Quantitative Easing in a Heterogeneous Monetary Union

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Conference theme: Monetary policy trade-offs in a heterogeneous currency area

One Policy — Two Very Different Households and Countries

“Imagine two households in the euro area. One in Germany, one in Greece. The ECB announces a large-scale bond-buying programme — the same policy, for everyone, at the same time. But do these two households benefit equally?”

One Policy — Two Very Different Households and Countries

Heterogeneous transmission of Monetary Policy that depends on : **who you are** **where you live**

Within-country heterogeneity – different households within a country

Cross country heterogeneity – debt structure:

1. **debt-to-GDP,**
2. **maturity of the debt (short-term versus long-term)**
3. **liquidity**

Two Building Blocks

1 **Local Projections** — Jordà (2005), impulse responses to QE shocks across heterogeneous countries

2 **Two-country TANK model** — core vs. periphery, optimisers & hand-to-mouth households

Financial frictions — Kiyotaki & Moore (2016) resaleability constraint on long-term bonds

Key innovation: Bond resaleability = ϕ varies across countries — not all bonds are equally liquid. Core bonds trade freely; periphery bonds are illiquid. This governs how much QE actually reaches the real economy.

▶ ***Presented today***

The resaleability parameter ϕ is the key lever — it determines how much of QE's force reaches investment and output

The Portfolio Rebalancing Channel

QE → ↓ long-term yield r^l → Portfolio rebalancing → **↑ Investment · Capital · Output**

Core — liquid bonds ($\phi = 0.8$)

Bonds easy to sell or use as collateral

Households freely rebalance toward capital

Strong effects on investment & output

Periphery — illiquid bonds ($\phi = 0.6$)

