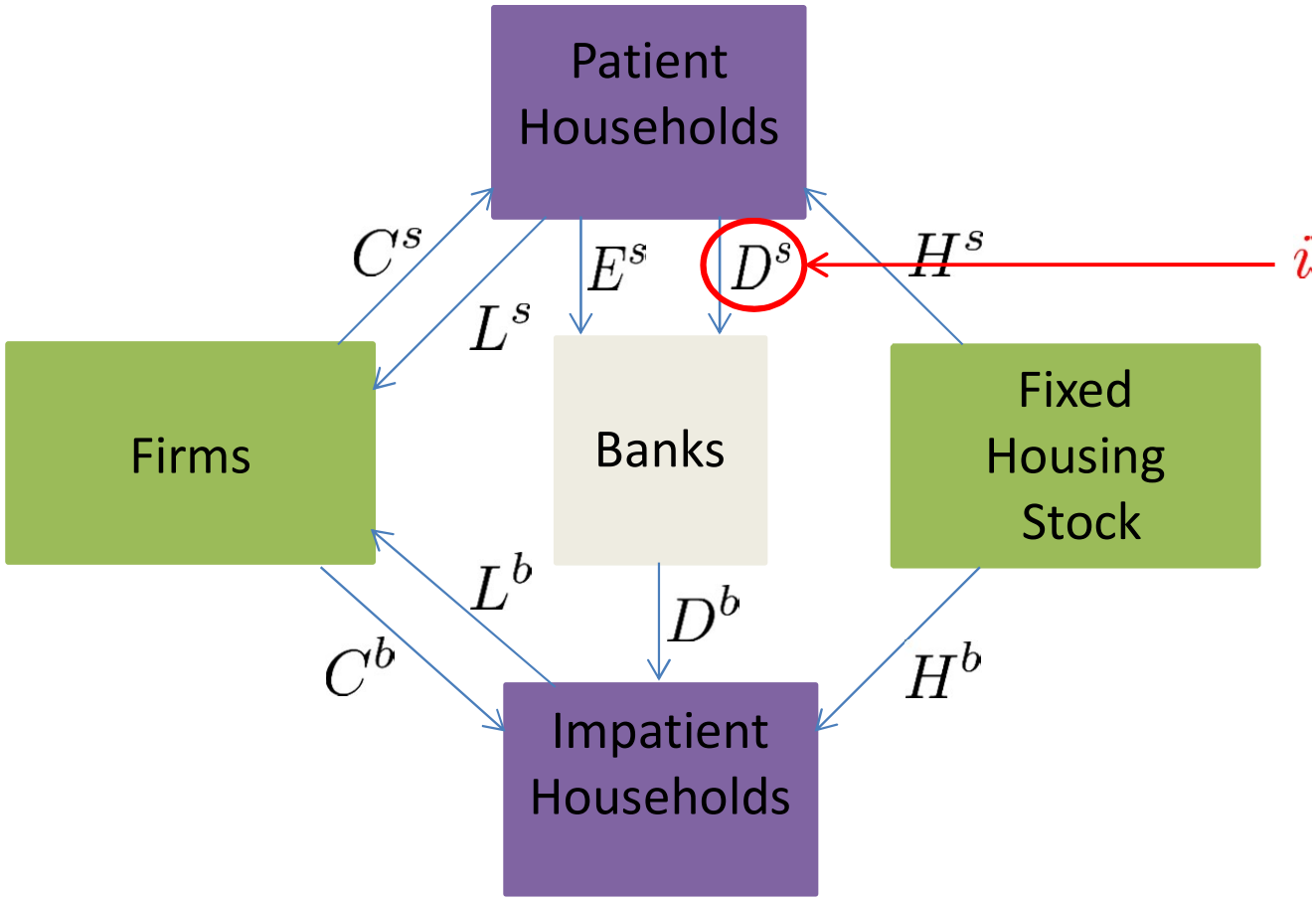
Method:
Authors develop DSGE model with housing market, monetary plus macroprudential policy tools, and derive welfare function

Conclusion:
Complete stabilization not possible in general, but macroprudential tools can help considerably during debt-deleveraging episodes

