

MONETARY UNIONS WITH HETEROGENEOUS FISCAL SPACE

Marco Belfiore
LSE

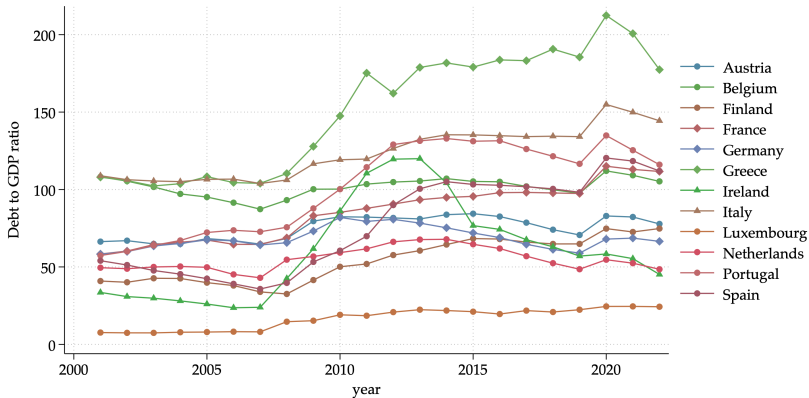
Adrien Couturier
LSE

Rustam Jamilov
Oxford

EEA

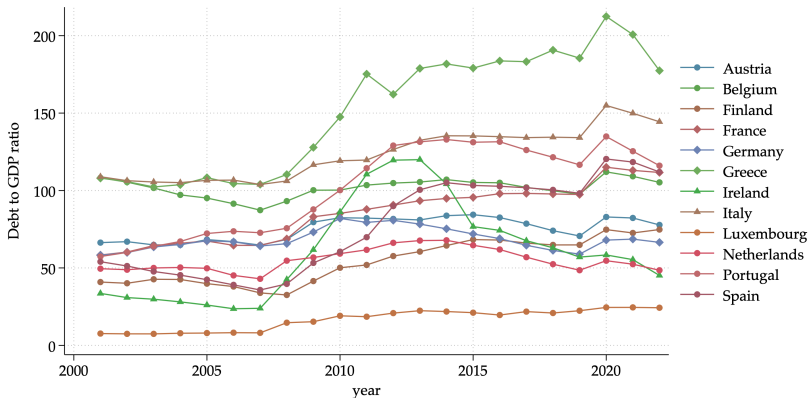
August 27, 2024

EUROZONE COUNTRIES HAVE VERY DIFFERENT LEVELS OF PUBLIC DEBT



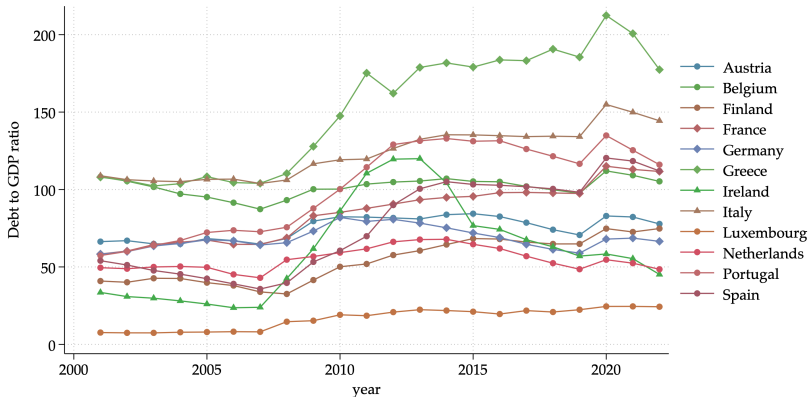
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What are the implications for monetary policy?

