

Should Central Banks Backstop Government Debt?

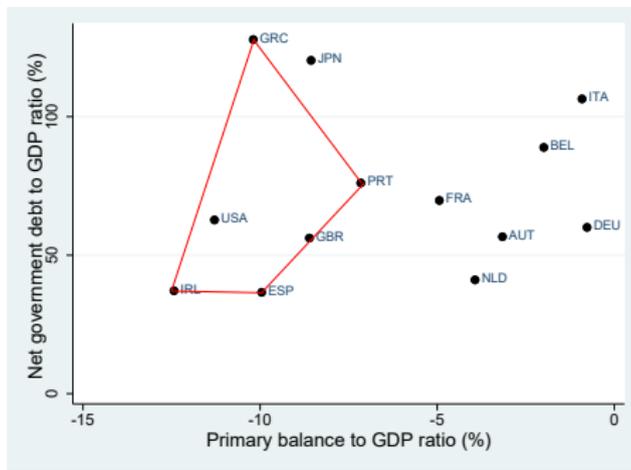
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Introduction

Why was there a government debt crisis in the euro area?

Fiscal fundamentals in selected economies (2009)



The plot reports the general government net debt to GDP ratio (% , vertical axis) against the general government primary balance to GDP ratio (%) in 2009 (Source: World Economic Outlook database October 2022). For Greece we report the general government gross debt as the net debt is not available in the WEO database.

Figure: Fiscal fundamentals in 2009 (WEO)

Lessons commonly drawn from the euro debt crisis

- It makes a difference whether the central bank “backstops” government debt or not
- The euro debt crisis abated when the ESCB started to backstop euro area government debt
 - Draghi’s “whatever it takes” (2012), OMT, TPI

This talk is about “what it takes” and what “backstopping” government debt means

Overview

- The central bank interventions in government debt markets have been described as lending in last resort (De Grauwe, 2011)
 - this perspective was formalized in the theoretical literature (Lorenzoni and Werning, 2019)
 - the ECB has justified its interventions by the existence of multiple equilibria
- This is a convenient view (free lunch, no trade-off with inflation) but I will push back against it
- I will propose an alternative view, “financial repression of last resort”

Lending in last resort to governments

Multiple equilibria as a justification for the “whatever it takes” measures

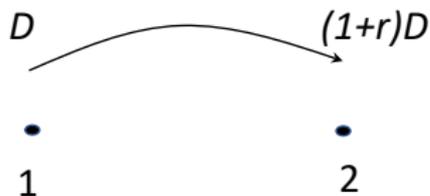
“the assessment of the Governing Council is that we are in a situation now where you have large parts of the euro area in what we call a “bad equilibrium”, namely an equilibrium where you may have self-fulfilling expectations that feed upon themselves and generate very adverse scenarios. [...] And this would justify the intervention of the central bank.”

(Mario Draghi, Introductory statement to the September 6, 2012 Press Conference)

Lending in last resort to governments

Theory

- Self-fulfilling rollover crises a la Cole and Kehoe (2000)
- Self-fulfilling debt crises a la Calvo (1989)



default probability $p = f((1+r)D), f' > 0$

$$\text{Interest rate } 1 + r = \frac{1+r_S}{1-p}$$

- More dynamic and micro-founded model: the slow-moving crises of Lorenzoni and Werning (2019)

Lending in last resort to governments

- How lending in last resort can help in these models: Corsetti and Dedola (2016), Bacchetta, Perazzi and Van Wincoop (2018), Roch and Uhlig (2018), Camous and Cooper (2019), etc.
- No need to intervene in equilibrium (free lunch)
 - indeed the OMTs and TPIs were never used
- Convenient view but realistic?