Households forced to keep bonds on balance sheet

Rebalancing toward capital is constrained

Limited effects on investment & output

ϕ — bond resaleability — governs the amplitude of portfolio reallocation

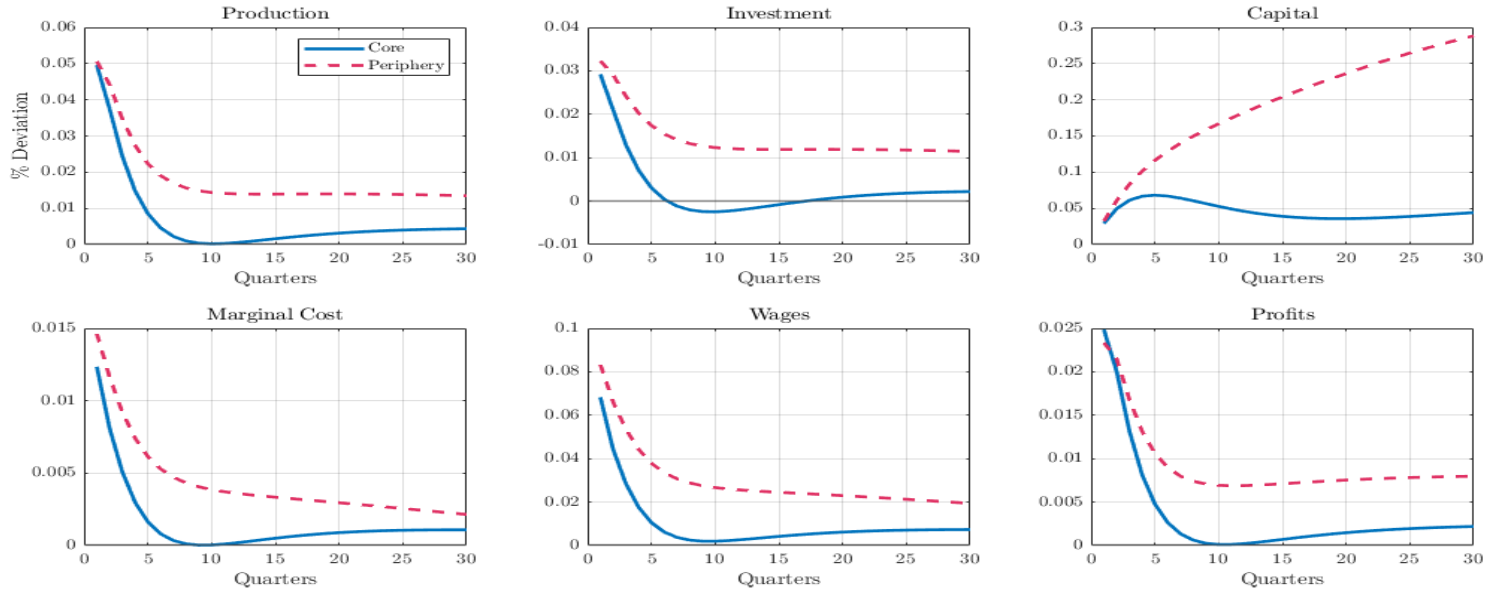
RESEARCH QUESTION

Does Heterogeneity Shape the Transmission of QE? If yes, what are the effects of QE?

Scenario 1	Scenario 2	Scenario 3
Benchmark	**Within-country**	**Cross-country**
Symmetric monetary union No heterogeneity	Different share of hand-to-mouth households	Different debt structure (ratio, maturity, liquidity)
	▶ *Presented today*	▶ *Presented today*

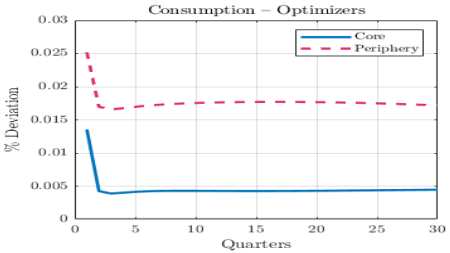
Framework: Two-country TANK + Financial frictions (Kiyotaki & Moore, 2016) + Local Projections (Jordà, 2005)

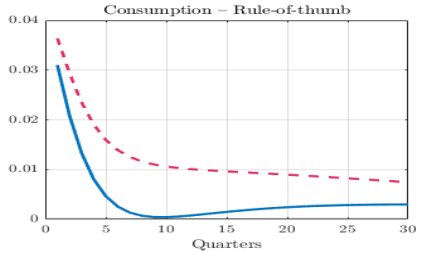
More Hand-to-Mouth → Stronger QE Response

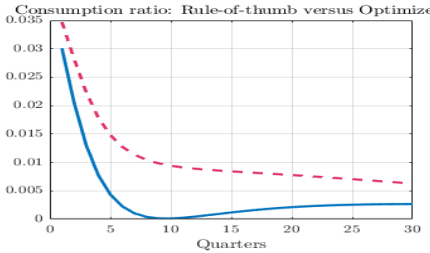


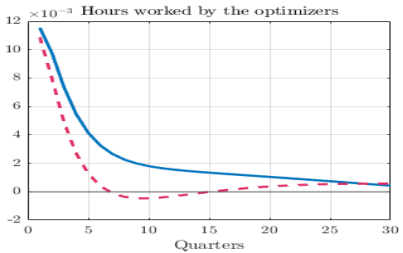
↑ η ⟹ stronger output response + larger short-run inequality compression

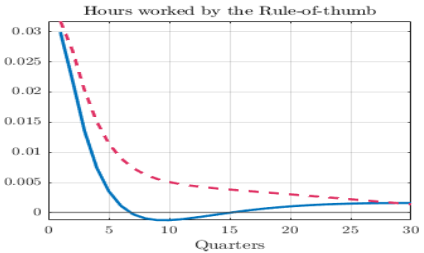
More Hand-to-Mouth → Stronger QE Response











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SCENARIO 2 — WITHIN-COUNTRY HETEROGENEITY

More Hand-to-Mouth → Stronger QE Response

QE → ↓ r^l → Labour demand & supply ↑ → HtM wages ↑ → Immediate spending → **Aggregate demand ↑**

Core ($\eta = 0.25$)

Few hand-to-mouth households

Most households smooth consumption intertemporally

Moderate aggregate demand response

Smaller short-run inequality compression

Periphery ($\eta = 0.45$)

