

The Central Bank, the Treasury, or the Market: Which One Determines the Price Level?

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Introduction: New interest in fiscal-monetary interactions

Unprecedented issuance of public liabilities since 2008

- ◇ Government debts (125 % of US GDP and 100 % EA)
- ◇ Central bank reserves (more than 30 % of US GDP; 60 % in the EA)
- ◇ Low rates and low fiscal costs of deficits (Blanchard, 2019)

Uncertain inflation dynamics

- ◇ Stable and low inflation since 1990s
- ◇ Uncertainty about the persistence of recent surge in inflation
- ◇ Threat on central banks' ability to fulfill their price-stability mandate?

This paper: The conditions under which the price level is above central bank's target in order to ensure sovereign solvency – fiscal dominance

How does fiscal authority impose fiscal dominance?

Fiscal dominance in Sargent and Wallace (1981)

- ◇ Fiscal authority (F) first commits to path of debt and deficits
- ◇ Monetary authority (M) chickens out: raises seigniorage revenues
- ◇ M chickens out to avoid default

But what happens if M “refuses” to chicken out ?

- ◇ to force F to raise more surpluses
- ◇ to avoid M to deviate from its objective

This paper: The game between M and F in the absence of commitment

The costs of fiscal dominance

If F wants M to chicken out, F must:

- ◇ **Exhaust its future fiscal capacity:**
 - ▶ Cannot raise resources (e.g. fiscal limit, distortionary taxation),
 - ▶ Cannot cut spending (e.g. political pressures, high fiscal multiplier).
- ◇ **Borrow against all its future resources** and spend right away

Potential costs:

- Reduce future fiscal capacity to absorb adverse shocks,
- Push the real interest rate up [what we introduce in the paper];

Thus, monetary dominance when

- ◇ Small legacy liabilities
- ◇ Strong crowding out
- ◇ Large future fiscal capacity
- ◇ Patient fiscal authority

Building blocks of the two-date model

Three types of agents:

- ◇ M issues reserves and sets nominal interest rate
Objective $-|P_0 - P_0^M| - \alpha_M \Delta_0 + \beta(-|P_1 - P_1^M| - \alpha_M \Delta_1)$
- ◇ F issues debt and consumes (g_0, g_1)
Objective $g_0 - \alpha_F \Delta_0 + \beta(g_1 - \alpha_F \Delta_1)$
- ◇ Risk-neutral savers live for two dates and consume when old
Optimal portfolio between debt, reserves, and a storage technology

Notation: $\Delta_t = 1$ when F defaults at date t

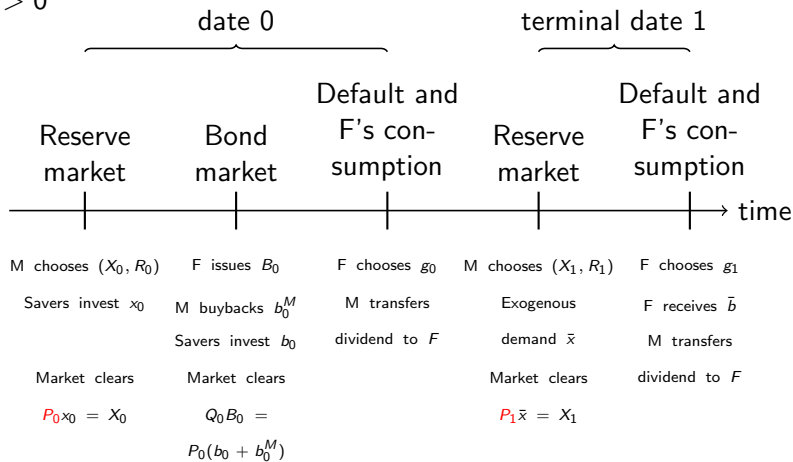
Additional assumptions:

- ◇ For brevity, $\alpha_M < \alpha_F = \infty$
- ◇ $g_t \geq 0$ F 's date- t spending (also measures distance to fiscal limit)
- ◇ Storage technology with decreasing and strictly convex return $r(\cdot)$