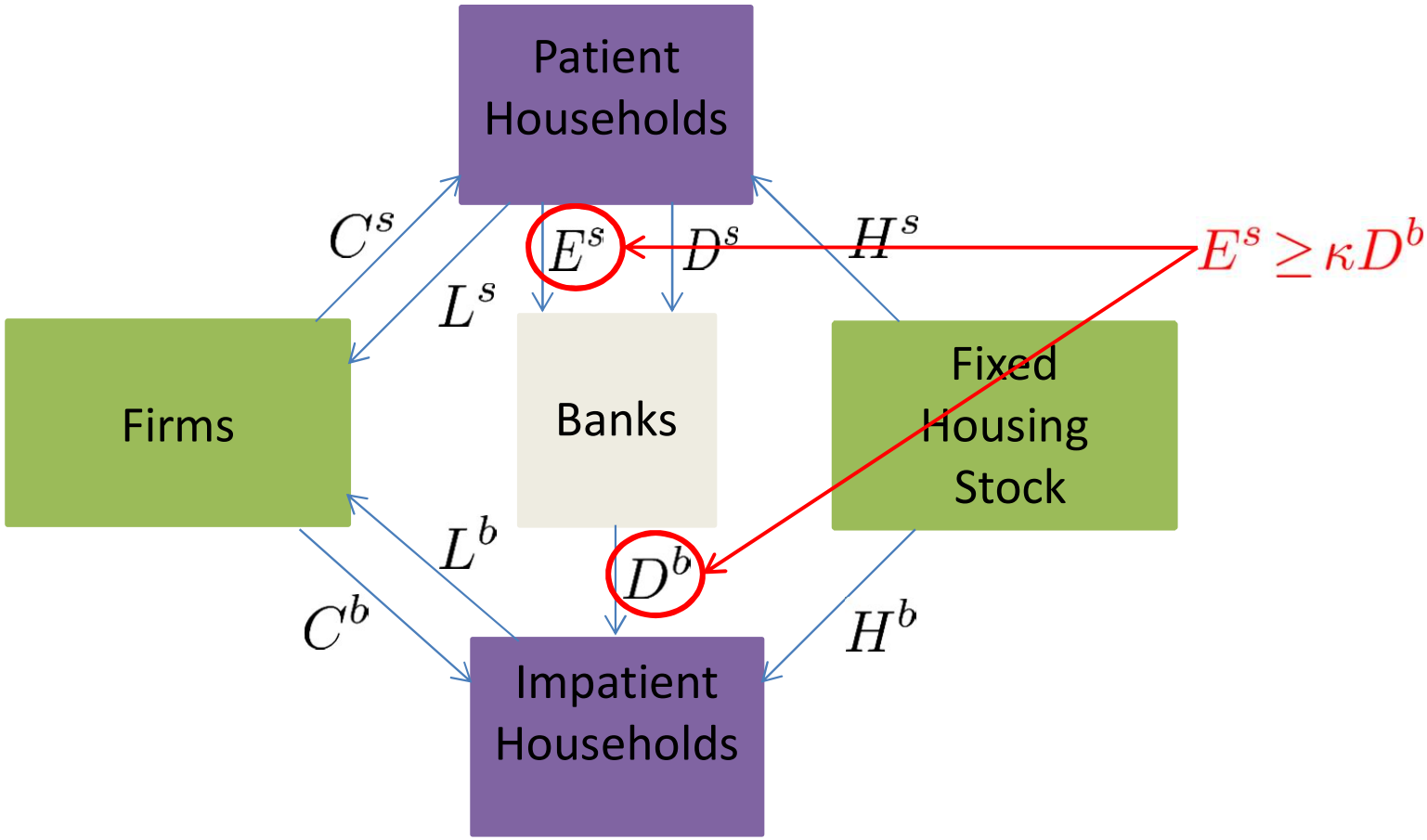
Model setup


Patient Households
C^s
E^s
D^s
H^s
L^s
Firms
Banks
Fixed Housing Stock
L^b
D^b
C^b
H^b
Impatient Households