Lending in last resort to governments

- The countries in which the debt-to-GDP ratio increases even though the government does not pay a substantial default risk premium are not in a bad equilibrium as defined in the multiple equilibria literature

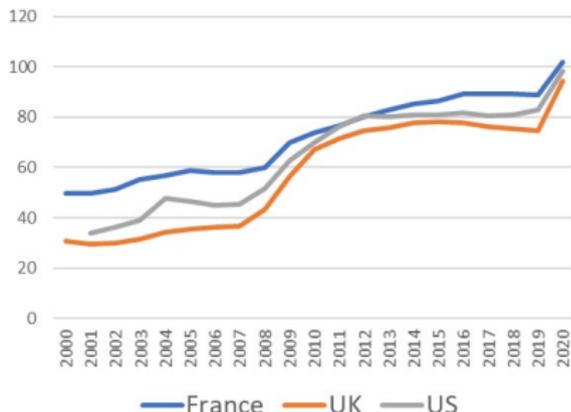


Figure: General government net debt to GDP ratio (source:WEO)

- The debt-to-GDP ratio cannot increase without bound: what is the backstop?

Lending in last resort to governments

- We need to think about a more intrusive form of backstop: financial repression
 - if debt is on an unsustainable path, the backstop must produce some revenue for the government (Reis, 2013)
- Reinhart and Sbrancia (2015) have shown how governments have reduced their debts after WWII using financial repression
 - forcing the banks (not only the central bank) to hold government debt at below-market interest rates, often associated with higher inflation (see Acalin and Ball, 2023, for the U.S. in 1940-70s)
 - the resulting “financial repression tax” has amounted to several points of GDP per year

Financial repression of last resort

Analysis based on “‘Whatever It Takes’: Government Default Versus Financial Repression,” manuscript

[http : // www.econ2.jhu.edu/People/Jeanne/FIMB_052023.pdf](http://www.econ2.jhu.edu/People/Jeanne/FIMB_052023.pdf)

- Model of one country with its own currency
- Government debt dynamics can be sustainable or not
- Policy options: fiscal adjustment, financial repression, default
- What is optimal financial repression?

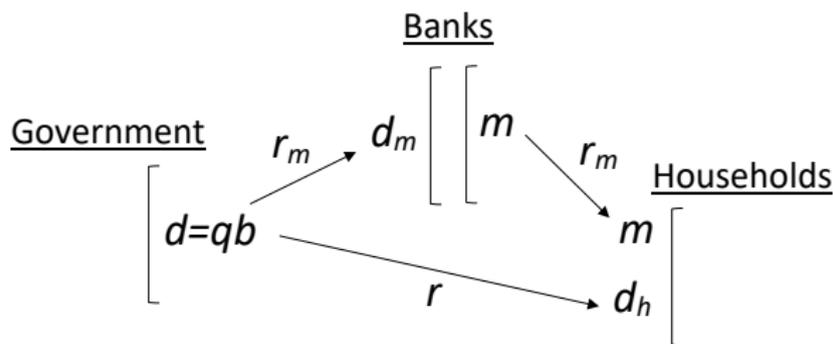
Financial repression of last resort

Model

- Representative household maximizing $U = \int_0^{+\infty} [c(t) + u(m(t))] e^{-rt} dt$
- Banking sector (CB + commercial banks) issues deposits m to households, on which it pays real interest rate $r_m(t)$
- **Financial repression:** the government extracts quasi-fiscal revenue $\theta(t)$ from the banking sector

$$\theta(t) = [r - r_m(t)] m(t)$$

Because of ZLB high values of θ require positive inflation



Financial repression of last resort

- The government finances a constant stream of expenditures g with fiscal revenue $\tau(t)$, financial repression revenue $\theta(t)$, and real long-term debt
 - bond with exponentially decaying coupon (Hatchondo and Martinez, 2009)
- In reduced form household utility flow is decreasing with fiscal and quasi-fiscal revenue

$$c(t) + u(m(t)) = \bar{u} - \gamma_\tau \tau(t) - \gamma_\theta \theta(t)$$

(endogenous)

- Financial repression is more distorsive than taxation

$$\gamma_\theta > \gamma_\tau$$

The analysis is not about equating the marginal cost across sources of revenue

- So why use financial repression?

