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Should markets be allowed to fail?: Bailouts and the reallocation of systemic risk

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Abstract
This paper looks at how government bailouts affect systemic financial stability. It does this by examining two episodes: the US Troubled Asset Relief Program and the 2012 Spanish bank recapitalisation. Using difference-in-differences and synthetic control methods, alongside systemic risk measures CoVaR and SRISK, the analysis evaluates both the immediate stabilising effects of intervention and its longer-run implications for risk-taking behaviour. Bailouts do reduce systemic risk in the short run, but the effect erodes. Moral hazard is not just a theoretical concern here. Risk-taking recovers after intervention, and in some specifications the initial stabilisation reverses entirely. Intervention design shapes how quickly this happens. Where bailouts shielded existing shareholders from loss and were not accompanied by regulatory reform, the implicit guarantee of future support seems to have worsened the underlying incentive problem. More conditional interventions fared better. Bailouts, the evidence suggests, do not eliminate systemic risk, but instead shift it. The immediate crisis is contained while the conditions for the next one are quietly made more permissive.

I. Introduction

The question a financial crisis actually poses to governments is not whether to intervene, but what intervening costs. Letting a large bank fail carries obvious risks, intervening through bailouts may give rise to future risk-taking. The assumption that these two concerns can be neatly separated may itself be the problem.

A bailout is when the government intervenes to stop a bank from going out of business, usually by direct funding or guarantees. The risk it targets is systemic: when one bank fails, it usually doesn't stay that way. The worry is that what starts as a small failure can spread to other banks and the economy as a whole. The case for intervention is pretty clear. The fall of Lehman Brothers in 2008 had effects all over the world right away. The Troubled Asset Relief Program (TARP) and other programs were made to stop that kind of chain reaction from happening again. But the problem with rescuing failing institutions is what it signals to the ones that survive. If banks learn that governments will step in when things go wrong, they have less reason to be careful when things are going right. That tension, between stopping the immediate fire and not handing out free insurance for the next one, is what makes bailouts so difficult to evaluate cleanly.

This paper tries to get at that question more precisely than most. Looking at bailout episodes in both the United States and the European Union, where different regulatory structures and crisis timelines offer a useful natural contrast, the analysis uses difference-in-differences and synthetic control methods to isolate the effect of intervention from everything else happening at the same time. Systemic risk is measured through CoVaR and SRISK, two tools designed to capture not just whether a bank is in trouble, but how much trouble it would cause everyone else. The goal is to test whether bailouts actually reduce systemic risk, or whether they just shift it around and let it build quietly until the next crisis.

The remainder of this paper is structured as follows: section 2 reviews the relevant literature on bailouts, systemic risk, and moral hazard. Section 3 describes the data and methodology. Section 4 presents the results and discussion, followed by the conclusion.

II. Literature Review

The most directly relevant empirical work is Berger, Roman and Sedunov (2016), who were the first to examine the effect of a government bailout programme specifically on systemic risk rather than on individual bank behaviour.

Using difference-in-differences analysis across US banks from 2005 to 2012, they found that TARP significantly reduced recipient banks' contributions to systemic risk, primarily by reducing leverage through the capital cushion channel. However, their dynamic analysis shows that these effects were concentrated in 2009 and had largely

dissipated by 2012, suggesting the benefits were temporary. They also found that bailouts worked best for larger, healthier banks in stronger economies, with weaker institutions showing little improvement.

Crucially, the study is confined to the US and the authors explicitly call for research in other jurisdictions. Furthermore, their analysis ends in 2012, before the longer-run consequences of the post-crisis regulatory environment could be assessed. This paper attempts to address both gaps.

On the theoretical side, Dell'Ariccia and Ratnovski (2013) offer an important counterpoint to the standard moral hazard narrative. Most theoretical work treats bailouts as unambiguously damaging to incentives; if banks expect to be rescued, they take more risk.

They show that when contagion risk is present, bailouts do not simply encourage risk taking. They also provide what the authors call a systemic insurance effect. A bank facing the threat of failure through no fault of its own, simply because another institution collapsed and spread distress through the system, has weaker incentives to manage its own risk carefully. Government intervention that credibly contains contagion restores those incentives.

The net effect therefore depends on which force dominates: when bailout rents are low and contagion risk is high, systemic insurance prevails and bailouts can reduce risk taking across the system. This has direct relevance to the European context, where interventions varied considerably in how much value they preserved for bank shareholders, and where sovereign debt contagion created precisely the kind of system-wide risk individual banks could not manage alone.

Taken together, these studies suggest that the effect of bailouts on systemic risk is not fixed but conditional. The question this paper addresses is what conditions determine which effect dominates.

III. Methodology

This paper proceeds as a theoretical and comparative analysis rather than an original empirical study. The frameworks of DiD and synthetic control inform how the existing empirical literature is interpreted and structured, rather than being applied to new data directly.

This paper applies the analytical logic of difference-in-differences and synthetic control methods to examine the effect of government bailouts on systemic risk across two distinct episodes: the US Troubled Asset Relief Program and the 2012 Spanish bank recapitalisation. Both samples cover the period 2006 to 2015, extending beyond existing empirical work and allowing for assessment of longer-run effects on risk-taking behaviour.