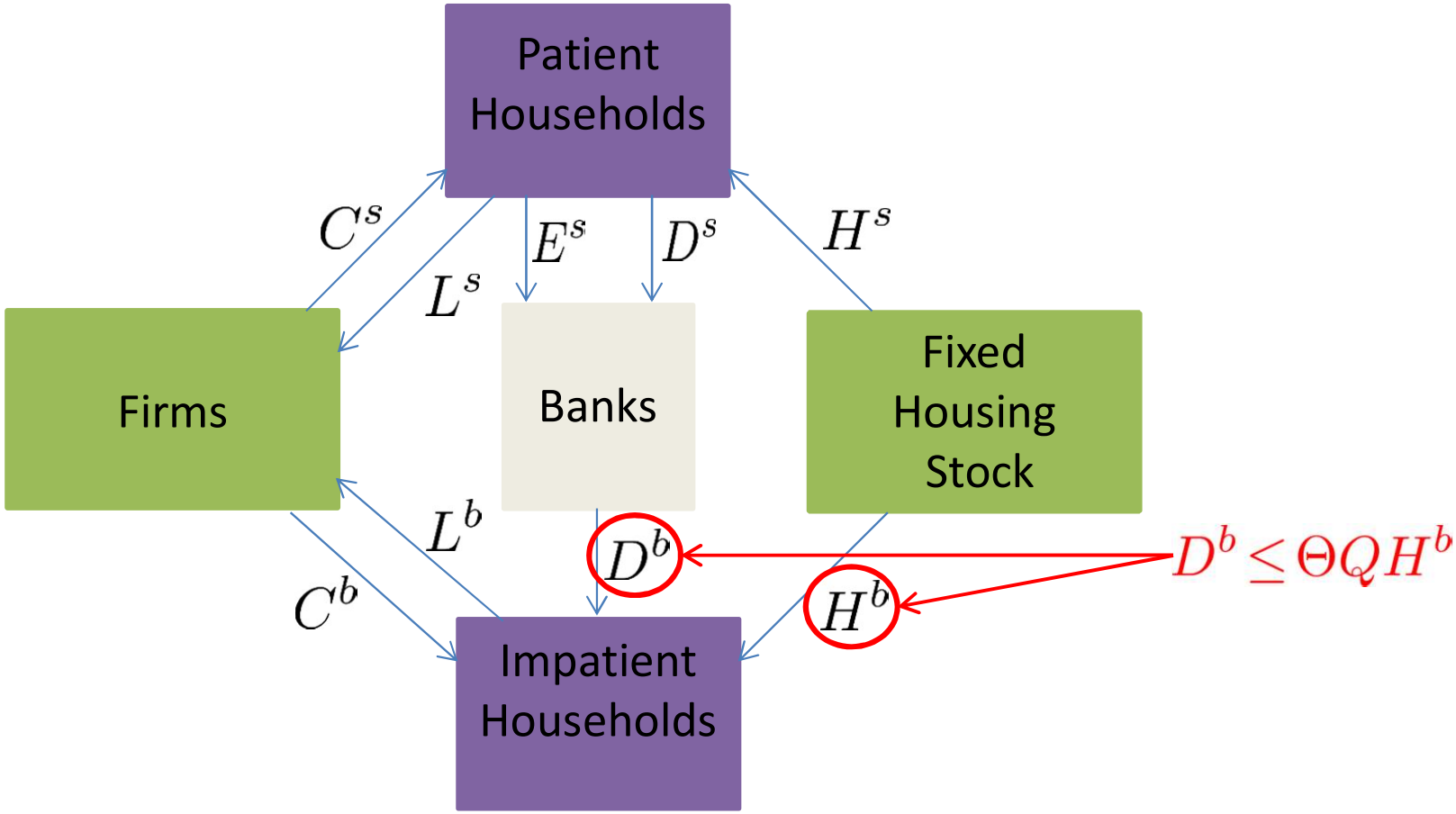
Monetary policy



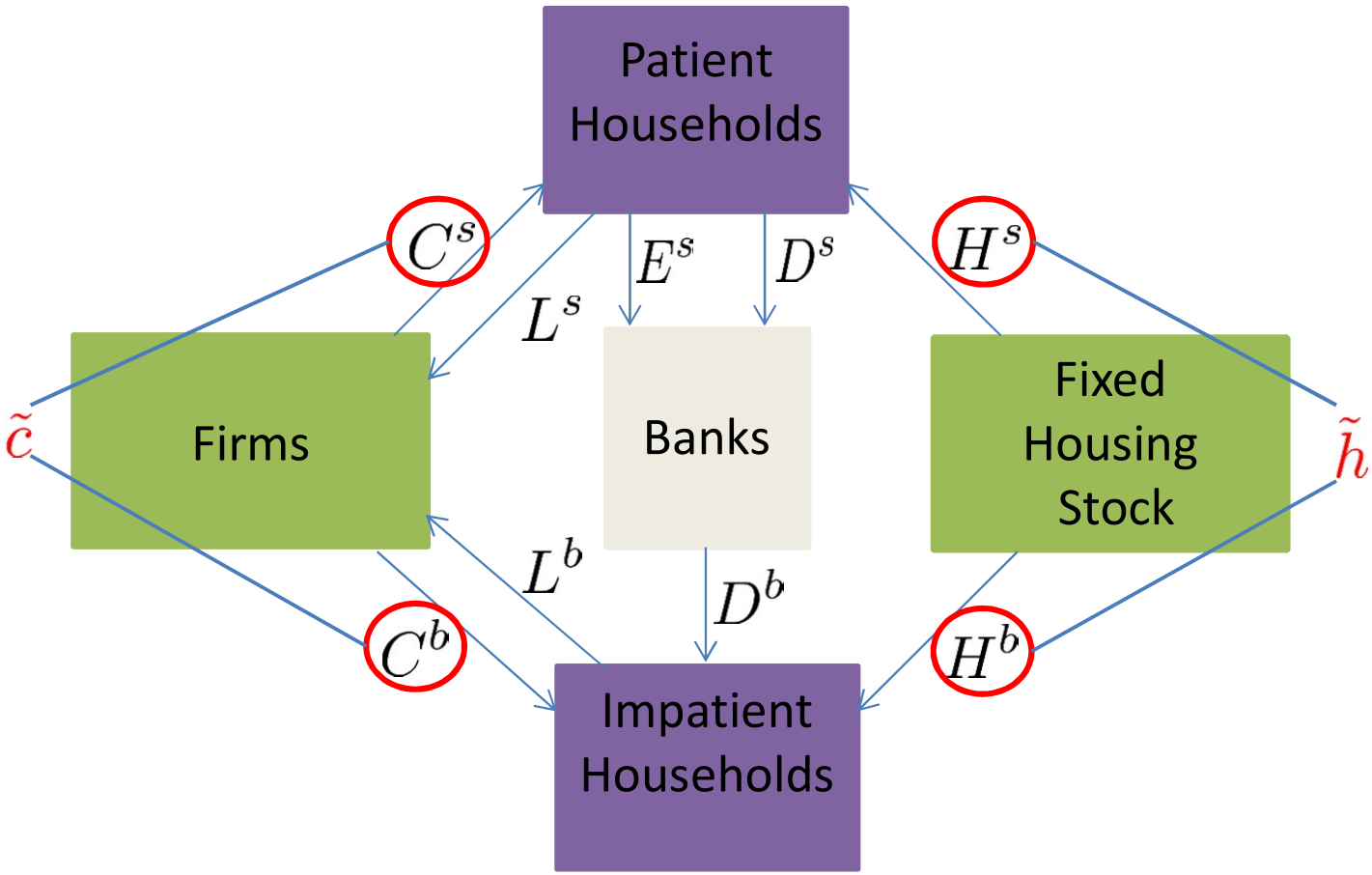
Macropru: equity ratio



Macropru: loan-to-value ratio



Macropru: consumption and housing gaps



Steady State

Part of population impatient
$\rightarrow$ Savers want to save, borrowers to borrow more

Not possible because of borrowing constraint
$\rightarrow$ Borrowers at constraint in steady state

Taxes and subsidies such that $c^b = c^s$ and $h^b = h^s$

Debt cycle

Series of unexpected positive housing preference shocks

- House price increases, impatient HHs increase borrowing
- Borrowers have incentive to buy more housing, relaxes constraint

Unexpected negative housing preference shock

- House price collapses, impatient HHs restrict consumption
- Patient HHs get suddenly their funds back, want to save
- Real interest rate would have to fall to close output gap

$\Rightarrow$ Rigid prices and ZLB: real interest rate too high, demand (Y) low

Alternative (discretionary!) policies

Pure inflation targeting
Instruments: i. Objectives: x, π
$\rightarrow$ Works well

Leaning against the wind
Instruments: i. Objectives: x, π, κ, $\tilde{c}$, $\tilde{h}$
$\rightarrow$ i moves a lot, large output, consumption, and housing gaps at crash

