NORTH-HOLLAND

Journal of Economics and Business 54 (2002) 595–614

Journal of Economics & Business

Cost efficiency among credit card banks

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Received 21 February 2000; received in revised form 17 January 2002; accepted 12 February 2002

Abstract

Credit card banks produce a single, relatively homogeneous output, permitting exceptionally clean empirical tests of cost efficiency. The high net interest margins and fees on credit card loans also suggests a large potential for managerial slack or expense preference behavior, possibly fostering a wider range of cost efficiency than observed for general-purpose banks. This paper presents estimates of cost efficiency for a sample of monoline credit card banks over the period 1984–1993; the findings are similar to those previously reported for general-purpose banks. We also explore empirical correlates of the estimated cost efficiency.

JEL classification: G21

Keywords: Cost efficiency; Credit card banks

1. Introduction

Credit card banks have long been an especially dynamic and profitable segment of the banking industry. Although the pricing of bank credit cards is established independently by thousands of lending banks, several studies have found evidence of supra-competitive pricing and profitability (Ausubel, 1991; Calem & Mester, 1995; Shaffer, 1999). Conversely, some studies have reported evidence that the higher pricing is commensurate with great risk associated with credit card lending, and it is true that credit cards are subject to special risk factors, both ex ante and ex post. Despite historically large net interest margins, the volume

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PII: S0148-6195(02)00117-0

of credit card lending has grown rapidly over the years and retains the potential for substantial future growth. The industry's large size, rapid growth, high profitability, and high risk constitute primary motivations to study credit card lending. In addition, Domowitz and Sartain (1999) have found evidence that credit card balances constitute an important predictor of personal bankruptcy, which has become an increasingly prominent problem across the US.

Any industry capable of sustaining high profitability also affords an opportunity for expense preference behavior (Edwards, 1977; see also Berger & Hannan, 1998). To the extent that credit card banks differ in their choice of objectives, we might expect to observe wider variability of cost efficiency across credit card banks than previous studies have found among full-purpose commercial banks. For example, some credit card banks have invested heavily in information technology, accumulating large customer databases and applying sophisticated statistical analysis to refine their understanding of risk profiles, pricing, and profitability. It is not immediately clear whether such investment is truly profit-maximizing or instead represents a partial dissipation of monopoly rents. Testing the pattern of cost efficiency can shed indirect light on the general question of expense preference behavior.[1]

At the same time, the relatively homogeneous output of monoline credit card banks affords a potentially purer test of cost efficiency than is possible for a sample of general-purpose banks.[2] High-cost banks are traditionally interpreted as inefficient, even though "excess" inputs may in some cases be used to produce differentiated outputs of above-average quality (and thus of potentially average or higher profitability). Mis-measured or unobserved product differentiation is therefore a potential source of noise or bias in estimate of cost efficiency, especially in multi-product firms. The focus of monoline credit card banks on a single output reduces the likelihood of this source of error.

This paper presents empirical evidence on the relative cost efficiency of a nationwide sample of credit card banks over a 10-year period. Using the well-established stochastic frontier method and controlling for the quantity of equity capital, we find an average cost inefficiency of 29%, which is similar to the magnitude of inefficiency found for full-purpose banks by other empirical studies (Berger & Humphrey, 1997; Evanoff & Israilevich, 1991). Moreover, the standard deviation of our efficiency estimates is very similar to that reported by Berger and Humphrey (1997) across a range of studies of US full-purpose banks, although care must be exercised in the interpretation of this comparison because our standard deviation is derived from estimates across individual observations while that of Berger and Humphrey is derived from a series of average estimates across full samples. Approximately one-third of the banks in our sample are significantly inefficient. The similarity between these findings and those of other studies of full-purpose banks is not consistent with the hypothesis that credit card banks exhibit a wider range of expense preference behavior. In addition, we explore empirical correlates of the estimated cost efficiency, drawing on variables suggested by theory and prior empirical studies.

The remainder of the paper is organized as follows. Section 2 reviews the credit card industry, previous research on credit card banks, and motivation for studying credit card lending. Section 3 introduces the econometric model and technique. Section 4 describes the sample and variable definitions. Section 5 presents the efficiency results, and Section 6 explores the empirical correlates of cost efficiency. Section 7 concludes.