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 - ◇ Non-tradability: can study het. response to MP across countries

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- ▶ Central bank faces a **stabilization-synchronization trade-off**
 - ◇ Response of MP to shocks stabilizes average inflation but transmits differently to countries
 - ◇ Which policies can alleviate the trade-off? → study policy proposals

MODEL

- Currency union with countries j , within-country incomplete markets:

$$\max_{\{c_{jit}, a_{jit}\}_{t \geq 0}} \mathbb{E}_0 \sum_{t \geq 0} \beta^t u(c_{jit}, l_{jit}), \text{ s.t. } c_{jit} + a_{jit} = (1 - \tau)w_{jt}e_{jit}l_{jit} + t_{jt} + \frac{1 + i_{t-1}}{1 + \pi_{jt}}a_{jit-1}, a_{jit} \geq \underline{a}$$

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PUBLIC DEBT & MONETARY TRANSMISSION

- ▶ Government's budget constraint + fiscal rule:

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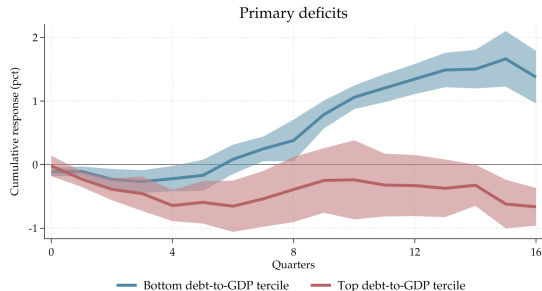
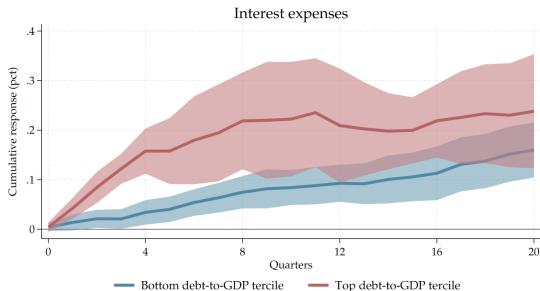
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$$\hat{c}_j \equiv (d \log c_{j1}, d \log c_{j2}, \dots)', \quad (M^r)_{ts} = \frac{\partial \log c_{jt}}{\partial \log(1 + r_{js})}, \quad (M^t)_{ts} = \frac{\partial \log c_{jt}}{\partial \log t_{js}}, \quad (M)_{ts} = \frac{\partial \log c_{jt}}{\partial \log y_{js}}, \quad \hat{s}_j : \text{ToT}$$

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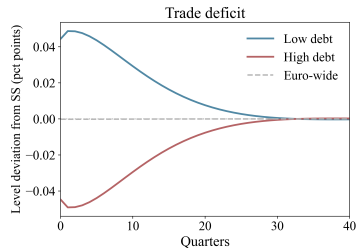
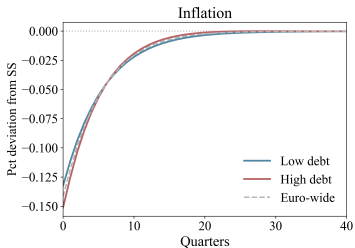
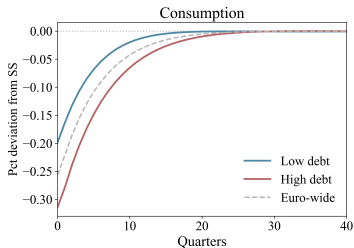
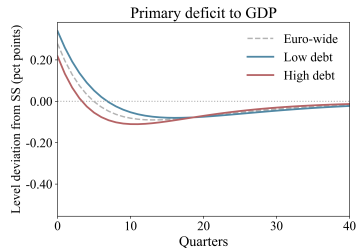
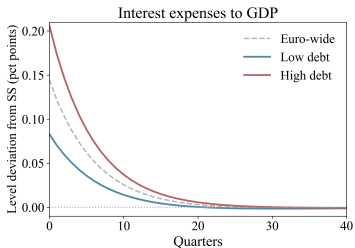
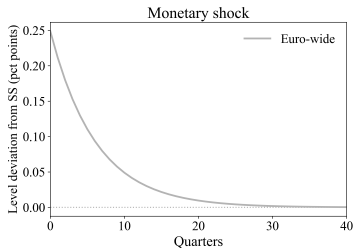
- ◊ High public debt \rightarrow smaller primary deficit response \rightarrow larger consumption response
- ◊ New Keynesian Phillips curve: larger consumption response \rightarrow larger inflation response