Timeline of the game

Legacy reserves

$$R_{-1}X_{-1} > 0$$

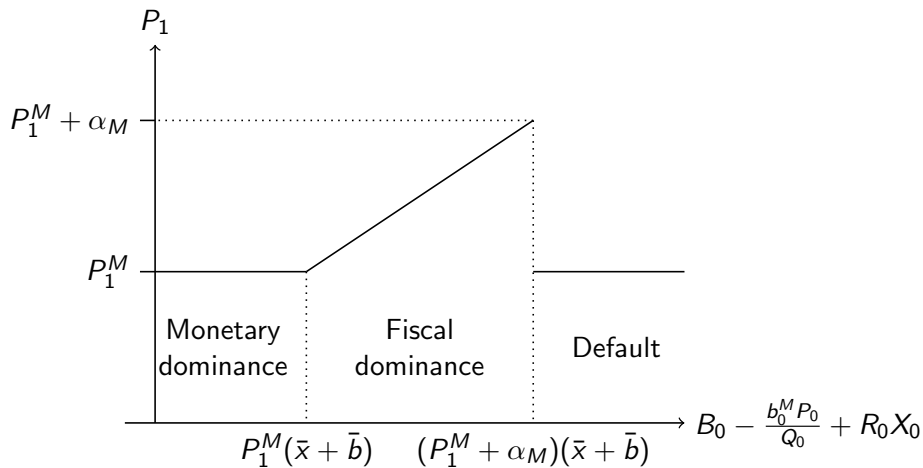


Equilibrium definition

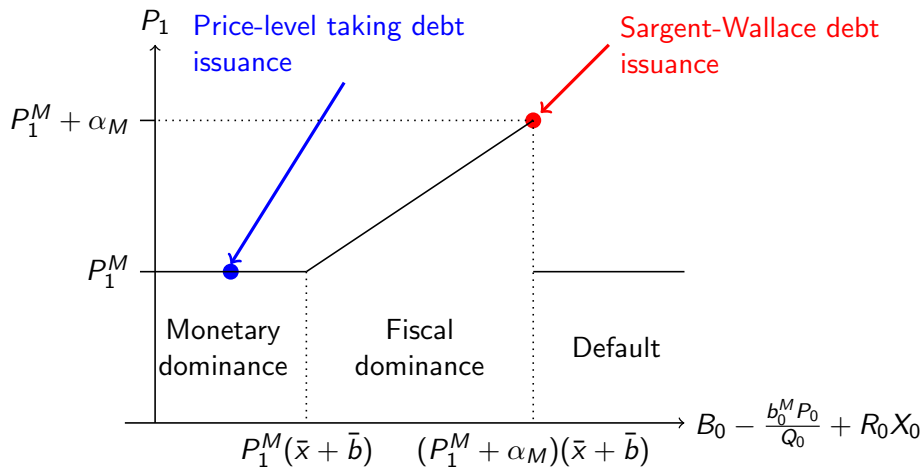
- ◇ Perfect foresight
- ◇ Standard subgame perfection for F and M
- ◇ Individual savers are price takers as in macroeconomic games (Bassetto, 2002; Ljungqvist-Sargent, 2018).
- ◇ Price level clears the reserve market and bond price the bond market

