## -ATTHERICHMOND FED

## What to Do When Large Firms Fail

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## **Highlighted Research**

"On the Measurement of Large Financial Firm Resolvability." Arantxa Jarque, John R. Walter, and Jackson Evert. Working Paper No. 18-06R, February 2018 (revised July 2018).

The financial crisis of 2007-2008 confronted policy-makers with the question of how to handle large firms that get into financial trouble. During the crisis, some failing firms went through bankruptcy, but others were rescued by emergency loans or other forms of support from the government.

There are costs to either choice: Bankruptcy may leave a substantial mess in terms of costs on other financial market participants or the overall economy. For example, there could be "fire sales," when large quantities of assets are sold quickly to raise funds, causing asset prices to fall. Costs also could arise through "contagion," when firms have a financial or operational relationship such that the failure of one disrupts others. Bailouts, on the other hand, minimize those spillovers, but they create potentially more costs in the future by providing an incentive to take risks in the first place.

It's not an easy choice, and how policymakers make the decision has historically not been transparent. Two Richmond Fed economists, Arantxa Jarque and John Walter, aided by former research associate Jackson Evert, have proposed a tool that could help. Jarque and Walter created a framework for weighing the trade-offs using objective metrics.

"Many aspects of the potential costs of a firm's failure are hard to measure, for example, the likely magnitude of fire sales," explains Walter. "But it is reasonable to think those hard-to-measure costs are correlated with characteristics that we can objectively measure, such as a firm's use of financing tools that may be most subject to fire sales."

The researchers combined various firm characteristics — such as their connections to other firms and reliance on certain types of debt contracts — into an overall "impact score" that represents the costs of a firm's failure. In principle, this allows a comparison between the impact score from bankruptcy and the impact score from bailouts. If the score under bankruptcy is lower, that firm is "resolvable" in the sense that a hypothetical policymaker would not choose bailouts. But if the bankruptcy score is higher, one implication could be that regulators and firms may want to consider changes to avoid bailouts.

Their score design accounts for the fact that policy-makers may have different views on how the financial

system works. That may influence whether they prefer bankruptcy to bailout. Jarque and Walter illustrated how these differences of opinion may affect a policymaker's decision by computing the score for different hypothetical policymakers — for example, one who believes firm size is the most important variable and one who doesn't believe fire sales are important.

Overall, the framework provides a tool that could help policymakers choose between bankruptcy and bailout. Such a tool also could make the decision more transparent to the public and hold policymakers accountable, which were concerns many observers raised during the 2007-2008 crisis.

As they dove into the research, Walter says he was fascinated to learn in detail how large, globally systemic institutions differ from one another in their financial structure and activities. "It was challenging to very carefully think through which financial characteristic of a firm might produce which impacts on the financial system — for example, which items are related to fire sales and which to contagion. The academic literature is still working through these issues."

There remains more they would like to do with the score. "Many of the measurable characteristics that we put in the score were not measured for these firms back when they got in trouble," Jarque says. "This prevents us from using past failures to learn about the views of past policy-makers and from validating our score by comparing firms that failed and those that didn't. We would like to explore a simplified version of the score that would allow us to use historical data in this way."

The work adds to a body of work at the Richmond Fed on the effects of large firm failures and the "too big to fail" problem. Walter helped create the "Bailout Barometer," a measure of the share of the financial system that has benefited from bailouts — one gauge of future risk. And Jarque has studied living wills, the plans large financial firms have been required to make describing how they could be wound down without government support in the event of failure. Living wills are another tool for minimizing bankruptcy costs and avoiding bailouts.

All this work supports a better understanding of financial stability. "Our bank examiners, our analysts who work with banking data, and many other people around the Fed System and at the Federal Deposit Insurance Corporation do tremendous work in monitoring large systemic financial institutions," Jarque says. "We learned a lot from talking to them and reading about the evolution of their approach to evaluating living wills, for example. It is inspiring for future research."