INSPECTING THE MECHANISM

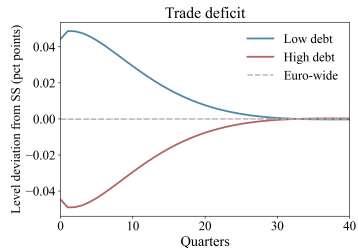
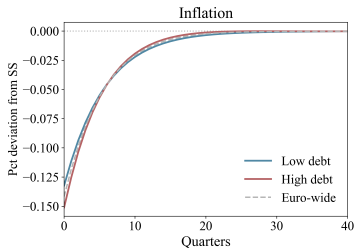
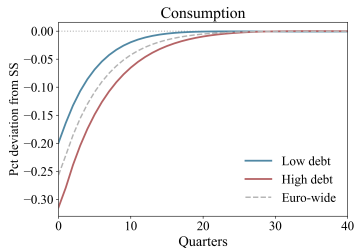
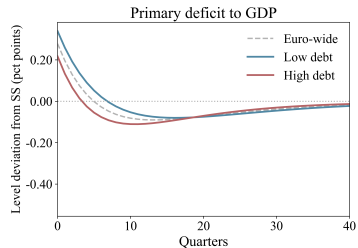
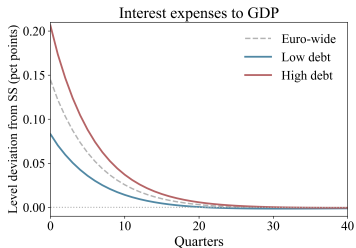
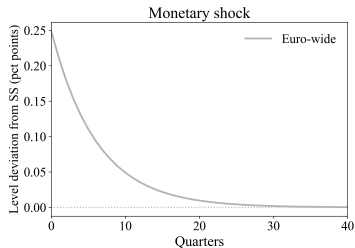
- ▶ Two-countries calibration: Germany vs Italy
 - ◇ Only differ in SS debt-to-GDP ratios (60% vs 134%), identical in all other parameters

- ▶ Calibrate fiscal rules based on Galí and Perotti (2003) $\rightarrow \gamma^L = 1$ and $\gamma^B = 0.07$ ▶ Calibration

INSPECTING THE MECHANISM



INSPECTING THE MECHANISM



Same interest rate change has different effects across countries

BUSINESS CYCLE PROPERTIES FOR DIFFERENT MONETARY STANCES

- ▶ Business cycle properties

- ◊ Discount factor shocks

- ▶ MP stabilizes EZ inflation

- ◊ $i_t = \bar{r} + \phi\pi_t$

- ▶ Dove vs Hawk

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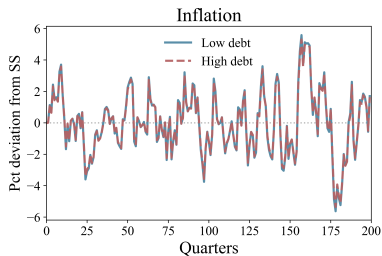
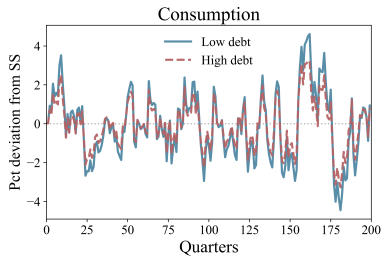
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Dove, $\phi = 1.01$

