ELSEVIER European Economic Review 45 (2001) 1957–1980

EUROPEAN ECONOMIC REVIEW

www.elsevier.com/locate/econbase

Asymmetric information and the structure of the banking industry

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Received 1 July 1998; accepted 1 July 2000

Abstract

We analyze the effects of informational asymmetries on the market structure of the banking industry in a multi-period model of spatial competition. In the process of lending, incumbent banks gather proprietary information about their clients, acquiring an advantage over potential entrants. We show that these informational asymmetries are important determinants of the industry structure and of banks' strategic behavior. Contrary to traditional models of horizontal differentiation, the steady-state equilibrium is characterized by a finite number of banks even in the absence of exogenous fixed costs. In addition, less concentrated industry structures may be associated with higher interest rates. © 2001 Elsevier Science B.V. All rights reserved.

JEL classification: D43; D82; G21

Keywords: Banking; Barriers to entry; Spatial competition

1. Introduction

Asymmetric information is a defining characteristic of credit markets.[1] Financial institutions offering credit to borrowers face uncertainty about their credit worthiness to the extent that they cannot observe some of the borrowers' characteristics and actions. These informational asymmetries may lead to credit

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[1] For a literature survey see Bhattacharya and Thakor (1993), or Van Damme (1994).

0014-2921/01/$ - see front matter
PII: S0014-2921(00)00085-4

rationing and may invalidate other standard results of competitive markets. However, in the process of lending, banks gather some proprietary information about borrowers' creditworthiness, so that over time they may partially resolve the problems associated with informational asymmetries. Furthermore, with such information banks acquire some degree of monopoly power over their clients and an advantage over their competitors.

A substantial literature has addressed the issue of competition in banking, showing that standard industrial organization results generally may fail to hold under asymmetric information.[2] However, little attention has been paid to the analysis of the relationship between information and market structure in the banking industry. This paper is an attempt to fill that gap.

In a formal setting, this paper shows that asymmetric information and learning contribute to determine bank conduct and credit industry structure. More specifically, it shows that these factors limit the number of competitors a market can sustain in equilibrium, provide incumbents with an advantage over new lending institutions, and induce banks to compete more fiercely for market share. The intuition goes as follows. Information gathered through their lending activity enables banks to better evaluate borrowers with whom they have dealt in the past, relative to borrowers that are new and unknown to them. Then, as banks compete with each other, adverse selection generates an endogenous fixed cost that limits the number of competitors active on the market. For each bank, this adverse selection problem stems from its inability to discriminate between borrowers seeking financing for new untested projects and borrowers rejected by competing banks. However, the severity of this problem decreases with the bank's market share. It follows that market share endows a bank with valuable informational capital and that new lenders find entry difficult.

In a recent paper, Dell'Ariccia et al. (1999) argued that adverse selection represents a barrier to entry in banking. They showed that, in a single-period Bertrand setting, asymmetric information leads to a result of 'natural duopoly' and blockaded entry. However, because of the static nature of the model and the particular form of competition, they could not account for different industry structures across countries and market segments, and could not examine the relationship between industry structure and interest rate.[3]

The present paper adds to their result in both those respects. First, it establishes a relationship between information and market concentration, and shows that to more severe informational asymmetries correspond more

[2] Among others: Greenbaum et al. (1989), Broecker (1990), Sharpe (1990), Riordan (1993), Calem and Mester (1995), Petersen and Rajan (1995), Hoff and Stiglitz (1997). Hendricks et al. (1994) and Greenwald (1986) analyze asymmetric information in auctions, and in labor markets, respectively. Further references can be found in Dell'Ariccia et al. (1999).

[3] In Dell'Ariccia et al. (1999) any degree of informational asymmetry leads the market to a natural duopoly.