Bank Runs: Disclosure and Economic Linkages
Extended Abstract

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Early and transparent risk communication to the population has been implemented in many domains, and has been requested for others. Most recently, in the wake of the financial crises, so-called stress tests of the financial systems have been conducted with the goal of probing the ability of financial institutions to withstand large, unexpected shocks to different (macro-)economic factors. Publication of stress test results has been debated controversially by economists and policy makers alike (Goldstein and Sapra 2014, Foundations and Trensds in Finance). While disclosure of risk information should, from a rational point of view, allow people to make better decisions in the presence of uncertainty (Blackwell 1951, Proceedings of the second Berkeley symposium on mathematical statistics and probability; Eeckhoudt and Godfroid 2000, Journal of Economic Education), behavioral phenomena, such as under- and overreaction to information and learning opportunities, may lead to undesired outcomes (Trautman and Zeckhauser, 2013, Games and Economic Behavior).

In this project, we focus on the seminal Diamond-Dybvig (1983, Journal of Policial Economy) model of panic-based bank runs and study two distinct aspects in laboratory experiments. The main focus of the first part of our project lies on understanding how different levels of information disclosure, rather than disclosure per se, affect depositors withdrawal decisions and ultimately the occurrence of bank runs. In the experiment, good as well as bad news may be revealed to depositors. In addition to studying whether depositors correctly update their beliefs and adjust their decisions in response to the information which is disclosed, we are also able to check for any effects of unanticipated positive or negative revelations. Gaining a detailed understanding of the individual effects of information disclosure about fundamentals is necessary to formulate suitable policy recommendations. Insights into the interaction of disclosure effects with the nature of the disclosed information, i.e. whether it is good or bad news, may also provide arguments for the policy debate on whether mandatory risk disclosure should depend on the current economic environment.

In the second part, we study the possibility of financial contagion, which originates from an inadequate updating of beliefs, rather than the observation of other depositors' behavior. We

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ask how different degrees of linkages between banks interact with the information disclosure to affect depositors' withdrawal decisions in banks with no information available. Our laboratory experiments allow us to identify the underlying expectation mechanisms and contagion pathways triggered by disclosure and information on linkages.

Concerning the disclosure aspect, depositors receive a signal about the fundamentals of their bank and subsequently take the decision to either keep their money in the account or withdraw it. The signal tells depositors how likely their bank has strong, medium or weak fundamentals. Across three different conditions, we systematically vary the signal from uninformative, via partially informative, to fully informative in order to assess whether depositors make decisions which are in line with the disclosed information. We model banks as three player coordination games with participants taking the role of depositors. Throughout the disclosure part of the experiment, we also elicit participants' beliefs about how the other depositors will decide for their account and track their confidence in this judgement. Eliciting belief data enables us to get a glimpse at the thought process of participants and helps us to better understand the way in which information disclosure affects decision-making in the bank run setting. Our experimental setting allows us to cleanly differentiate between different levels of certainty about the banks' underlying fundamentals and its effects on depositor behavior. The results of this part may support the formulation of policy recommendations with regard to the disclosure of risk information.

The second aspect of panic-based bank runs that we study in this project is the possibility of financial contagion. Specifically, we consider contagion which is driven by an inadequate transfer of the information disclosed about one institution to another one. This way of looking at contagion stands in contrast to the more often considered channel based on the observation of other depositors' previous behavior (e.g. in a queue). In this research project, we treat contagion as a process that occurs within person. Within this framework, contagion cannot be a manifestation of other common behavioral phenomena, such as of herd behavior, but is purely driven by an inadequate updating of beliefs. To study this aspect, participants in our experiment become depositors to a second bank, which may have economic linkages to the first. Across two conditions, we vary how strongly the fundamentals correlate between depositors' two banks. We inform depositors about the likelihood of their second bank having the same fundamentals as their first bank and then task them to make a keep-or-withdraw decision. As in the first part of the experiment, we elicit participants' beliefs with regard to the withdrawal

decisions of their fellow depositors and specifically ask participants to indicate their perceived likelihood of the second bank having the same fundamentals as the first one.

In our no-linkages condition, the correlation between bank fundamentals is zero. Consequently, disclosure about the fundamentals of the first bank should not affect the beliefs about the second bank's fundamentals as well as the respective withdrawal decision. Only if depositors transfer disclosure information from one financial institution to the other one (inadequately), we should observe a change in beliefs and withdrawal decisions and thus financial contagion. Conditioning the analysis on the information disclosed about the first institution provides us with the opportunity to assess in which informational context financial contagion is most likely to occur. In addition, we also consider a partial-linkages condition where the correlation of fundamentals is non-zero. This condition allows us to check whether depositors are able to correctly update their beliefs about the second bank's fundamentals in a setting where it is actually appropriate to do so. Any under- or over-reactions by depositors should show up in deviations of reported beliefs from the Bayesian benchmark based on updating of probabilities.