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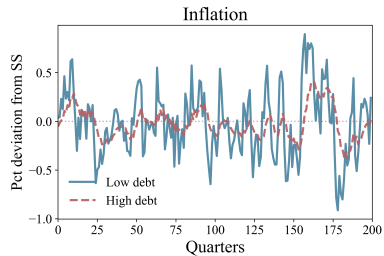
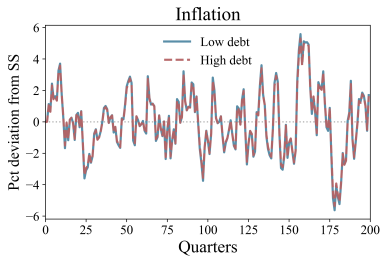
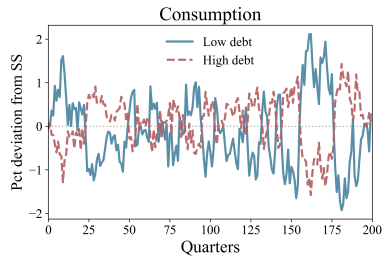
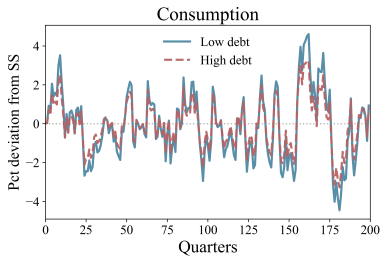
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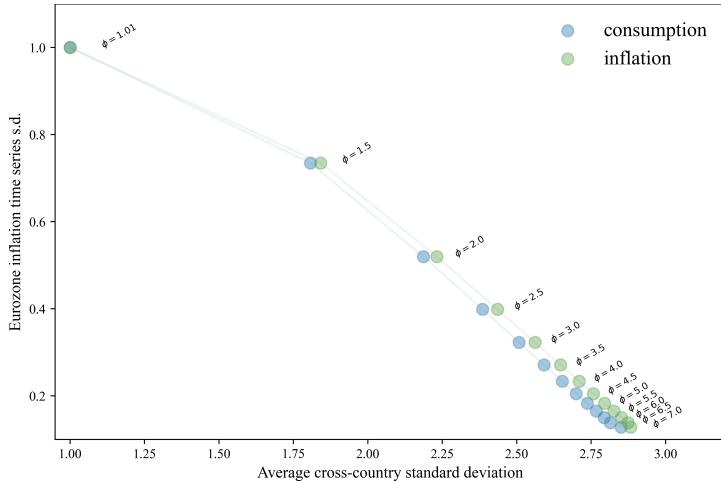
► Dove vs Hawk



Dove, $\phi = 1.01$

Hawk, $\phi = 7$

STABILIZATION-SYNCHRONIZATION TRADE-OFF



Stabilize union-wide inflation vs keep member countries in synch

POLICY EXPERIMENTS

I Deficit caps

II Fiscal union

III Political union

IV Augmented Taylor rule

CONCLUSION

▶ Dispersion in public debt levels across members of a monetary union:

I Leads to **heterogeneous transmission** of MP

II Gives rise to a **trade-off** between stabilization and synchronization for MP

III Deficit caps & fiscal union can't address trade-off, redistributive political union could

Appendix

Parameter	Description	Value	Comment
β	Discount factor	0.98	Standard
σ	Inverse IES	1	Standard
φ	Frisch Elasticity	1	Chetty et al. (2011)
ω	Preference for non-trad. consumption	0.66	Hazell et al. (2022)
α	Preference for non-trad. labor supply	0.66	Hazell et al. (2022)
ν	Cons. elasticity of subs. btw sectors	1.5	Hazell et al. (2022)
ψ	Elasticity of subs. btw tradables	1.5	Equal to ν for exposition
η	Labor elasticity of subs. btw sectors	0.45	Berger et al. (2022)
ρ_e	Pers. of log-productivity process	0.92	Auclert et al. (2021)
σ_e	Std. of log-productivity process	0.6	Auclert et al. (2021)
\underline{b}	Borrowing limit	0	Standard
μ	Union market power	21	Schmitt-Grohé and Uribe (2005)
θ	Wage rigidity	210	Target 0.1 slope of wage NKPC
τ	Income tax rate	30%	Eurozone average
\bar{B}_1/\bar{Y}_1	Debt to GDP in country 1	134%	Italy, 2019 (source: AMECO)
\bar{B}_2/\bar{Y}_2	Debt to GDP in country 2	60%	Germany, 2019 (source: AMECO)
γ^L	Response of deficits to L	1	Galí and Perotti (2003)
γ^B	Response of deficits to debt	0.07	Galí and Perotti (2003)

ACCOUNTING IDENTITY

$$\underbrace{B_t - B_{t-1}}_{\text{Overall deficits}} \equiv \underbrace{D_t}_{\text{Primary deficits}} - \underbrace{r_t B_{t-1}}_{\text{Debt servicing costs}}$$

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