Macroprudential leadership
Instruments: θ, κ | i. Objectives: κ, $\tilde{c}$, $\tilde{h}$ | x, π
$\rightarrow$ Prevents crash via usage of LTV

Full coordination
Instruments: i, (θ), κ. Objectives: x, π, κ, $\tilde{c}$, $\tilde{h}$
$\rightarrow$ LTV ratio very powerful, otherwise little better than LATW

Comments

Coordination of monetary and macroprudential policy
important and topical question

Rich model with skillful analytical derivations

Derivation of loss function very useful contribution

Extensive documentation of calculations and solution mechanism

Interesting conclusions

However, some critical points
(might apply to related papers as well)

Policy maker

Policy maker's objective function:

$$\mathbb{W}_0 = \mathbb{E}_0 \left(\sum_{t=0}^{\infty} \beta_s^t [\tilde{\xi} U_t^b + (1 - \tilde{\xi}) U_t^s] \right)$$

Comment 1: policy maker resembles Wolfgang Schäuble

- Discounts both utilities with same β_s
- Knows better what is good for borrowers than borrowers
- Would create friction, if it didn't exist (does it?)

Objective of policy maker

Resulting loss function of policy maker (PM):

$$\mathcal{L}_0 \propto \frac{1}{2}\mathbb{E}_0 \sum_{t=0}^{\infty} \beta_s^t (\underbrace{x_t^2 + \lambda_\pi \pi_t^2}_{\text{Standard}} + \underbrace{\lambda_\kappa \kappa_t^2 + \lambda_c \tilde{c}_t^2 + \lambda_h \tilde{h}_t^2}_{\text{'Macroprudential'}})$$

Diminishing MUs and same β: PM targets $c^b = c^s$ and $h^b = h^s$

Comment 2: Wolfgang Schäuble cares only about equal housing

- $\sigma = 1$, $\sigma_h = 25$ (very concave)
- Justification: approximate habit formation of Guerrieri and Iacoviello (2017), but strong implications for policy

PM reduces LTV ratio massively during housing boom

Borrowers are forced to *deleverage* during boom to reach $\tilde{h} = 0$

Motivation of policy maker

Comment 3: Policy is not macroprudential

> ECB homepage: *Macroprudential authorities monitor the financial system and identify risks and vulnerabilities. Policies addressing such risks and vulnerabilities can be put in place and limit them from building up further and spreading across the financial system.*

No financial instability, default, systemic risk, mispricing or bubbles
(s. Miguel)

Purely distributional reasons for LTV $\downarrow$

E.g., macropru policy sets bank equity briefly to 0 in one scenario
Financial instability: too low cap. req. /too high LTV ratios impossible

Moreover, real effects modest: debt $\downarrow$ by 15%, house prices by 30%
$\rightarrow$ output gap down by 2%

Evaluation of risk

> *Macroprudential policies should help ensure that everyone takes a cautious approach to risks that could become systemic, that is, risks related to the whole financial sphere.*

Risk that future shocks cause ZLB to bind not taken into account b/c of solution method

$\rightarrow$ No precautionary savings, no precautionary policy (s. Sylvain)

