

# Bail-ins and Bail-outs: Incentives, Connectivity, and Systemic Stability

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## EXECUTIVE SUMMARY

This paper develops a framework to analyze the consequences of alternative designs for interbank networks, in which a failure of one bank may lead to others. Earlier work had suggested that, provided shocks were not too large (or too correlated), denser networks were preferred to more sparsely connected networks because they were better able to absorb shocks. With large shocks, especially when systems are non-conservative, the likelihood of costly bankruptcy cascades increases with dense networks. Governments, worried about the cost of bailouts, have proposed bail-ins, where banks contribute.

The central results of this paper show that the network topology affects the set of credible government policies: a commitment not to intervene may be credible under some topologies but not under others. For a given prior distribution of shock sizes, our analysis reveals which network architecture is socially preferable *ex ante*.

Our findings reverse the presumptions in earlier work without intervention, which indicate that welfare losses in response to a shock are higher in more sparsely connected networks unless the shock is large enough to cause a systemic default (see Allen and Gale (2000); Acemoglu, Ozdaglar, and Tahbaz-Salehi (2015)). The intuitions behind our findings are twofold: (i) the no-intervention threat is more credible in sparsely connected networks when the shock is large or interbank recovery rates are low and (ii) banks can be incentivized to make larger contributions to a subsidized bail-in if the network is more sparsely connected. When the shock is large, the bail-in plan coordinated by the government leads to lower welfare losses in a more sparsely connected network.

Our analysis offers an explanation for some of the decisions made by the sovereign authorities during distress scenarios. For instance, a private bail-in was coordinated to rescue the Long-Term Capital Management (LTCM) hedge fund in 1998. In contrast, the government of the United States rescued Citigroup through a public bailout in November 2008. Because several default events occurred prior to Citigroup's bailout, the financial system was much more lowly capitalized during the global financial crisis than when Long-Term Capital Management was rescued<sup>1</sup>. Since the amplification of the shock is larger in a lowly capitalized system, the government's threat to not intervene and not bailout Citigroup, the largest bank in the world at the time, might not have been credible. As a result, a public bailout was the only option for rescuing Citigroup, whereas it was possible to secure a bail-in for LTCM.

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<sup>1</sup> We recall the seven credit events occurred in the month of September 2008, involving Fannie Mae, Freddie Mac, Lehman Brothers, Washington Mutual, Landsbanki, Glitnir and Kaupthing.