Systemic risk is measured using two complementary metrics. CoVaR, developed by Adrian and Brunnermeier, captures the marginal contribution of an individual institution to system-wide risk by estimating how financial system losses change when a specific bank is in distress. SRISK, developed by Acharya, Engle and Richardson, measures the expected capital shortfall of a bank conditional on a severe market downturn, incorporating size, leverage, and correlation with the broader market. In simple terms, these two measures ask different but related questions: how much trouble a bank's distress would cause everyone else, and how underprepared it would be when a crisis hits. Using both measures provides a more complete picture than either would alone, since they capture different dimensions of systemic exposure.

The difference-in-differences framework compares the systemic risk contributions of bailed-out banks against a control group of non-bailed-out banks, before and after the intervention. The key identifying assumption is that in the absence of the bailout, treated and control banks would have followed similar trends in systemic risk. The synthetic control method complements this by constructing a weighted combination of control banks that closely matches each treated bank's pre-intervention characteristics, providing a more precise counterfactual than a simple comparison group. Where difference-in-differences asks what happened on average, synthetic control asks what would have happened to a specific bank had it never been bailed out.

Were this analysis to be conducted empirically, the appropriate data sources would include data on systemic risk measures drawn from the NYU Stern Volatility Lab, bank-level balance sheet data for the US sample sourced from Federal Reserve Call Reports, and for the European sample from Bankscope and ECB consolidated banking statistics.

Several limitations are worth acknowledging. First, bailout allocation is not random. Banks that received support were often selected because they were already in worse shape than their peers, which introduces selection bias and complicates causal identification. The synthetic control method partially addresses this, but cannot fully resolve it. Second, the systemic risk measures used here, CoVaR and SRISK, are based on the market and use data on stock prices. This means that they might not see risks that are building up in less obvious parts of the financial system, like lending between banks or exposures off the balance sheet. Lastly, comparing the US and

Spanish episodes is challenging because they have different rules and ways of intervening, but it makes the analysis more insightful.

IV. Results

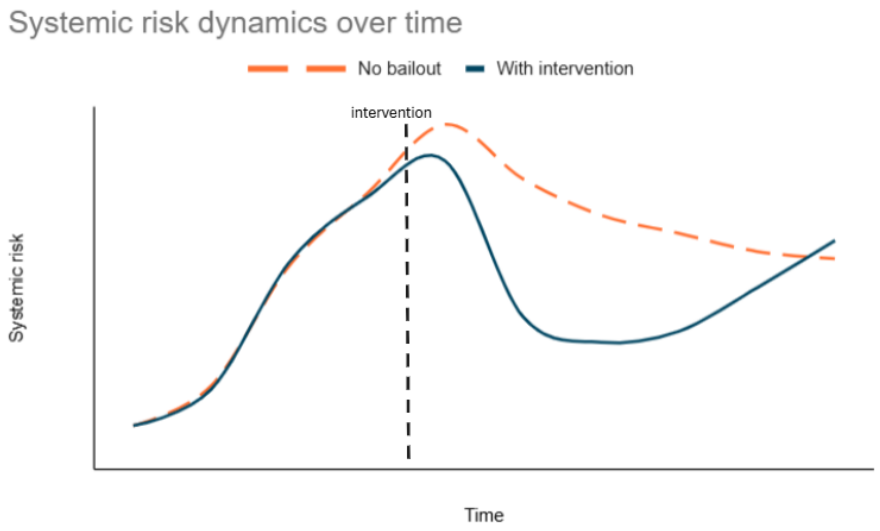
The evidence considered in this paper suggests that government bailouts can stabilise the financial system in the short run, but that this stability is neither permanent nor unconditional. In both the US and Spanish cases, the immediate effect of intervention is a reduction in systemic risk contributions, reflected in falling CoVaR and SRISK measures as capital is injected and contagion is contained. Bailouts, in this sense, work. The problem is what comes next.

As Berger, Roman and Sedunov (2016) document for the US case, the risk-reducing effects of TARP were concentrated in the heart of the crisis and had largely reversed by 2012. The Spanish experience points to a similar dynamic, complicated further by the weaker resolution framework and higher bailout rents that characterised European interventions. Where governments left more value in the hands of failing bank shareholders, the systemic insurance benefits identified by Dell'Ariccia and Ratnovski (2013) were less likely to materialise, and the moral hazard costs more likely to dominate over time.

V. Discussion

The broader implication is that bailouts do not eliminate systemic risk. They buy time, and whether that time is used well depends on how the intervention is designed and what comes after it. A bailout that injects capital cleanly, wipes out shareholders, and is accompanied by meaningful regulatory reform is a fundamentally different instrument from one that preserves incumbent interests and signals unconditional future support. The former may genuinely reduce long-run vulnerability. The latter shifts risk forward, allowing instability to rebuild quietly until the next crisis.

This paper has examined only two episodes, and the conclusions should be interpreted with that limitation in mind. But the contrast between them is instructive. The question facing policymakers is not simply whether to intervene, but how to intervene in ways that stabilise the present without mortgaging the future.



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