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Catharsis—The real effects of bank insolvency and resolution

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ABSTRACT

This paper analyzes the impact of rules-based bank insolvency resolution on real economic growth. Resolving insolvent banks can positively affect the real economy by overcoming moral hazard problems and improving banks' credit allocation and monitoring. We propose a new indicator to measure the strength of 'catharsis', i.e., how strictly banks are resolved, and use a large firm-level dataset to test its effect. We find that a relatively stronger implementation of bank resolution rules has a statistically and economically significant positive effect on firm growth – particularly with respect to firms that are structurally more dependent on bank financing. Our findings are robust to various specifications. Investigating the transmission channels of this 'catharsis effect' reveals that it essentially works by means of benefiting higher quality firms (quality channel) and reallocating credit to firms that need it most (quantity channel). Additional analysis suggests that the 'catharsis effect' works best in banking systems that offer access to international financing because such access mitigates the potentially negative credit supply effects of liquidating insolvent banks. Taken together, our findings indicate that more attention should be focused on developing incentive-compatible bank resolution regimes.

1. Introduction

In this paper, we test how strict and rules-based resolution of insolvent banks affects the real economy. Although the theoretical and empirical literature shows that financial intermediation generally has positive effects on the real economy, misled incentives for banks, their creditors, and regulators in connection with bank insolvency may distort banks' credit allocation and monitoring decisions. This may lead to suboptimal real economic performance. A strict and rules-based resolution of insolvent banks, however, might restore incentives in credit allocation and monitoring, which would result in positive effects for the real economy. Such a mechanism would be a manifestation of Schumpeter's concept of creative destruction in the financial sector: Insolvency and resolution regimes promote the efficient reallocation of resources and have a cleansing effect on financial intermediation. Therefore, we argue that insolvency and resolution can be thought of as a form of 'catharsis' in the banking system that cleans out moral hazard problems and distorted incentives.

Based on this rationale, we hypothesize that strict and rules-based regulatory insolvency leads to a 'catharsis effect': When insolvent banks that warrant legal closure in accordance with a prompt resolution rule are led into strict insolvency resolution, incentives in credit allocation are restored, which increases real economic performance. However, the strength and direction of the effect are a priori not obvious because positive real effects of restored incentives might be outweighed by negative credit supply effects of individual bank closures. Moreover, the effect is likely to vary across different types of firms and across different financial systems.

Thus, we subject our hypotheses to empirical testing and investigate whether such 'catharsis' in the banking system has an effect on the real economy and what the mechanisms and conditions of its operation are. We propose a new indicator to measure the strength of 'catharsis', i.e., how strictly insolvent banks are resolved, and use a firm-level dataset with more than 2 million firm-year observations to test its effect on firm growth. However, research into the real economic implications of the financial system is frequently subject to concerns about causality and endogeneity. We attempt to overcome these concerns and to establish causality with a three-step identification strategy. We begin with a regression model that exploits the panel characteristics of our dataset, employ an instrumental variable setup, and finally utilize an interaction approach, which presumes that firms that are more dependent on

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bank financing will experience stronger growth when the resolution regime for insolvent banks is stronger compared with firms that depend less on bank financing.

We find that a relatively stronger implementation of bank resolution rules has a statistically and economically significant positive effect on firm growth – particularly for firms that are structurally more dependent on bank financing. Our findings are robust to various specifications. An investigation of the transmission channels of the 'catharsis effect' reveals that it essentially works by means of benefiting higher quality firms and reallocating credit to firms that need it most. Additional analysis suggests that the 'catharsis effect' works best in banking systems that offer access to international financing because such access mitigates the negative credit supply effects of liquidating insolvent banks.

This paper contributes to the empirical literature at the intersection of three areas of research. First, it augments previous research on the real effects of the structure and conduct of financial intermediation. Significant contributions have thus far evaluated the economic effects of foreign bank entry and financial integration (Giannetti and Ongena, 2009), bank competition (Cetorelli and Strahan, 2006; Cetorelli, 2004), deregulation (Bertrand et al., 2007), bank efficiency (Hasan et al., 2009), and systemic banking crises (Dell'Ariccia et al., 2008; Kroszner et al., 2007; Rancière et al., 2008). To the best of our knowledge, the effects of bank insolvency and resolution regimes on real economic performance have not been empirically evaluated thus far. Second, this paper contributes to the literature on alternative treatments of failing banks. Whereas the effects of various accommodating policies have attracted a significant amount of attention (Black and Hazelwood, 2013; Claessens et al., 2005; Dam and Koetter, 2012; Giannetti and Simonov, 2013; Honohan and Klingebiel, 2003; Laeven and Valencia, 2013), there remains a lack of conclusive empirical evidence about the real effects of cleansing resolution regimes. Third, this paper adds to the literature that evaluates the implications of bank insolvency. Previous research examines the effects of insolvency on bank behavior (Caballero et al., 2008; Peek and Rosengren, 2005; Igan and Tamirisa, 2008), regulatory behavior (Brown and Dinç, 2011; Imai, 2009), and individual bank customers (Djankov et al., 2005). We attempt to complement the empirical literature by testing for the implications of rules-based bank insolvency regimes for firm growth.