Financial repression of last resort

Fiscal inertia

- Fiscal policy can be in active or passive regime (Leeper, 1991)
 - passive: $\tau(t)$ follows rule such that $b(t) \rightarrow \underline{b}$
 - active: $\tau(t)$ constant such that $b(t) \rightarrow +\infty$
- Bad fiscal shock: fiscal policy switches from passive to active (occurs with constant flow probability μ)
- Fiscal adjustment opportunity: the government has the *option* of switching from active to passive (occurs with constant flow probability)
 - the equilibrium is *incentive-compatible* if a welfare-maximizing government chooses to fiscally adjust when given the opportunity
- Financial repression can be used at any time

Default

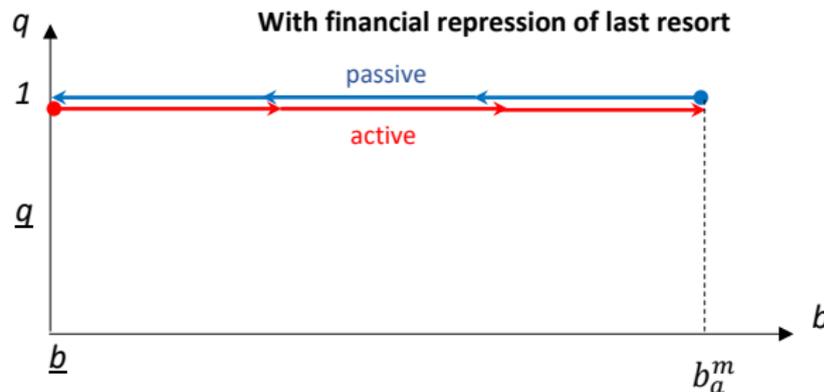
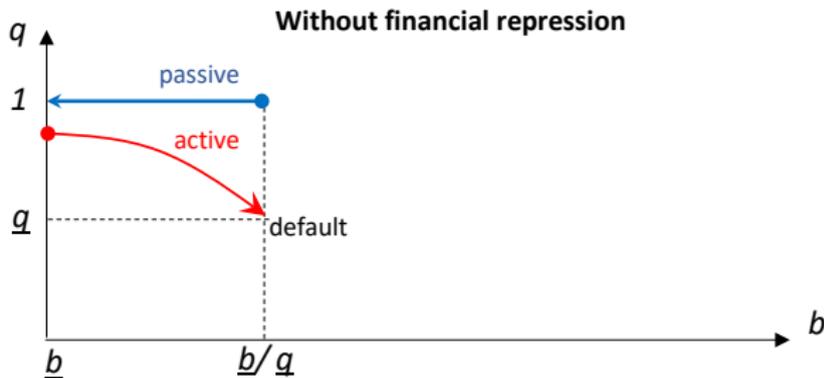
- The government can default at any time: $b(t) \rightarrow \underline{b}$
- The government defaults if this increases welfare (opportunistic default) or if the price of debt $q(t)$ falls to a threshold \underline{q} (rollover crisis)
 - rollover crises limit the dilution of government debt holders
- Default implies a fixed output cost γ_d
- The cost of financial repression γ_θ is not too high relative to the cost of default γ_d

Financial repression of last resort

Analytical results (tractable specification $\mu = 0$)

- The equilibrium cannot be default-free if financial repression is completely ruled out (no free lunch)
 - fiscal adjustment is not incentive compatible when debt exceeds a threshold, which occurs with positive probability
- The welfare-maximizing policy is to use financial repression as a last resort to avoid default
 - financial repression is used only when debt reaches a threshold where the government is indifferent between default and repression
 - the equilibrium is incentive-compatible because $\gamma_\theta > \gamma_\tau$
- The economy behaves very differently under the strict no-repression regime and the optimal-repression regime

Financial repression of last resort



Financial repression of last resort

Calibration

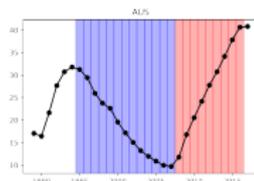
- Real interest rate 2% (Barrett, 2018); debt maturity 6 years; government expenditures 40% of GDP; target level of debt in passive regime 60% of GDP (Maastricht); default cost 40% of GDP; $\underline{q} = 0.5$ (Greek default)
- Calibration of γ_τ and γ_θ based on Frisch elasticity of labor supply and estimates of demand for M2 in the US

$$\gamma_\theta = 2.5 \cdot \gamma_\tau$$

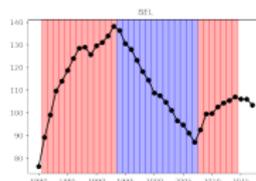
- Calibration of fiscal policy based on study of debt-increase and -decrease episodes (Zhang, 2022)
 - targets: frequency of debt episodes, average debt-to-GDP ratio (2017) and volatility in debt-to-GDP ratio in sample of advanced economies
 - expected duration of passive or active fiscal regime 7 years

