Coordinating Monetary and Financial Regulatory Policies

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European Central Bank

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The views expressed on this discussion are my own and do not necessarily reflect those of the European Central Bank

Introduction

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  Study coordination between monetary and macro-prudential policies

  Emphasis $\rightarrow$ coordination throughout the economic cycle

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SW Coordinated $\succ$ Traditional by 0.07% annual consumption equivalent

Roadmap

- Model economy → building blocks

I. Sluggish nominal price adjustments of firms

→ Calvo (1983)

II. Financial intermediaries good at providing financing to firms, but subject to incentive-compatible leverage constraints

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- Policy exercise → contrast btw traditional and coordinated mandates

  I. Derive the optimal policy under each mandate

  II. Quantitavely assess the costs and benefits from the coordinated mandate relative to the traditional mandate

Model Economy

Building Block I

- Firms produce intermediate goods out of labor and capital services

$$y_{j,t} = A_t l_{j,t}^{\alpha} k_{j,t}^{\alpha} \quad \text{with } j \in [0, 1]$$

$A_t \longrightarrow$ evolves locally stochastically, $dA_t / A_t = \mu_A dt + \sigma_A dZ_t$

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- Firms reset nominal price $p_{j,t}$ sluggishly according to Calvo (1983) $\Rightarrow$

agg. price level $p_t = \left[\int_0^1 p_{j,t}^{1-\varepsilon} dj \right]^{\frac{1}{1-\varepsilon}}$ evolves locally deterministically,

$dp_t / p_t = \pi_t dt + 0 dZ_t$

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$$V_t \equiv \max_{\bar{k}_{f,t}, b_t} E_t \int_t^\infty \gamma e^{\gamma(s-t)} \frac{\Lambda_s}{\Lambda_t} n_{f,s} ds \ ,$$

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LoM	$dn_{f,t} = [a_f r_{k,t} dt + dq_t] \bar{k}_{f,t} - (i_t - \pi_t) b_t dt$

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- Households $\rightarrow$ consume c_t, supply labor l_t, and invest in $-b_t$, $\bar{k}_{h,t}$

Competitive Equilibrium

Definition & Main Results

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binds $\iff \min\{\lambda v_t, \Phi_t\} n_{f,t} < q_t \bar{k}$

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Pecuniary externalities: distributive, binding-constraint, and dynamic

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SW Preferences $u(c, l) = \ln c - \chi \frac{1}{1+\psi} l^{1+\psi}$. Utility flows are:

$$\ln \frac{1}{\omega_t} + \alpha \ln l_t - \chi \frac{1}{1+\psi} l_t^{1+\psi} + (1-\alpha) \ln a_t + \ln A_t + (1-\alpha) \ln \bar{k}$$

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First best $\rightarrow \omega_t = 1$, $l_t = l_* \equiv (\alpha/\chi)^{\frac{1}{1+\psi}}$, $\bar{k}_{f,t} = 1$

Policy Exercise

Traditional Mandate

- Separate objectives and no cooperation $\longrightarrow$ Nash equilibrium

  MoPo $\longrightarrow \max\limits_{i_t} \left\{ PDV \;\; of \;\; \ln \frac{1}{\omega_t} + \alpha \ln l_t - \chi \frac{1}{1+\psi} l_t^{1+\psi} \right\}$

  MacroPru $\longrightarrow \max\limits_{\Phi_t} \left\{ PDV \;\; of \;\; (1-\alpha) \ln a_t \right\}$

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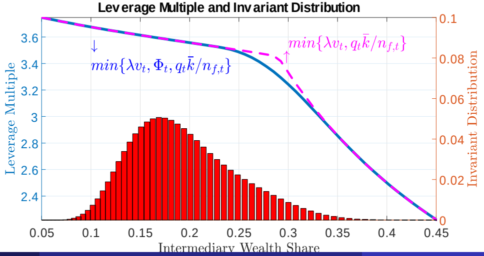
MacroPru $\rightarrow$ replicate constrained efficient Φ_t of flex. price econ.