Finite horizon \Rightarrow Backward induction

Date-1 price level and net public liabilities

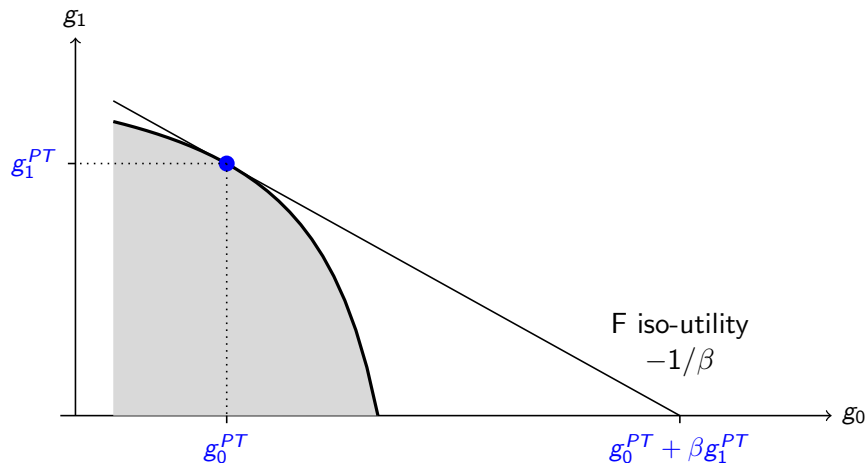


Two options for F on the date-0 debt market



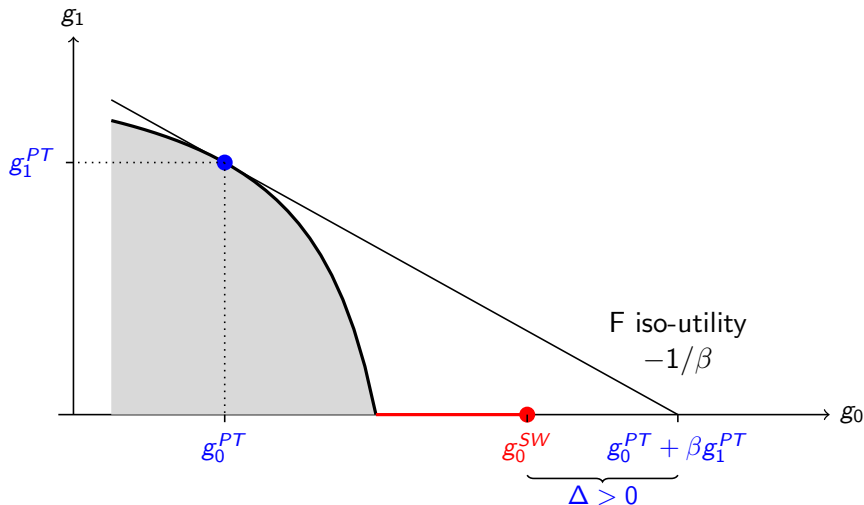
Tradeoff that F faces on the debt market

Price-level taking debt level: optimal consumption profile (g_0^{PT}, g_1^{PT})
given $P_1 = P_1^M$

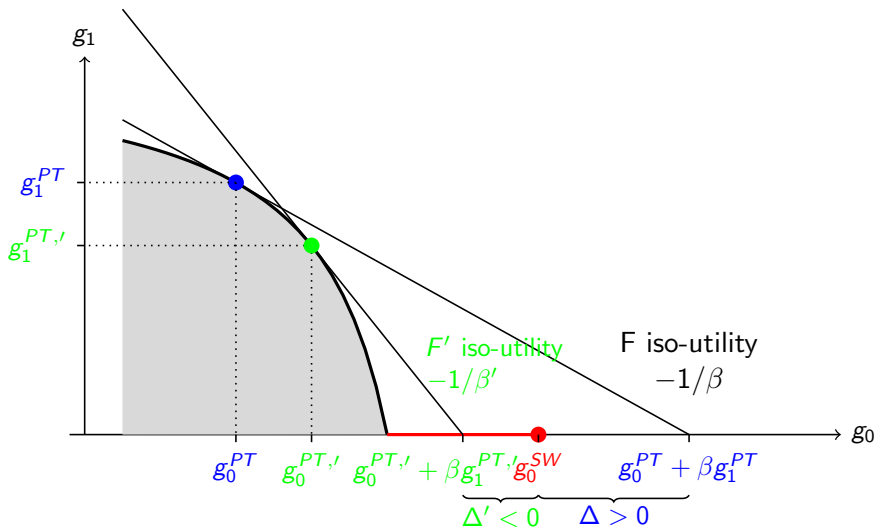


Tradeoff that F faces on the debt market

Sargent-Wallace debt level: consumption profile $(g_0^{SW}, 0)$ such that $P_1 = P_1^M + \alpha^M$ to reduce the cost of reserves already issued $R_0 X_0$



When is there monetary dominance? An example



When is there monetary dominance?

M imposes its views (monetary dominance):

- ◇ Even if M cannot commit on future actions
- ◇ Even if F does not commit on a fiscal support or a fiscal rule

When F finds costly to exhaust future fiscal capacity ($g_1 = 0$):

- ◇ F is sufficiently patient (β)
- ◇ Legacy reserves are small enough ($R_{-1}X_{-1}$)
- ◇ Future fiscal resources are large ($\bar{x} + \bar{b}$)
- ◇ Crowding effect is large ($r(\cdot)$ steep)

Conclusion

- Sargent and Wallace (1981): *“The question is, Which authority moves first, the monetary authority or the fiscal authority? In other words, Who imposes discipline on whom?”*
- M imposes its views if and only if sufficiently strong market forces imply that any fiscal victory in the “game of chicken” must be a Pyrrhic one via an excessively high real interest rate

In the rest of the paper:

- ◇ M can attenuate the cost of fiscal dominance (preemptive inflation)
- ◇ Fiscal rules are needed absent market forces
- ◇ Multi-period: Endogenous regime switch from Monetary to Fiscal dominance when low rates
- ◇ Infinite horizon and unbacked public liabilities (due to low rates): dominance depends on private sector reaction \Rightarrow Market dominance