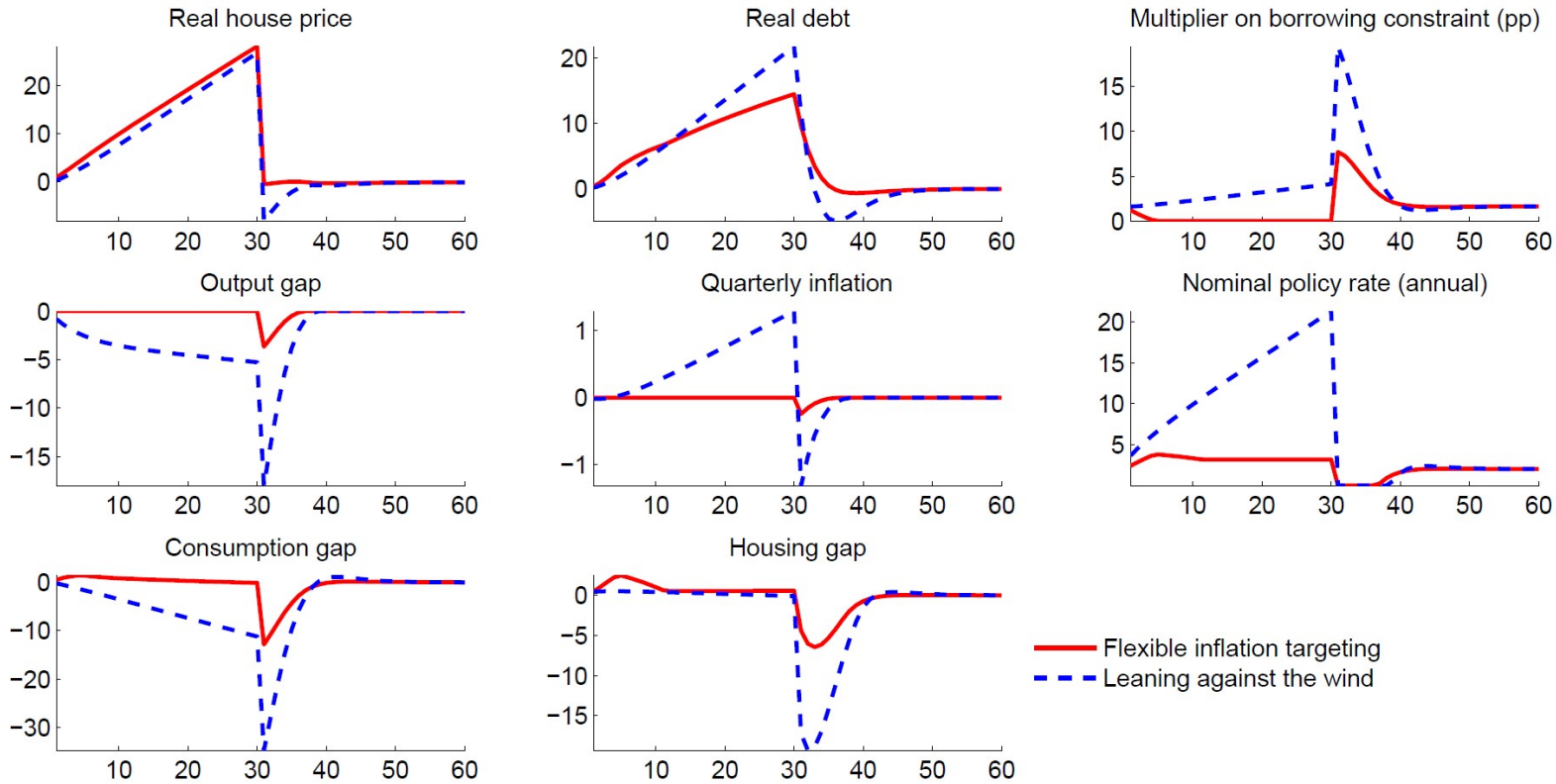
$\Rightarrow$ Policy that targets distribution without correctly evaluating risk

$\neq$ Macroprudential policy

No surprise that MP not suitable to address distributional issues

Appropriate taxes in model, but only to eliminate st. st. distortions

Example: leaning against the wind



Policy maker cares only about $\tilde{h}$ (not $\pi, \tilde{y}, \tilde{c}$)

Doesn't take risk into account: clearly suboptimal behavior

Inclusion of $\tilde{h}, \tilde{c}$ in loss function creates fluctuations in $\tilde{h}, \tilde{c}$

Bank capital requirements

Comment 4:
Analysis tilted towards LTV and against bank equity requirements

(Ad-hoc) equity adjustment costs are actually deviation costs

Different to LTV, deviations (up and down!) from some value cause costs and spread

High equity ratio has no benefit

Modeling trick? Should not be in welfare function

Housing stock fixed:
reducing LTVs does not reduce housing investment

Minor points

Check empirical validity of model

There are more groups that cannot perfectly insure among each other
$\rightarrow$ CB should not consider only housing market

Calibration mix between US and UK, but results represent US crisis

Role of slow-moving borrowing constraint

Some risk sharing in case of defaulting borrowers if equity was state-dependent

Even without collateral constraint incomplete insurance

Some shocks and parameters (σ) not discussed in main text
Calibration section omits some calibrations

Conclusion

Important paper on important topic

Using welfare function instead of ad-hoc loss function large step

Introduction of financial instability would enrich analysis even more