Passive Monetary Policy and Active Fiscal Policy in a Monetary Union

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These comments are personal views of the discussant and do not represent the views of the Eurosystem or the Banco de España.

Does it matter if M is passive and F is active in the euro area?

- Maastricht Treaty agreed to follow **inflation targeting** and **fiscal rules**. But recently:
  - $r \approx 0$ for most of the past decade
  - Fiscal rules suspended and debt exploding in response to a sequence of crises

Does it matter if M is passive and F is active in the euro area?

- Maastricht Treaty agreed to follow **inflation targeting** and **fiscal rules**. But recently:
  - $r \approx 0$ for most of the past decade
  - Fiscal rules suspended and debt exploding in response to a sequence of crises
- **This paper models a monetary union under a policy regime with passive monetary policy and active fiscal policy.**
  - **Price level is determinate** in this policy configuration
    - Price level depends on **debt of euro area** as a whole
  - Active fiscal policy encompasses many very different fiscal regimes
  - Paper proposes a practical implementation of an active fiscal policy
    - Involves **Eurobonds** issued by a European fiscal authority with tax powers
    - Avoids stochastic wealth transfers across member states

Buzz words

- “Active/passive monetary policy”
- “Active/passive fiscal policy”
- Fiscal “backing”
- Fiscal “support”
- “Commitment”
  - to a sequence
  - to a rule
- “Regime switching”
- “Determinacy/indeterminacy” of the price level

- **“Monetary financing”**

Active vs. passive policies

- Fiscal policy is **active** if the primary **surplus does not respond** strongly to changes in the level of debt.
  - *Example*: SGP is **passive**, because surplus must rise when debt exceeds limit
- Monetary policy is **active** if it **aggressively targets inflation**, even when this requires large changes in interest rates
  - *Example*: Taylor rule is **active**, because interest rates respond more than one-for-one to inflation deviations

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Is the equilibrium price determined?

	Passive M	*Active M*
Passive F	Indeterminacy	**Determinacy**
Active F	**Determinacy**	No equilibrium exists

A clean, elegant model

- **Long run** (flex price) model of a **heterogeneous** (home-biased) monetary union, with $I > 1$ member states ($I = 2$)
- **Endowment economy**
  - Each member state i produces one good Y_i with price W_i
  - Representative consumer in country i consumes CES basket of home and foreign goods
- **Fiscal policy** (primary surplus S_i) of country i is set by its own government
- **Monetary policy** is set by the common central bank
  - Central bank issues reserves to buy (public) debt
  - Central bank may pay remittances to member state governments

Budget constraints

- Representative household of country i:

$$\underbrace{\sum_{j=1}^{I}(1+\rho Q_{j,t})B^{H}_{i,j,t-1} - \sum_{j=1}^{I} Q_{j,t}B^{H}_{i,j,t}}_{\text{net bond income}} + \underbrace{R_{t-1}H_{i,t-1} - H_{i,t}}_{\text{net reserves income}} + \underbrace{W_{i,t}Y_{i,t} - P_{i,t}C_{i,t} - W_{i,t}S_{i,t}}_{\text{endowment minus expenditures}} = 0$$

- Government of country i:

$$W_{i,t}S_{i,t} + W_{i,t}Z_{i.t} + Q_{i,t}B_{i,t} - (1+\rho Q_{i,t})B_{i,t-1} = 0$$

- Common central bank:

$$\sum_{j=1}^{I}(1+\rho Q_{j,t})B^{CB}_{j,t-1} - \sum_{j=1}^{I} Q_{j,t}B^{CB}_{j,t} + \sum_{j=1}^{I} H_{j,t} - R_{t-1}\sum_{j=1}^{I} H_{j,t-1} - \sum_{j=1}^{I} W_{j,t}Z_{j.t} = 0$$

- Can aggregate budgets of governments and common central bank
- Or disaggregate budgets of national central banks

The main math

- Household i optimization implies the following transversality condition:

$$\lim_{T\to\infty} E_0\left(\theta_{i,0,T}\frac{\sum_j Q_{j,T}B^H_{i,j,T}+H_{i,T}}{P_t}\right) \;=\; 0$$

where $\theta_{i,0,T}=\beta^T\frac{\tilde{P}_{i,0}}{\tilde{P}_{i,T}}\frac{u'(C_{i,t+1})}{u'(C_{i,t})}$ is household i's discount factor between 0 and T.

- Iterate forward on the aggregate public sector budget constraint, using the discount factor of *any* household h:

$$\frac{\sum_{j=1}^{J}(1+\rho Q_{j,0})\sum_{i=1}^{I}B^H_{i,j,-1}+R_{-1}\sum_{i=1}^{I}H_{i,-1}}{P_0} \;=\; E_0\sum_{t=0}^{T}\theta_{h,0,t}\sum_{i=1}^{I}\frac{W_{i,t}S_{i,t}}{P_t}$$

$$+\;E_0\theta_{h,0,T}\left[\frac{\sum_{j=1}^{J}Q_{j,T}\sum_{i=1}^{I}B^H_{i,j,T}+\sum_{i=1}^{I}H_{i,T}}{P_T}\right]$$

- Can use each household's transversality condition to eliminate the last term...

