



# Mutual loan-guarantee societies in monopolistic credit markets with adverse selection

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## ABSTRACT

In many countries, Mutual Loan-Guarantee Societies (MGSs) are assuming ever-increasing importance for small business lending. In this paper we provide a theory to rationalize the *raison d'être* of MGSs. The basic intuition is that the motivation for MGSs lies in the inefficiencies created by adverse selection, when borrowers do not have enough wealth to satisfy collateral requirements and induce self-selecting contracts. In this setting, we view MGSs as a wealth-pooling mechanism that allows otherwise inefficiently rationed borrowers to obtain credit.

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## 1. Introduction

In the words of the European Commission (2005, p. 10), Mutual Loan-Guarantee Societies (from now on MGSs) are “collective initiatives of a number of independent businesses or their representative organizations. They commit to granting a collective guarantee to credits issued to their members, who in turn take part directly or indirectly in the formation of the equity and the management of the scheme”.

Like other types of public and private partial guarantee schemes around the world, MGSs are assuming ever greater importance in small business lending (Beck et al., 2010). For example, according to the Association Européenne du Cautionnement Mutuel (see Fig. 1), in 2009 their member systems, represented by 34 federations of MGSs operating in 17 EU countries, granted 855,000 guarantees for 34 billion euros, reaching a total volume of guarantees in portfolio greater than 70 billion euros held with more than 1.8 million small firms.

Moreover, the importance of MGSs is destined to further increase in the light of the Basel II (and III) Accords which state that the guarantees of such institutions could, if granted in compliance

with some requirements, allow banks to mitigate credit risk associated with small business lending and to save regulatory capital (Cardone-Riportella et al., 2008).

Surprisingly, in spite of their real-world diffusion and the attention paid to MGSs in the policy arena, there has been no previous attempt to model the incentives behind their formation<sup>1</sup>. In the present paper we provide a theory to rationalize the existence of MGSs based on the contractual features of loans granted through the intermediation of such institutions. While MGSs play other important roles like screening and monitoring their associates and conducting collective bargaining with banks, our theory focuses on their distinctive function, that is of providing collateral to associates. Its major contribution is to show that, abstracting from any alleged informational advantage of entrepreneurs about each other, an MGS acts as a wealth-pooling mechanism that makes it feasible to offer separating contracts and reduces the likelihood of credit rationing. Furthermore, we show that conventional personal loans and loans covered by the MGSs' guarantees may coexist, given that the pros and cons of joining MGSs are not identical for safe and risky borrowers.

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<sup>1</sup> By contrast, there exists a fairly large theoretical literature on the use of public loan guarantee programs and their welfare properties (Gale, 1990a,b; Lacker, 1994; Williamson, 1994; Kasahara, 2009; Modica and Minelli, 2009; Arping et al., 2010).

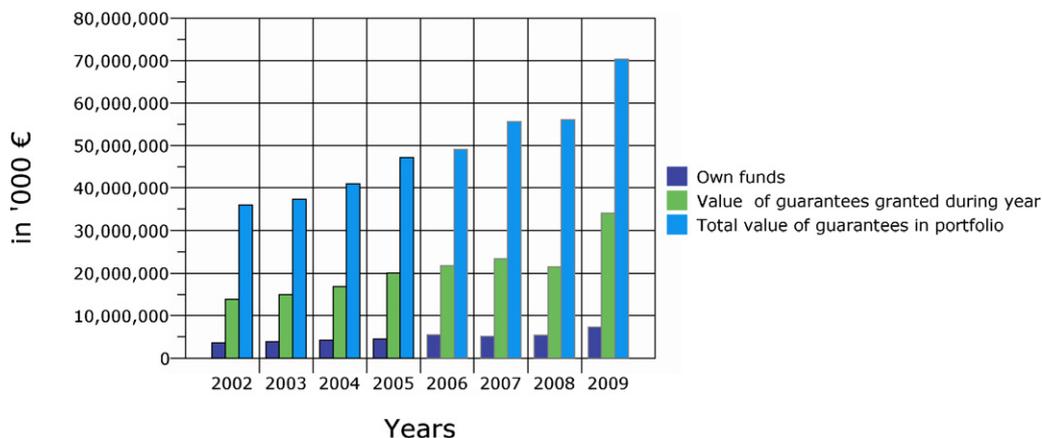


Fig. 1. Guarantee activity of AECM member federations: 2002–2009. Source: (AECM, 2010)

