

Fiscal distress and banking performance: The role of macroprudential regulation

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Fiscal fragility can undermine a government's ability to honor its bank deposit insurance pledge and induces a positive correlation between sovereign default risk and financial (bank) default risk. We show that allowing bank capital requirements in fiscally weak countries to be higher can negate this effect. Higher requirements support more output and welfare relative to the case where macroprudential policy does not vary with the degree of fiscal stress. Fiscal tenuousness also exacerbates the effects of other risk shocks. Our analysis implies that fiscally weak countries would favor and fiscally strong countries would object to banking union.

[A] Introduction

The recent sovereign debt and banking crises in the Eurozone have revealed a strong positive correlation between banking and sovereign credit risk. In Greece, the prospect of a possible sovereign debt default devastated the banking system. Conversely, the collapse of the banking system in Ireland wreaked havoc on the fiscal front.

In the literature, banks' exposure to domestic government debt provides the channel of transmission from the fiscal to the banking front, with lower bond prices leading to weaker bank balance sheets; and bank bail-outs provide the transmission from banks to the country's fiscal health due to the associated surge in the level of public debt. There are two strands in the relevant literature. The first one (Acharya et al. 2014, Cooper and Nikolov 2017, Fahri and Tirole 2018) studies bilateral interactions between these two phenomena. The second strand (Broner et al. 2013, Bocola 2016) studies only the transmission of fiscal fragility to bank lending and macroeconomic performance. The alleged effects are contractionary.

We emphasize a different transmission mechanism linking fiscal frailty to banking performance, namely, government bank deposit insurance guarantees, rather than bank exposure to public debt. We let the share of bank deposits that is not recouped by the depositors in case of bank default (i.e. the amount of bail-in) be related to the sovereign's state of finances. Indeed bank deposit riskiness arising from fiscal solvency played an important role in the recent Greek crisis. Second, we allow macroprudential policy –capital requirements– to vary optimally with the degree of deposit riskiness. This helps stifle

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contagion from the fiscal to the banking front, weakening the positive co-movement between the financial sector's and sovereign's credit risk that characterizes the extant literature. The extant literature shuns away from studying the role that prudential policy could potentially play in mitigating contagion from the fiscal to the banking front. And third, we allow for bank default in the model, and fiscal fragility to matter for it. Hence, financial solvency risk varies with sovereign solvency risk.

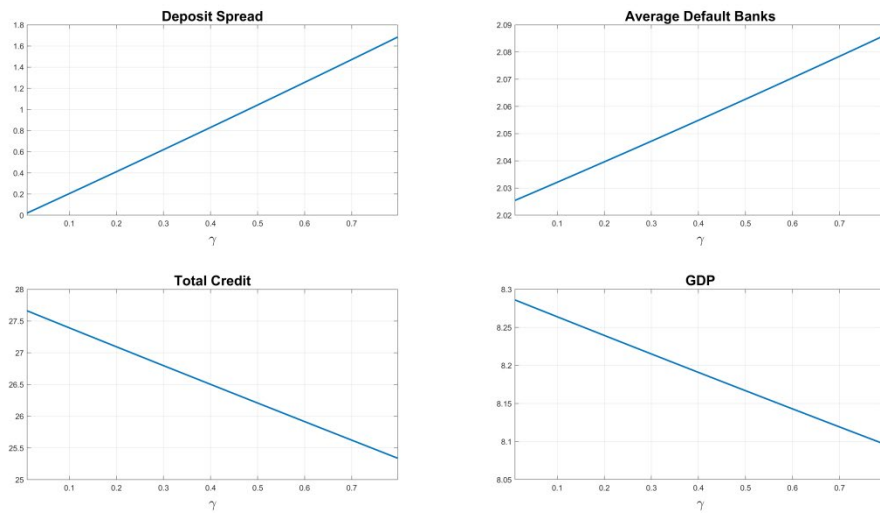
Our model is based on Clerc et al. (2015), a Dynamic Stochastic General Equilibrium (DSGE) model that features a rich financial sector afflicted by multiple agency problems, banking capital regulations, government-provided deposit insurance and bank default in equilibrium. The key implication of the model is that capital requirements reduce bank leverage and the default risk of banks but their relationship with social welfare is hump-shaped, reflecting a trade-off between bank default and underinvestment. We assume that the deposit insurance scheme is not full-proof due to the limited fiscal capacity of the government. This creates a wedge between the return on deposits and the risk-free interest rate and a link between the probability of bank default and the cost of funding for the banks. The model is calibrated to the Greek economy.