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- Hence the aggregate price level P_0 is determined by:
  - Total **public liabilities** of the monetary union
  - PDV of total future public **primary surpluses** of the monetary union

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- Hence the aggregate price level P_0 is determined by:
  - Total **public liabilities** of the monetary union
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- An analogous budget constraint does **not hold** at the country level

Implications: fiscal shocks cause endogenous wealth transfers across countries

Experiment	*Shock*	*Aggregate price level*	*Relative prices*	*Consumption*
Symmetric fiscal expansion	15% deficits in both $i = 1, 2$	P rises 4% permanently	Unchanged	Unchanged
Asymmetric fiscal expansion	No deficit, $i = 1$ 15% deficit, $i = 2$	P rises 2% permanently	$\tilde{P}_1$ falls 2bp $\tilde{P}_2$ rises 2bp permanently	C_1 falls 4bp C_1 rises 4bp permanently
Balanced expansion and contraction	$\approx$ 15% surplus, $i = 1$ 15% deficit, $i = 2$	Unchanged	$\tilde{P}_1$ falls *more* $\tilde{P}_2$ rises *more* permanently	C_1 falls *more* C_1 rises *more* permanently

*Shock is a one-quarter primary deficit equalling 15% of quarterly GDP (3.75% annualized).

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- **Mechanism:** Deficit i loosens household i's budget constraint: consumption demand rises.
  - Aggregate and relative prices adjust to offset demand.

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- **Wealth transfers reinforced** if country 1 is a **creditor** to country 2

How to avoid wealth transfers when fiscal shocks occur?

- **"Sims rule"**: Each government obliged to adjust its surplus in response to **deviations from its designated share** of total debt:

$$\frac{W_{i,t}S_{i,t}}{P_t} = \phi_{i,t} + \phi_B \left(\frac{Q_{i,t}B_{i,t-1}}{P_{t-1}} - \eta_i \sum_{j=1}^{I} \frac{Q_{j,t}B_{j,t-1}}{P_{t-1}} \right)$$

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  - **Wealth transfers eliminated –** passive fiscal policy means transfers are eventually paid back

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    - Active: aggregate fiscal stance does not react to debt level
- **Problem:** this only works if **all countries obey the fiscal rules**

Implementing the Sims rule via Eurobonds

- **Eurobonds mechanism**:
  - Governments passively adjust own surplus in response to own debt:

$$\frac{W_{i,t} S_{i,t}}{P_t} = \phi_{i,t} + \phi_B \frac{Q_{i,t} B_{i,t-1}}{P_{t-1}}$$

  - **European fiscal authority (EFA)** adjusts aggregate surplus in the opposite direction:

$$\sum_{i=1}^{I} \frac{W_{i,t} S^F_{i,t}}{P_t} = \phi^F_t - \phi_B \sum_{j=1}^{I} \frac{Q_{j,t} B_{j,t-1}}{P_{t-1}}$$

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- **Aggregate fiscal policy is active** – debt response term cancels out
- **Advantage:** this creates an **effective fiscal instrument** under control of EFA
  - EFA could compensate for deviations of governments' policies from their fiscal rules
  - EFA could switch to aggregate passive fiscal policy when/if this becomes necessary

Punchlines: bringing theory to practice

- **Eurobonds mechanism** implements Sims rule in a more practical/credible way
  - Keeps member state fiscal policy passive, consistent with SGP
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- Overall, optimal policy is likely to involve **regime switching**, to improve stabilization and ensure determinacy at all times
  - Passive F, active M in "normal" times
  - Active F, passive M when slumps push us towards ELB
- That's why having a practical way of implementing active fiscal policy matters

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- That's why having a practical way of implementing active fiscal policy matters
- **Demystifying buzzwords**
  - "Active" F is not the same as "irresponsible" F
  - Occasional switching to "passive" M – in order to improve stabilization and ensure determinacy – is not the same as "monetary financing"

THANKS FOR YOUR ATTENTION!

Public budget constraints can be aggregated

- Representative household of country i:

$$\sum_{j=1}^{I}(1+\rho Q_{j,t})B^{H}_{i,j,t-1} - \sum_{j=1}^{I} Q_{j,t}B^{H}_{i,j,t} \; + \; R_{t-1}H_{i,t-1} - H_{i,t} \; + \; W_{i,t}Y_{i,t} - P_{i,t}C_{i,t} - W_{i,t}S_{i.t} \;\; = \;\; 0$$

- Budget constraint of aggregate public sector:

$$\sum_{j=1}^{I} W_{j,t}S_{j,t} \; + \; \sum_{j=1}^{I} Q_{j,t}B^{H}_{j,t} - \sum_{j=1}^{I}(1+\rho Q_{j,t})B^{H}_{j,t-1} \; + \; \sum_{j=1}^{I} H_{j,t} - R_{t-1}\sum_{j=1}^{I} H_{j,t-1} \;\; = \;\; 0$$

- Sovereign **bonds held by the Eurosystem cancel out** of aggregate public sector budget constraint

- Return to main presentation

NCB budget constraints can be disaggregated

- Representative household of country i:

$$\sum_{j=1}^{I}(1+\rho Q_{j,t})B^{H}_{i,j,t-1} - \sum_{j=1}^{I} Q_{j,t}B^{H}_{i,j,t} \ + \ R_{t-1}H_{i,t-1} - H_{i,t} \ + \ W_{i,t}Y_{i,t} - P_{i,t}C_{i,t} - W_{i,t}S_{i.t} \ = \ 0$$

- Government of country i:

$$W_{i,t}S_{i,t} + W_{i,t}Z_{i.t} \ + \ Q_{i,t}B_{i,t} - (1+\rho Q_{i,t})B_{i,t-1} \ = \ 0$$

- National central bank of country i:

$$(1+\rho Q_{i,t})B^{CB}_{i,t-1} - Q_{i,t}B^{CB}_{i,t} \ + \ H_{i,t} - R_{t-1}H_{i,t-1} + R_{t-1}\sum_{j=1}^{I} T_{i,j,t-1} - \sum_{j=1}^{I} T_{i,j,t} - W_{i,t}Z_{i,t} \ = \ 0$$

- TARGET debts $T_{i,j,t}$ of j held by i enter NCB budget constraint

- Return to main presentation