More hand-to-mouth households

Income gains translate immediately into spending

Stronger aggregate demand response

Larger short-run inequality compression ✓

$$\uparrow \eta \implies \textit{stronger output response} + \textit{larger short-run inequality compression}$$

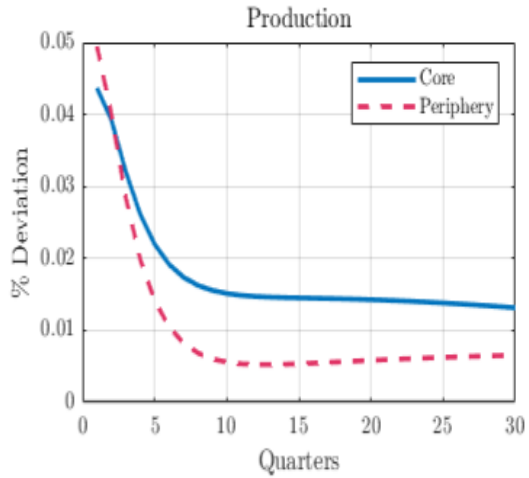
SCENARIO 3 — CROSS-COUNTRY HETEROGENEITY

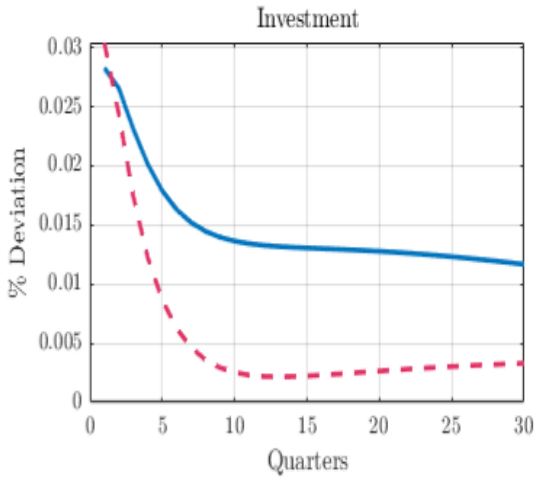
Debt Structure Determines Who Benefits More

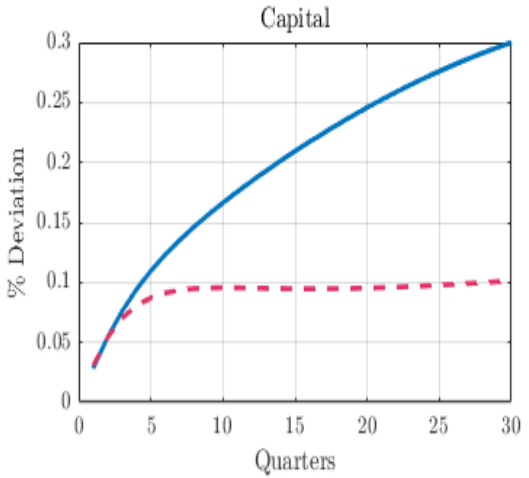
Calibration (based on Eurozone data)

Parameter	Core	Periphery
Debt-to-GDP	80%	120%
ST / LT ratio (ϑ)	0.25	0.40
Bond liquidity (ϕ)	0.80	0.60

Debt Structure Determines Who Benefits More







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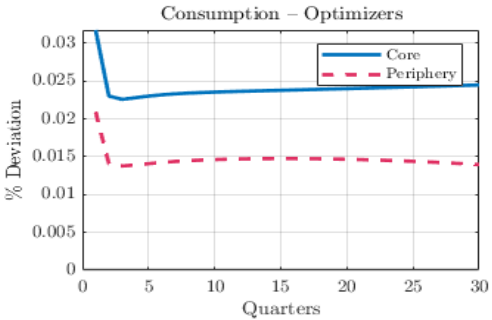

