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A theory of failed bank resolution: Technological change and political economics

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ABSTRACT

We model the failed bank resolution process as a repeated game between a utility-maximizing government resolution authority (RA) and a profit-maximizing banking industry. Limits to resolution technology and political/economic pressure create incentives for the RA to bail out failed complex banks; the inability of the RA to credibly commit to closing these banks creates an incentive for bank complexity. We solve the game in mixed strategies and find equilibrium conditions remarkably descriptive of government responses to actual and potential large bank insolvencies during the recent financial crisis. The central role of the technology constraint in this model highlights a crucial determinant of failed bank resolution policy that has been overlooked in the theory literature to date; without improved resolution technologies, future bank bailouts are inevitable. The effects of political pressure in this model remind us that regulatory reform (e.g., Dodd-Frank) is only as good as the regulators that implement the reform.

1. Introduction

Government bailouts of large insolvent financial institutions was one of the most critical and controversial events of the recent international financial crisis. While the details of these bailouts differed, the underlying policy motivations were the same: to prevent the financial troubles at single institutions from spreading to other parts of the financial system, thus avoiding a collapse of credit markets and disastrous macro-economic consequences. By guaranteeing that creditors of these institutions suffered few if any losses, policymakers struck an implicit bargain with the financial system: preserve financial market liquidity today at the cost of increasing the moral hazard incentives of financial market participants in the future. In other words, policymakers traded market discipline in exchange for market liquidity.

We explore the implications of this policy tradeoff for the risk composition of the banking industry. In our theory model, we stress a crucial determinant of policy that has received scant attention in the previous literature: the limited set of failed bank resolution technologies that can leave regulators with little choice but to bail out systemically important banks. Our study is timely, as the technology sets of bank resolution authorities—most notably the Federal Deposit Insurance Corporation (FDIC)—are in the process of expanding. For example, the Wall Street Reform and Consumer Protection Act of 2010 (a.k.a. the Dodd-Frank Act) expands the FDIC's resolution authority beyond insolvent banks, and gives the agency "orderly liquidation authority" to place systemically important financial companies of all types into receivership and liquidate them. Dodd-Frank also mandates that financial institutions perform more of their derivatives trading through centralized clearing houses and requires systemically important financial firms to file "living wills" with the FDIC—changes that improve the FDIC's ability to accurately value the assets, and better understand the production processes, of troubled complex banking firms.

But having authority to resolve insolvent banks is not equivalent to actually wielding that authority. Our model also emphasizes the likelihood that mounting political and/or economic pressure during a financial crisis can lead even a well-armed regulator to bailout systemically important banks. The public relations message that accompanied Dodd-Frank was clear and seemingly unequivocal. At bill's signing, President Obama said "The American people will never again be asked to foot the bill for Wall Street's mistakes. There will be no more taxpayer-funded bailouts. Period." Like most declarative statements, this one contains some wiggle room: ruling out "*taxpayer-funded* bailouts" does not rule out bailouts funded by some other third party and hence does not by itself reduce moral hazard incentives. Dodd-Frank provides a resolution mechanism

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in which losses are borne by stockholders and unsecured creditors at the insolvent firm, with losses larger than this shared across the entire banking industry. But this new structure is untested, and regulatory credibility will not be established until a firm previously considered "too big to fail" is closed and liquidated without creating a crisis in financial markets.

Our model is a straightforward, repeated game between a utility-maximizing resolution authority that chooses between closing and bailing out failed banks, and an expected profit-maximizing banking industry that chooses between simple (transparent, easy to unwind) and complex (opaque, difficult to unwind) loan production processes. The regulator values resolutions that generate both market discipline and market liquidity, but it is forced to trade the former for the latter (i.e., choose a bail out) when its resolution technology is insufficient to close a failed complex bank without imposing spillover costs on the macro-economy. The key innovation in our model is the inclusion of a technology constraint—a realistic condition not considered in previous models of bank resolution—and tightening or loosening this constraint provides key results. In equilibrium, insufficient resolution technology, combined with short-run political or economic pressure, support a too-complex-to-fail (TCTF) resolution policy; this inability of regulators to credibly commit to closing failed complex banks encourages continued or increased bank complexity. These conditions are remarkably descriptive of government responses to actual and potential large bank insolvencies before and during the recent financial crisis. Improvements in resolution technology have over time allowed the FDIC to close increasingly large and complex banks, but economic and political pressures during the financial crises resulted in resolution choices (e.g., allowing already TCTF banks to acquire insolvent TCTF banks) that exacerbated the gap between bank complexity and the ability of regulators to close failed complex banks. In the end, a deeper technological toolbox can be useless if regulators favor preserving short-run liquidity over imposing long-run discipline.