[A] Macroeconomic effects of incomplete deposit insurance

To trace out the macroeconomic effects of fiscal fragility, consider an increase in the probability that the government will not be able to meet its deposit guarantee pledge. This makes bank deposits more risky, inducing the households to change their savings and portfolio decisions. The cost of raising funds for the banks increases and their lending decreases. The higher cost of funding increases the probability of default for the banks' borrowers which translates into a higher probability of bank default. Sovereign and financial credit risks thus move in tandem, the typical scenario in the literature. There is a contraction, with output, consumption and investment all decreasing (see Figure 1).

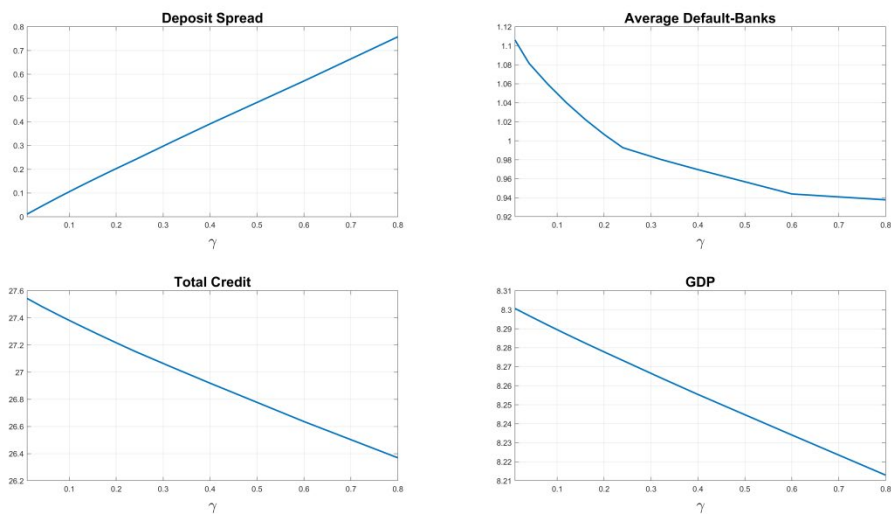
The change in the riskiness of deposits impacts on the optimal level of bank capital requirements. When the level of capital requirements adjusts optimally to changes in the degree of deposit riskiness so that to maximise social welfare, we show that as deposits become riskier, the optimal level of capital requirements uniformly increases. Implementing the optimal adjustment leads to a lower rate of bank default, creating a negative correlation between sovereign and financial credit risks (see Figure 2). This constitutes a key finding and raises an important qualification to the robustness of the standard, positive correlation assumed in the literature. The insulation of the banking sector through higher requirements also improves welfare. But importantly, and unlike what one might have feared on the basis of their alleged cost for bank lending, they contribute to higher economic activity: the recession is less severe than what would have been in the absence of policy adjustment. The positive effect on output is mainly due to the fact that the increase in capital requirements in the face of an increase in fiscal frailty ends up supporting a higher level of financial intermediation.

Figure 1: Steady state effects of fiscal fragility under constant capital requirements



Notes: (i) The level of capital requirements is set equal to 8%, (ii) γ denotes the degree of fiscal fragility, (iii) The vertical axes show the steady state levels of the respective variables for different values of γ .

