



# The transparency of the banking system and the efficiency of information-based bank runs

Yehning Chen <sup>a,\*</sup>, Iftekhar Hasan <sup>b,c</sup>

<sup>a</sup> *Department of Finance, College of Management, National Taiwan University, Taiwan*

<sup>b</sup> *Lally School of Management and Technology, Rensselaer Polytechnic Institute, USA*

<sup>c</sup> *Bank of Finland, Helsinki, Finland*

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## Abstract

In this paper, we investigate the relationship between the transparency of banks and the fragility of the banking system. We show that information-based bank runs may be inefficient because the deposit contract designed to provide liquidity induces depositors to have excessive incentives to withdraw. An improvement in the transparency of a bank may reduce depositor welfare by increasing the chance of an inefficient contagious run on other banks. A deposit insurance system in which some depositors are fully insured and the others are partially insured can ameliorate this inefficiency. Under such a system, bank runs can serve as an efficient mechanism for disciplining banks. We also consider bank managers' control over the timing of information disclosure, and find that bank managers may use their influence to eliminate both inefficient and efficient bank runs.

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## 1. Introduction

Imposing market discipline to alleviate the banks' moral hazard problems has become an important part of bank regulations around the world. In the new Basel Capital Accord, market discipline is recognized as one of the three "pillars" of the new regulation framework. As stated

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\* Corresponding author.

*E-mail address:* [ynchen@ntu.edu.tw](mailto:ynchen@ntu.edu.tw) (Y. Chen).

in a consultative document of the Basel Committee, "... market discipline has the potential to reinforce capital regulation and other supervisory efforts to promote safety and soundness in banks and financial systems. Market discipline imposes strong incentives on banks to conduct their business in a safe, sound, and efficient manner."<sup>1</sup>

Although market discipline has the benefit of reducing the banks' incentive problems, it may increase the fragility of the banking system. To implement market discipline, banks must become transparent so that market participants have precise information about banks. However, as depositors learn more about their banks, they may react to adverse information and start bank runs more frequently. As suggested by Diamond and Dybvig (1983), Chari and Jagannathan (1988), and Chen (1999), bank runs may be inefficient and could reduce depositor welfare. If improvements in the transparency of banks lead to inefficient bank runs,<sup>2</sup> then the welfare losses caused by this effect should be taken into account when regulators consider whether to impose more market discipline in the banking industry.

The purpose of this paper is to investigate the relationship between the transparency of banks and the efficiency of bank runs. Specifically, we ask the following questions.

- (1) Is it possible that, by increasing the likelihood of an inefficient bank run, an improvement in the transparency of the banking system could reduce depositor welfare?
- (2) If the answer to question (1) is yes, is there anything that regulators can do to mitigate this problem?
- (3) How will bank managers who dislike bank runs use their influence on the banks' information disclosure decisions to affect the efficiency of bank runs?

To answer these questions, we build a simple model with two banks and atomistic depositors. In this model, the banks' returns are positively correlated, and interim information about them will be revealed. Depositors decide whether to withdraw early according to their liquidity needs and the information they have about banks. As in Diamond and Dybvig (1983) and Chen (1999), in our model the deposit contract is designed to provide liquidity, so the amount received by an early withdrawing depositor is larger than the liquidation value of her deposits. This arrangement induces depositors to have excessive incentives to withdraw early. Under this setting, bank runs can serve as a disciplining mechanism for liquidating poor banks, but may happen too frequently because of the depositors' excessive incentives to withdraw. Also, since the banks' returns are positively correlated, contagious runs can occur. That is, depositors of a bank may start a bank run when they learn adverse information about the other bank.

Based on the above model, we obtain the following results:

- (1) By increasing the chance of an inefficient contagious run, an improvement in the transparency of banks may reduce depositor welfare.
- (2) There is a deposit insurance system that can eliminate inefficient bank runs. Under this deposit insurance system, some depositors are fully insured and the remaining ones are partially insured. When this system is imposed, improvements in bank transparency always increase depositor welfare.

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<sup>1</sup> Basel Committee on Banking Supervision (2001, p. 1).

<sup>2</sup> Please see Section 3.2 for the definitions of inefficient bank runs.

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