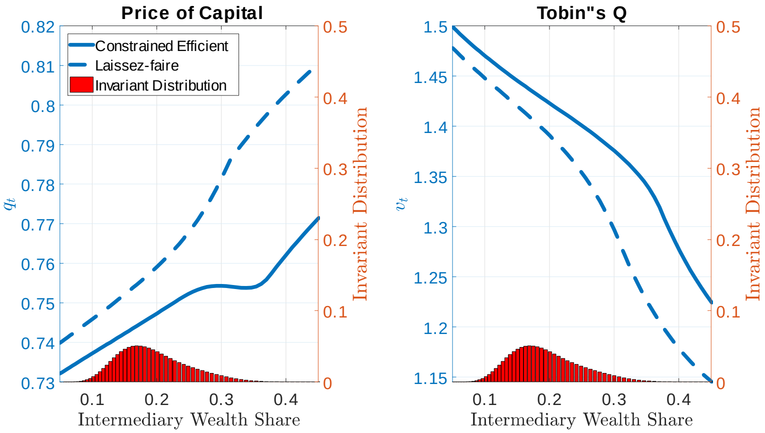
$\Longrightarrow$



Costs and Benefits from Macro-prudential Policy

Flexible Price Economy

$\downarrow$ distributive externality, $\uparrow$ binding-constraint externality



Policy Exercise (cont.)

Coordinated Mandate

- Obj. $\rightarrow \max\limits_{i_t, \Phi_t} \left\{ PDV \ of \ \ln \frac{1}{\omega_t} + \alpha \ln l_t - \chi \frac{1}{1+\psi} l_t^{1+\psi} + (1-\alpha) \ln a_t \right\}$

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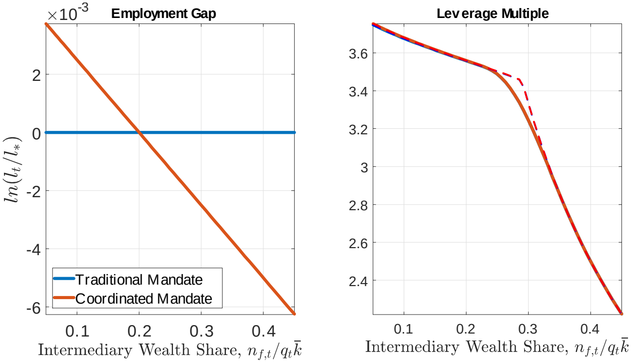

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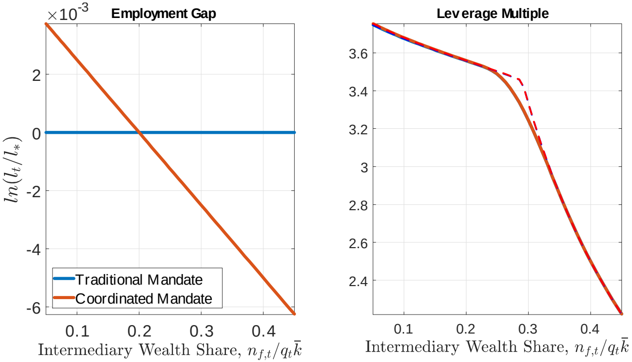

- $a_f \frac{r_{k,t}}{q_t} dt + \frac{dq_t}{q_t} - (i_t - \pi_t)\, dt$, with $q_t \rightarrow PDV \;\; of \;\; r_{k,t}$

- Baseline calibration

Parameter Values

a_h	λ	γ	μ_A	σ_A	α	ε	θ	ρ	ψ	χ
70%	2.5	10%	1.5%	3.5%	65%	2	$\ln 2^{6/5}$	2%	3	2.8

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- Social welfare gains in annual consumption equivalent

Coordinated Mandate over Traditional Mandate

	Present Discounted Value of			
	$\ln \frac{1}{\omega}$	$\ln l^{\alpha} - \chi \frac{l^{1+\psi}}{1+\psi}$	$\ln a^{1-\alpha}$	Ut. Flows
Baseline calibration	−0.04%	−0.00%	+0.11%	+0.07%
... but with $a_h = 60\%$	−0.05%	−0.01%	+0.15%	+0.09%
... but with $\theta = \ln 2^{4/5}$	−0.06%	−0.01%	+0.20%	+0.13%
... but with $\varepsilon = 4$	−0.05%	−0.00%	+0.07%	+0.02%

Conclusion

Traditional Mandate

MoPo $\longrightarrow$ mimic natural rate of return

MacroPru $\longrightarrow$ replicate constrained eff. policy of flexible price econ.

Coordinated Mandate

MoPo $\longrightarrow$ deviate from natural rate of return: Greenspan put + LAW

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Social Welfare Gains

<u>Coordinated</u> $\succ$ <u>Traditional</u> by 0.07% annual consumption equivalent