Figure 2: Steady state effects of fiscal fragility under optimal capital requirements

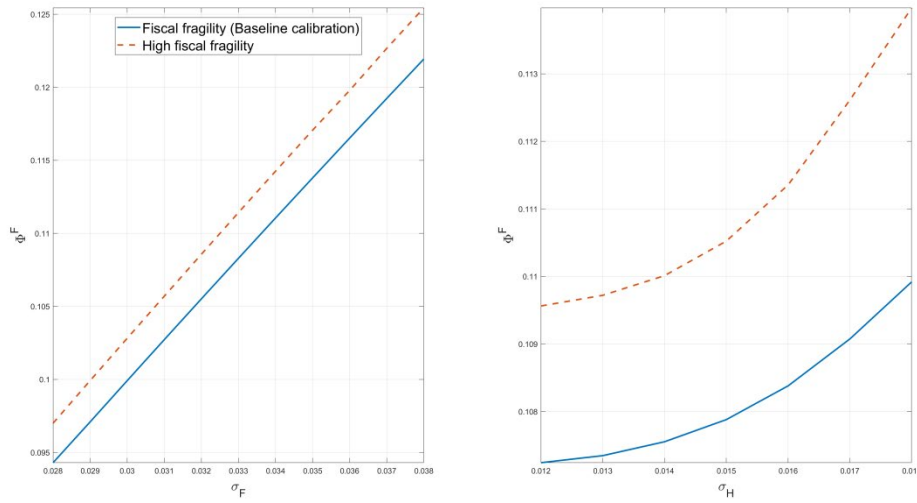


Notes: (i) γ denotes the degree of fiscal fragility, (ii) Capital requirements have been chosen optimally for each value of γ , (iii) The vertical axes show the steady state levels of the respective variables for different values of γ .

[A] Interactions between incomplete deposit insurance and economic uncertainty

We also examine the relationship between economic uncertainty and optimal capital requirements. Figure 3 shows that optimal capital requirements increase at an increasing rate as the variance of the risk shocks increases. This means that countries with substantial financial (or aggregate) volatility have to have higher levels of capital requirements. Moreover, the combination of higher economic uncertainty and higher fiscal frailty has a magnifying effect on optimal requirements.

Figure 3: Uncertainty and optimal capital requirements



Notes: (i) σ_F, σ_H denote the variances of the risk shocks on banks that provide corporate loans and mortgage loans, respectively (ii) Φ_F denotes the optimal level of capital requirements for different values of σ_F, σ_H .

[A] Implications for banking union

Our analysis also has implications for banking union. If the fiscal capacity of the banking union is the weighted average of those of its members, then the fiscally strong countries will face an increase in the level of optimal requirements when they join a union. The opposite is true for fiscally weak countries. Due to the tradeoffs associated with capital requirements, the fiscally strong countries end up *ceteris paribus* worse off and the weak better off in a banking union that has shared fiscal capacity for the provision of deposit insurance. Naturally, banking union contains many costs and benefits that are not present in our analysis, so the fiscal perspective we bring to the table is only one of the factors that need to be considered.

[A] Conclusions

Weak public finances matter for the banking sector through a variety of channels. Higher sovereign risk premia have a negative impact on the balance sheet of banks that hold public debt, hindering their ability to make loans and, in extreme cases, threatening their solvency. Doubts about the government's capacity to honor its deposit insurance pledge increase interest rates and reduce the volume of bank deposits and bank loans.

In this paper we have focused on the second mechanism, which has been overlooked in the extant literature on the relationship between sovereign and financial credit risk. Our main contribution regards the analysis of how the optimal response of macroprudential regulation to fiscal frailty, by safeguarding the banking system, can arrest a decline in output and welfare. We also show that the effects of various risk shocks are exaggerated by a higher degree of fiscal frailty.

Our analysis also contributes to the literature on banking union. To the extent that the fiscal capacity of the union is the weighted average of that of the individual members, fiscally weak countries will experience a decrease and fiscally strong countries an increase in their optimal capital requirements when forming a banking union. As capital requirements are a necessary but costly regulation due to their effect on credit and economic activity, the former set of countries benefits and the latter loses from participation in the union on the basis of this criterion. While fiscal considerations represent but one of the factors that play a role in the decision to form a banking union, they may represent an important reason for the differing positions held by the “northern” and the “southern” country groups regarding banking union in the EU.

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