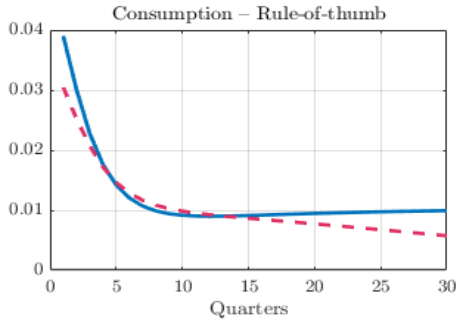

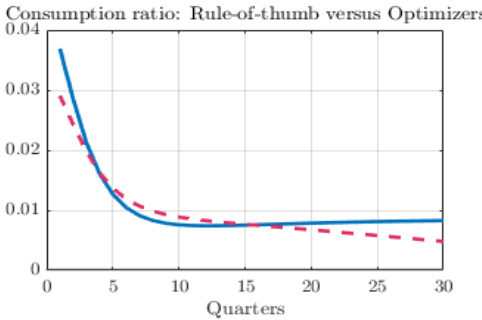

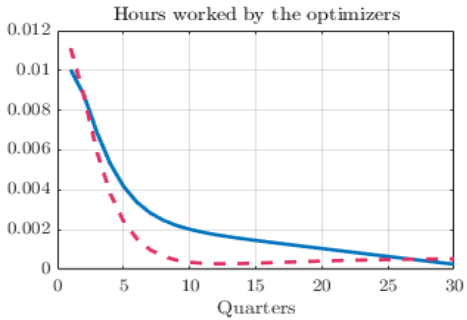

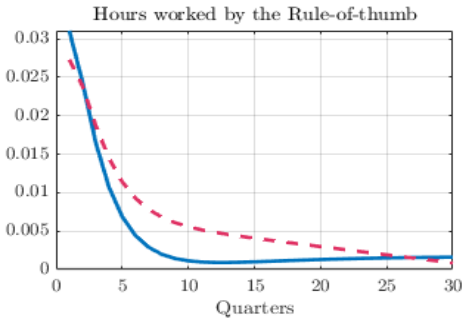

Two Channels — Opposite Directions

Within-country channel

Favours the periphery

Driven by hand-to-mouth share η

$\uparrow \eta \rightarrow$ stronger demand multiplier

$\uparrow \eta \rightarrow$ larger inequality compression

Periphery ($\eta = 0.45$) benefits more

vs.

Cross-country channel

Favours the core

Driven by bond liquidity ϕ and maturity ϑ

$\uparrow \phi \rightarrow$ larger portfolio reallocation

$\downarrow \vartheta \rightarrow$ reallocation flows into capital

Core ($\phi = 0.8$, $\vartheta = 0.25$) benefits more

Which dominates? Depends on the relative size of η, ϕ, and ϑ — next on the research agenda

POLICY IMPLICATIONS

Uniform QE is Not Neutral

1 **Internalise cross-country asymmetries**
The allocation of purchases across country bond markets matters — not just total volume. Uniform programmes are not distribution-neutral.

2 **Prefer targeted, calibrated measures**
The PEPP's flexible reinvestment mechanism is a step in this direction. This model provides a theoretical foundation for heterogeneity-aware instrument design.

3 **Coordinate with fiscal authorities**
The periphery's disadvantage reflects debt composition and bond market depth — structural features monetary policy alone cannot address.

Symmetric logic to the TPI (2022): if tightening can fragment, easing can diverge too

CONCLUSION

Heterogeneity Shapes QE — Both Ways

① **QE is expansionary — but asymmetrically so**
Within-country heterogeneity (η) amplifies output gains and inequality reduction more in the periphery.

② **Cross-country heterogeneity amplifies divergences**
Bond liquidity (ϕ) and debt maturity (ϑ) give the core a structural advantage via the portfolio rebalancing channel.

③ **Policy design should be heterogeneity-aware**
Uniform large-scale programmes risk widening the core–periphery gap. Targeted, calibrated instruments matter.

Next: external positions (trade balance, NFA) + empirical validation via Local Projections on EMU data

Should the ECB explicitly internalise cross-country asymmetries when calibrating asset purchases?

Many thanks!
Link to my website with the last version of the paper