Financial repression of last resort

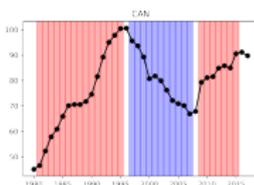
Zhang (2022)



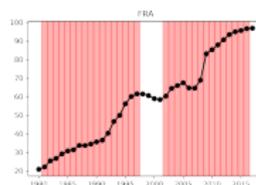
(a) Australian: 1989-2017



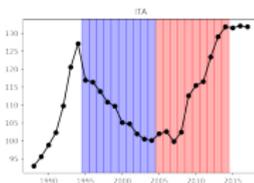
(b) Belgium: 1981-2017



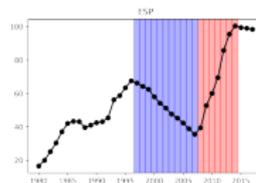
(c) Canada: 1981-2017



(d) France: 1981-2017



(e) Italy: 1989-2017



(f) Spain: 1981-2017

Financial repression of last resort

Simulations

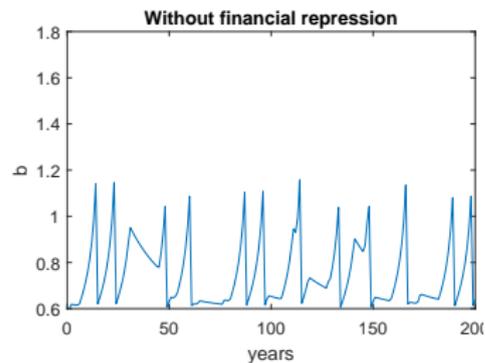
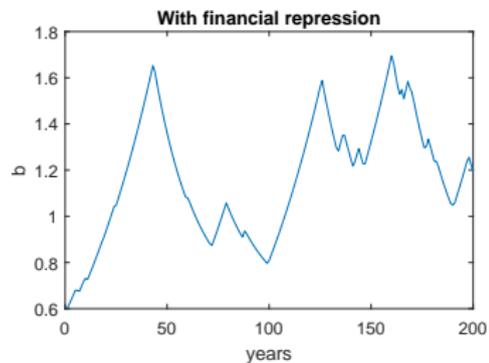


Figure: Debt dynamics with and without financial repression of last resort

Financial repression of last resort

- Equilibrium if financial repression is ruled out
 - frequent default (every twenty years), which reduces output by 2% on average
- Equilibrium with last resort financial repression
 - financial repression triggered when debt reaches 386% of GDP
 - this occurs rarely (less than once a century)
 - inflation rate increases to 27% under financial repression; average inflation increases by less than 0.2%
- Welfare gain from optimal financial repression equivalent to about 1% permanent increase in consumption

Financial repression of last resort

Takeaway

- The inflation targeting literature may have missed the fact that for the government debt market to work well, there needs to be an escape clause
 - after all, many central banks were created to manage the debt of the government
- There is a big difference between ruling out financial repression with probability 100% and ruling it out with probability less than 100%
 - 100% leads to government debt instability and frequent default
- The escape clause can be left implicit
 - with a benevolent government the incentives to trigger financial repression are not problematic under discretion

Financial repression of last resort

How does optimal financial repression work in a monetary union?

- The costs of financial repression are shared between the members of the union
 - capital controls can help to segment the interest rate on deposits but inflation is the same across countries
- To preserve the incentives to fiscally adjust the international sharing of the financial repression revenue must be limited
- Collateral damage: the whole union suffers when one country needs financial repression

Conclusions

Should central banks backstop government debt?

My answer: a qualified yes

- Bad news: realistically the backstop may mean financial repression and inflation
- Good news: if financial repression is used in last resort it could be used very rarely
- Bad news: if financial repression is off the table the alternative is frequent defaults
- Bad news: the optimal policy mix seems much more difficult to achieve in a monetary union than in a country with its own currency

THANK YOU!