The remainder of this paper is organized as follows. Section 2 discusses the related literature from which our motivation and hypotheses result. In Section 3, we introduce our model and identification strategy. The dataset, our proposal of a bank catharsis indicator, and descriptive statistics are presented in Section 4. In Section 5, the results of the analyses are presented along with analytical extensions on the transmission mechanisms and conditions of operation of the 'catharsis effect'. These are complemented with several robustness tests in Section 6. Section 7 concludes.

2. Related literature and hypotheses

Banks generally contribute to the performance of the real economy by collecting, transforming, allocating, and monitoring credit in its most productive uses, thereby improving the efficiency of capital allocation and reducing the cost of external financing (Beck et al., 2000; Levine, 2005). This link between financial intermediation and the real economy has been empirically established in the literature (Fisman and Love, 2007; King and Levine, 1993; Rajan and Zingales, 1998). However, there are sources of market failure in financial intermediation. For example, agency problems and moral hazard distort incentives and lead to economically suboptimal outcomes that materialize in the misallocation of credit or in the inherent fragility of the financial system. One area of particular concern is the treatment of distressed banks, particularly with respect to the resolution of insolvent financial institutions. The previous literature analyzes several dimensions in which the treatment of failed banks can establish or distort incentives and thereby influence the behavior of financial intermediaries, which ultimately has an impact on the real economy:

- First, banks may exhibit distorted incentives arising from their anticipated treatment in the case of insolvency. Because bank failures are associated with strong negative externalities, individual banks may not need to fear bankruptcy but can anticipate a bailout based on implicit or explicit government guarantees. This can lead not only to intentional (excessive) risk-taking (Beltratti and Stulz, 2012; Fortin et al., 2010) and the unsound inflating of balance sheets (Demirgüç-Kunt and Detragiache, 2005) but also to insufficient screening and monitoring of borrowers (Dell'Ariccia and Marquez, 2006) and incentives to create excessive complexity (DeYoung et al., 2013). Consequently, distorted and suboptimal credit allocation and monitoring may result in negative effects on the real economy.
- Second, in addition to individual bank behavior, Acharya and Yorulmazer (2007) and Acharya (2009) model how the time-inconsistency of bank closure decisions can lead to incentives for banks to herd into the same asset classes in an effort to be 'too-many-to-fail' – effectively creating systemic risk. Empirical evidence supports their predictions by showing that governments are less likely to close or take over a bank if the entire banking system is in crisis (Brown and Dinç, 2011; Kasa and Spiegel, 2008) and that banks tend to herd in times of low capitalization (Stever and Wilcox, 2007). Such herding behavior distorts the credit allocation and monitoring functions of financial intermediaries because it leads to a concentration on particular asset classes that may not necessarily be merited by economic considerations.
- Third, incentive distortions that have detrimental effects on the real economy can also arise when a bank is severely undercapitalized or about to fail. In such a situation, a financial intermediary can be seen as an option to its owners that is more or less out of the money and that can only create value through volatility. Thus, the incentives grow to further substitute risk for economic soundness in an effort to 'gamble for resurrection' (Freixas and Rochet, 2008; Marinc and Vlahu, 2011). Distressed banks may also discontinue effective credit monitoring and roll over nonperforming loans (Igan and Tamirisa, 2008; Peek and Rosengren, 2005; Rajan, 1994), which will eventually depress economic growth (Caballero et al., 2008), or even engage in 'looting', i.e., channel funds to related firms (Akerlof and Romer, 1993; La Porta et al., 2003). Leaving banks at low net worth could also harm economic growth by raising the agency cost of finance and suppressing investment. Such effects are similar to those described in Bernanke and Gertler's Bernanke and Gertler (1990) concept of financial fragility.
- Fourth, when banks' lending decisions are prone to moral hazard, banks' creditors might be considered a disciplining force. However, little monitoring and disciplining are exerted by depositors that are typically small, dispersed, and properly insured by a deposit insurance system (Demirgüç-Kunt et al., 2008; Demirgüç-Kunt and Huizinga, 2004; Calomiris and Kahn, 1991; Kaufman, 2006). The disciplining role of debtholders is also dubious when the expectation of (implicit) bailout guarantees gives such debtholders little incentive to monitor the banks or to adjust risk premiums accordingly (Acharya et al., 2013; Bliss and Flannery, 2002; Gropp and Richards, 2001; Morgan and Stiroh, 1999). Creditors that share the rents from bank risk-taking may