Going more into detail, we develop an adverse selection model where banks cannot distinguish among borrowers and the latter do not possess enough collateralizable wealth to make separating contracts feasible. We assume that the bank holds all the bargaining power within the lending relation, but the borrower gains non-observable private benefits from accessing the credit market and conducting an entrepreneurial activity. Moreover, we assume that borrowers are uninformed about other potential entrepreneurs. When the pooling contract results in rationing safe borrowers, they have an incentive to pool their wealth in an MGS so as to have a positive probability of accessing the separating contract and gain the private benefit of becoming an entrepreneur. In turn, risky borrowers may also find it worth becoming members of an MGS, since by participating in an MGS they dilute the risk of losing the wealth pledged as collateral with the safe associates. However, this benefit comes at the expense of a positive probability of not obtaining the MGS's guarantee and relinquishing the benefit of entrepreneurship. Where the latter benefit is sufficiently high, risky borrowers prefer to borrow individually and the MGS formation acts as a sorting device. Otherwise, MGSs can form with the participation of both risky and safe borrowers.

The rest of the paper is organized as follows. In Section 2, we discuss the model motivations and related literature. In Sections 3 and 4, we present the basic model and derive the optimal individual loan contracts, respectively. The incentives to form an MGS and the condition under which the assortative matching property holds are described in Section 5. In Section 6, we discuss comparative static results and testable implications. In Section 7, we discuss some possible extensions of the model concerning public contributions and multi-period relationships between banks and firms. In Section 8 we conclude.

## 2. Model motivations and related literature

### 2.1. Role and functioning of MGSs

Asymmetries of information between banks and borrowers lie at the root of significant misallocation in credit markets. Due to the lack of information on individual borrowers, banks can cause the interest rate to become inefficiently high such that worthy borrowers are driven out of the credit market (Stiglitz and Weiss, 1981). Alternatively, borrowers with negative net present value projects could obtain financial support in the credit market by taking advantage of cross-subsidisation of borrowers with worthy projects (Mankiw, 1986; De Meza and Webb, 1987). In both cases, the reason for market failure is that banks are unable to recognize

the actual riskiness of borrowers and are forced to offer the same contract to borrowers with a different probability of success.

As is well described in the literature, when borrowers' wealth is large enough, banks may bypass informational asymmetries by offering a menu of contracts with collateral requirements acting as a sorting device. In this case, risky borrowers will self-select by choosing contracts with high repayment and low collateral, while safe borrowers will choose contracts with high collateral and low repayment (Bester, 1985; Besanko and Thakor, 1987).

Typically, informational problems are particularly severe for small and micro enterprises. Such firms have a short credit history, meet less rigorous reporting requirements and the availability of public information on them is scarce. On top of that, the difficulty of banks in assessing the creditworthiness of small borrowers often goes hand-in-hand with inadequate availability of collateralizable wealth from the latter. Lack of information and collateral are therefore universally seen as the main structural features explaining the reluctance of banks to lend to small enterprises, especially during economic downturns, with negative effects on industry dynamics, competitiveness and growth (Beck et al., 2005; Beck and Demirgüç-Kunt, 2006).

In this context, in many countries around the world various types of loan guarantee funds have been created to help small and micro enterprises to gain easier access to the credit market (González et al., 2006; Beck et al., 2010; Cowling, 2010; Honohan, 2010). Frequently, these funds assume a mutual corporate structure in which artisans and other small entrepreneurs (or their associations of category) create a non-profit mutual society which acts as an intermediary with banks and provides associates with collateral, mobilizing their own contributions to the common fund. Ever since the cooperative banking movements in the 19th century (Guinane, 1994, 2001), in Europe there has been a long tradition and a great diffusion of mutual guarantee associations (AECM, 2010). Apart from Europe, the system of MGSs is well developed in South and North America (Oehring, 1997; Riding and Haines, 2001), East Asia (Hatekayama et al., 1997) and North Africa (De Gobbi, 2003), and the techniques for mitigating the risk of default on small business lending included in Basel II have created further stimuli to its worldwide diffusion (Cardone-Riportella et al., 2008).

Although MGSs operate in disparate ways within and across countries, there are some general common features which they share. MGSs are non-profit, cooperative institutions created by small and micro private enterprises which constitute a collective fund with the aim of meeting the guarantee requirements of banks. Typically, the contributions of associate firms to the guarantee fund is supplemented by public resources from local and

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