It is important to state what our model is *not* about. The banks in our model *do not* choose to be risky or safe; rather, they choose to be either complex or simple, where complexity is unrelated to the probability that a bank fails, but makes a bank difficult for regulators to unwind should it fail. Thus, the regulator in our model is *not* choosing its strategy in order to minimize moral hazard incentives that make banks more prone to take pre-failure risks, but rather to reduce the post-failure complexity that makes it necessary to bail out failed banks. These distinctions set our paper apart from most of the theoretical literature on bank failure regulation.

Because the U.S. has the longest history of deposit insurance and failed bank resolution, we couch our discussion of bank resolution authority in terms of the FDIC; nevertheless, our findings have clear implications for bank failure resolution outside the U.S. The remainder of the paper unfolds as follows. Section 2 reviews the historical tradeoff between preserving liquidity and imposing discipline in failed bank resolution policy in the U.S. Section 3 describes the techniques used by the FDIC to resolve failed banks and how this technology set has evolved over time, including during and after the financial crisis. (A substantially more detailed discussion of the material in Sections 2 and 3, along with an historical appendix, are available in the longer working paper version of this study.) Section 4 presents our theory model and analyzes its main results. Section 5 discusses the implications of our analysis for bank resolution policy.

2. Market liquidity versus market discipline

Commercial banks play a central role in our economy, but their inherent fragility requires special regulatory attention. Absent appropriate regulation, depositors and short-term creditors may withdraw their funds from banks experiencing declines in asset quality, prompting reductions in economic liquidity beyond the troubled banks themselves. Bank failures can also reduce liquidity by disrupting borrower access to credit (e.g., Ashcraft, 2005). Depending on the size and/or number of the affected banks, these disruptions to market liquidity can be debilitating for the economy at large.[1] Repeated banking panics in the United States during the nineteenth and early twentieth centuries led to the creation of the FDIC in 1934, a new federal agency with the mandate to insure bank deposits and the power to seize and quickly resolve failed banks. Deposit insurance reduced incentives for small depositors to run and precipitate bank failure, and bypassing lengthy bankruptcy proceedings for failed banks reduced disruptions to depositor liquidity, borrower liquidity and payments.

The potential cost of preserving liquidity in this fashion is the creation of moral hazard incentives and the resulting loss of market discipline. Like all regulatory solutions to market failure, deposit insurance protections and bank resolution procedures are second-best arrangements that result in incentive incompatibilities. Knowing (or suspecting) their deposits are protected from loss, insured (and to a lesser extent, uninsured) depositors have little incentive to monitor the financial condition of their banks, and have the perverse incentive to make deposits at troubled banks paying above-market interest rates. The deposit insurance put option gives managers of troubled banks incentives to "gamble for resurrection" by paying above-market rates for deposits and investing those funds in risky loans. Extending deposit insurance protection to all bank creditors in failed banks, or providing financial assistance to keep insolvent banks open, reduces market discipline further and exacerbates the risk-taking behaviors of both bank depositors and bank managers.

2.1. Regulator incentives

As a first principle, one might reasonably presume that government deposit insurers strongly identify with their mission of protecting insured depositors and, when administratively possible, this culture can easily err on the side of protecting uninsured depositors and non-deposit creditors as well. Such predilections may be exacerbated when political and/or economic pressures arise to prevent illiquidity at all costs—for instance, during economic crises when numerous large banks become insolvent. Whether or not these predilections rise to the level of serious principle-agent problems is the subject of some debate (Kane, 1990; Mishkin, 1992). Kane and Klingebiel (2004) weigh in with an especially cynical assessment: Regulators exhibit a bias toward bailing out all depositors because they do not want to be blamed (rightly or wrongly) for the bank failure by disgruntled (unprotected) depositors. Looking from a different angle, Kane (1995) shows how existing legal and regulatory arrangements (including the prompt corrective action features of the Federal Deposit Insurance Corporation Improvement Act of 1991) create incentives for regulators to practice forbearance.

Regardless of regulator motive, making uninsured depositors whole reduces deposit market discipline: it reinforces the incentives for depositors to lend to risky banks, and it enhances the value of the deposit insurance put option. Numerous proposals have been made for preserving market liquidity while still imposing at least a modicum of discipline on depositors. Kaufman and Seelig (2002) proposed a combination of quick access to insured deposit funds

[1] Hoggarth et al. (2002) estimate that the economic costs of a systemic bank failure event could run as high as 15–20% of a nation's GDP.