



Run equilibria in the Green–Lin model of financial intermediation

Huberto M. Ennis^{a,b}, Todd Keister^{c,*}

^a *Department of Economics, Universidad Carlos III de Madrid, Calle Madrid 126, Getafe (Madrid) 28903, Spain*

^b *Research Department, Federal Reserve Bank of Richmond, PO Box 27622, Richmond, VA 23261, USA*

^c *Research and Statistics Group, Federal Reserve Bank of New York, 33 Liberty Street, New York, NY 10045, USA*

Received 30 July 2008; accepted 4 May 2009

Available online 3 June 2009

Abstract

We study the Green–Lin model of financial intermediation [E.J. Green, P. Lin, Implementing efficient allocations in a model of financial intermediation, *J. Econ. Theory* 109 (2003) 1–23] under a more general specification of the distribution of types across agents. We derive the efficient allocation in closed form. We show that, in some cases, the intermediary cannot uniquely implement the efficient allocation using a direct revelation mechanism. In these cases, the mechanism also admits an equilibrium in which some (but not all) agents “run” on the intermediary and withdraw their funds regardless of their true liquidity needs. In other words, self-fulfilling runs can arise in a generalized Green–Lin model and these runs are necessarily partial, with only some agents participating.

© 2009 Elsevier Inc. All rights reserved.

JEL classification: D82; G21

Keywords: Bank runs; Implementation; Private information; Multiple equilibria; Correlated types

1. Introduction

Bank runs and financial panics are often thought to be self-fulfilling phenomena, in the sense that individuals withdraw their funds in anticipation of a crisis and, together, these individual actions generate the crisis that everyone feared. A substantial literature has arisen asking whether or not, and under what circumstances, a self-fulfilling bank run can be the outcome of an economic

* Corresponding author.

E-mail addresses: hennis@eco.uc3m.es (H.M. Ennis), todd.keister@ny.frb.org (T. Keister).

model with optimizing agents and rational expectations. Early contributions to this literature assumed particular institutional arrangements, such as a bank offering a demand-deposit contract. In an influential recent paper, Green and Lin [6] study a model very much in the spirit of the classic work of Diamond and Dybvig [4] but with no restrictions on contracts other than those imposed by the physical environment. Their key departure from the previous literature is to assume that agents have information about the order in which they will have an opportunity to withdraw. They derive a striking result: in their environment, the efficient allocation can be uniquely implemented. In other words, a financial intermediary can offer a contract that guarantees that the efficient outcome will obtain in equilibrium, leaving no possibility of a self-fulfilling run.

We study the Green–Lin model under a more general specification of the distribution of preference types across agents. Whereas Green and Lin [6] assume that consumption needs are independent across agents, we allow for correlation. We show how the efficient allocation in this environment can be found by solving a finite dynamic-programming problem, and we derive this allocation in closed form. We then construct examples with the following properties. The efficient allocation is (Bayesian) incentive compatible and, hence, can be implemented by a direct revelation mechanism in which each agent reports his preference type to the intermediary. However, this mechanism also admits an equilibrium in which some, but not all, agents run on the intermediary and withdraw – claiming an immediate consumption need – regardless of their true type. In other words, we show that self-fulfilling runs *can* emerge in a generalized Green–Lin model, and that these runs are necessarily *partial*, with only some agents participating.

In the examples we construct, it is unlikely that all agents in the economy will face an immediate need to consume. Once a large number of withdrawals have taken place, therefore, the intermediary will infer that few of the remaining agents have immediate consumption needs. If some agents withdraw even though they do not need to consume right away, this inference will be incorrect. In other words, when some agents run, their actions tend to make the intermediary unduly optimistic about the consumption needs of the *remaining* agents. The intermediary will then conserve relatively few resources for future withdrawals. When the intermediary discovers that the consumption needs of the remaining agents are higher than anticipated, it will decrease all subsequent payments to agents, including the future payments to agents who have chosen not to withdraw.

Suppose, then, that an individual believes that the agents who have an opportunity to withdraw before she does will all run. She recognizes that if she does not withdraw, the payment she receives from the intermediary in the future will likely be small, which gives her an incentive to join the run and withdraw right away. Notice that this incentive applies even if she believes the agents who come after her will *not* participate in the run. The key point is that some of these agents may truly have immediate consumption needs and, given her beliefs about these agents' types, the intermediary has kept inadequate resources to deal with those needs. This incentive to run only applies if an individual's withdrawal opportunity is early enough, that is, if sufficiently many agents will contact the intermediary after her. As emphasized by Green and Lin [6,7], an agent who knows he is the last to contact the intermediary never has an incentive to run. For this reason, the run equilibria we construct are necessarily partial; agents who are able to withdraw early do so, while those who act later only withdraw if they have an immediate consumption need.

Notice that the effects described above disappear when types are assumed to be independent, as in Green and Lin [6]. When an agent withdraws in that case, the action has no effect on

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات