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Financial contracting with enforcement externalities ☆

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Abstract

We study the negative feedback loop between the aggregate default rate and the efficacy of enforcement in a model of debt-financed entrepreneurial activity. The novel feature of our model is that enforcement capacity is accumulated ex ante and thus subject to depletion ex post. We characterize the effect of shocks that deplete enforcement resources on the aggregate default rate and credit supply. In the model default decisions by entrepreneurs are strategic complements, leading to multiple equilibria. We propose a global game selection to overcome equilibrium indeterminacy and show how shocks that deplete enforcement capacity can lead to a spike in the aggregate default rate and trigger credit rationing.
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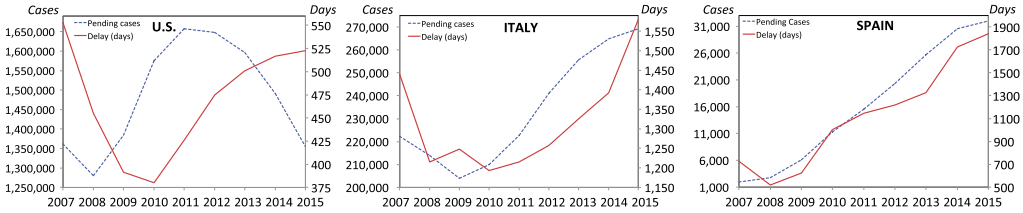

Fig. 1. Default Cases Pending in Court (left axis) and Enforcement Delay (right axis). Notes: The figure illustrates pending individual and corporate bankruptcies in the U.S., corporate property executions in Italy, and commercial bankruptcies in Spain (see data sources in the Online Appendix). The red line plots a popular aggregate measure of efficacy of court enforcement: $Delay_t = 365$*(Pending cases as of the beginning of the year + pending cases as of the end of the year)/(new cases + closed cases). In stationary equilibrium the measure returns the approximate number of days it takes to solve a case. A persistent increase in this measure indicates lower efficacy of the court system. (For interpretation of the colors in the figure(s), the reader is referred to the web version of this article.)

1. Introduction

Financial crises are in part propagated by disrupted enforcement and liquidation mechanisms in credit markets. For example, during the 2007 financial crisis, the lack of timely enforcement has been deemed central to the understanding of the U.S. foreclosure glut as well as the depressed credit conditions in Italy and Spain.[1] In fact, in all three countries the crisis resulted in a groundswell of pending court cases that had a well-documented negative impact on the efficacy of enforcement (Fig. 1). The 2007 crisis is hardly an isolated episode. The role of enforcement has long been stressed as important in propagating financial crises by public policy practitioners.[2]

A number of empirical studies provide direct evidence in support of causal linkages between enforcement and credit market outcomes. For example, Schiantarelli et al. (2016) look at Italian firms that simultaneously owed loans both to banks in jurisdictions with weak enforcement and to banks in jurisdictions with strong enforcement to conclude that weaker enforcement induced strategic default.[3] In a similar vein, Iverson (2017) uses variation in bankruptcy court caseload to show that delayed enforcement has been associated with higher creditor losses. Based on a natural experiment, Mayer et al. (2014) argue that strategic considerations were an important factor fueling the U.S. subprime crisis. Finally, Ponticelli and Alencar (2016) and Rodano et al. (2016) relate enforcement to the availability of credit, supporting the well-documented cross-sectional correlations (Jappelli et al., 2005; La Porta et al., 1998; Djankov et al., 2007, 2008; Bae and Goyal, 2009).

Despite renewed interest in the role of enforcement mechanisms in propagating financial crises, and mounting empirical evidence, theoretical treatments of the issue remain scant. In par-

[1] See Cordell et al. (2015) for a discussion of foreclosure delays in the U.S. during the great recession. In this context, Chan et al. (2016) estimate that a foreclosure delay of nine months is associated with a 40% higher default rate on underwater mortgages while controlling for a wide array of confounding factors. Zhu and Pace (2015) find that a delay of three months increases the probability of default by 30%. Using a quantitative model, Herkenhoff and Ohanian (2015) estimate that foreclosure delays added 25% to the delinquency rate during the crisis. Carpinelli et al. (2016) document that judiciary backlogs were the primary factor behind the slower resolution of non-performing loans during this time period in Italy. The Bank of Italy (2013) documents that the average time to write off bad debt from banks' balance sheets went up from less than 4 years to over 6 years in Italy between 2007 and 2011.

[2] For example, Woo (2000), Enoch et al. (2001) and also Krueger and Tornell (1999).

[3] Ippolito et al. (2016) study repayment of loans owed to European banks differentially affected by the crisis and report similar findings. Favara et al. (2012) provide related cross-country evidence.

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