International Review of Financial Analysis 24 (2012) 93–103

Contents lists available at SciVerse ScienceDirect

International Review of Financial Analysis

Competition, efficiency and interest rate margins in Latin American banking

Georgios E. Chortareas [a,1], Jesús G. Garza-García [c,2], Claudia Girardone [b,*]

[a] Department of Economics, University of Athens, 8 Pesmazoglou Street, Athens 10559, Greece
[b] Essex Business School, University of Essex, UK
[c] Economic Planning Unit, Ministry of Finance, Mexico, Insurgentes sur 1971, Torre III, Piso 10, Del. Alvaro Obregon, Mexico City, Mexico

ARTICLE INFO

Article history:
Received 17 March 2012
Received in revised form 27 July 2012
Accepted 4 August 2012
Available online 18 August 2012

JEL classification:
G21
D24
L11

Keywords:
Net interest margins
Banking competition
Efficiency
Data envelopment analysis
Latin America

ABSTRACT

High interest rate spreads and low credit availability to the private sector have been persistent problems in Latin American banking in spite of the recent financial sector reforms. This paper considers the determinants of interest rate margins focusing on their relationship with structural and non-structural measures of competition and non-parametric estimates of efficiency. In the empirical analysis we revisit the traditional Structure–Conduct–Performance paradigm and we estimate panel regressions using a Generalized Method of Moments (GMM) framework, for a sample of over 1700 bank observations covering the period 1999–2006. The results show that the concentration index and the market share have little or no influence on interest rate margins. In contrast, we produce evidence suggesting that greater efficiency and competitive markets result in lower spreads. Moreover, while a higher proportion of loans over assets seem to be associated with high spreads, economic growth appears to reduce them.

1. Introduction

Financial intermediation in Latin America is relatively low by international standards. Most countries' financial systems are predominantly bank-based and despite the reforms aimed at liberalizing and deregulating the financial sector, the region still experiences relatively low ratios of credit to the private sector.[3] These low levels of financial intermediation appear to be tied in with high borrowing prices and interest-rate spreads. Over 1999–2006 the average interest rate spread in Latin America reached 16.19% (with peaks of 42% in Brazil and 26% in Uruguay) compared to 5.02% in India, 6.21% in South East Asia, 3.26% in the Euro area and 2.9% in the US.[4] The high persistence of these spreads is considered as one of the greatest failures of financial sector reforms carried out in Latin America over the last two decades. Moreover, the credit crunch and liquidity shortage generated by the global financial crisis exacerbated this situation by further decreasing the liquidity supply to the private sector.

This paper focuses on understanding the disparity of spreads across regions in Latin America. While high interest rate spreads can contribute to the strengthening of a country's banking system if, for instance, the profits earned are transferred by banks to their capital bases (Barajas, Steiner, & Salazar, 1998; Saunders & Schumacher, 2000a) they are also associated with a number of drawbacks. High spreads are generally thought to reflect the inefficiencies of a financial system or, as Bernanke (1983) puts it, the costs of financial intermediation. When the spread is too high, it not only discourages potential savers with low returns but also impedes credit expansion because of the higher loan rates. Emerging countries may be especially at risk because their financial systems and capital markets are less developed and sophisticated and their economies are primarily bank-based (Martinez Peria & Mody, 2004). Brock and Rojas-Suarez (2000) emphasize that high interest rate spreads are associated with bank-specific inefficiencies which impact negatively on credit expansion and investment. Hanson and Resendez Rocha (1986) and Barajas et al. (1998), on the other hand, observe that high spreads are frequently attributed to high operational costs, lack of competition, inflation rates, and financial taxation. Gelos (2006) found that compared to other developing countries, spreads in Latin America are high because of relatively higher

* Corresponding author at: Essex Business School, University of Essex, Wivenhoe Park, Colchester, CO4-3SQ, UK. Tel.: +44 1206 874156; fax: +44 1206 873429.
E-mail addresses: gchortar@econ.uoa.gr, gchort@essex.ac.uk (G.E. Chortareas), jesus_garza@hacienda.gob.mx, jesus_garza@hacienda.gob.mx (J.G. Garza-García), cgirardone@essex.ac.uk (C. Girardone).
[1] Tel.: +30 210 3689805.
[2] Tel.: +52 55 368826/18.

[3] The average levels (over GDP) over 1999–2006 was 28.7% in Latin America, compared to 66.6% in South East Asia, 111.5% in the Euro Area and 145.7% in the UK. The only country in Latin America with a similar ratio as South East Asia is Chile, having a ratio of 66% followed by Uruguay with 43.8% (data obtained from the International Financial Statistics, IFS, provided by the International Monetary Fund).

[4] Spreads are measured as lending rate minus deposit rate as in Brock and Rojas-Suarez (2000). "Spreads" and "interest rate margins" will be used indistinctively throughout this paper.

1057-5219/$ – see front matter © 2012 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.irfa.2012.08.006

interest rate levels and reserve requirements and lower bank efficiencies, possibly due to lower competitive pressures. The economic reasoning is straightforward: if a handful of banks dominate the market, they can earn monopoly rents by behaving as price-setters. This in turn lowers competition, increases inefficiencies at the bank level and results in an overall welfare loss. Moreover, while one of the aims of financial liberalization carried out in Latin America was to increase actual and potential competition in the industry, banks have reacted to the new operating environment by strategically increasing their relative size through mergers and acquisitions. Yet, if bank mergers and acquisitions are driven by economies of scale, higher market concentration may actually result in efficiency improvements. Consequently, relying solely on concentration measures to gauge competitive conditions may be deceptive, as it would appear that the deregulation process in Latin America has actually decreased competition, because concentration has risen.

Typically, competition policies are intended to monitor banking markets and if necessary to prevent financial institutions from gaining excess market power. Under the "competition-stability" view, more market power in the banking sector will cause banks to raise interest rates on loans. This will make it harder for borrowers to repay their loans and exacerbate moral hazard and adverse selection problems. The possibility of non-repayment of loans and the default risk of bank portfolios will make the financial system less stable (Boyd & Nicolo, 2005).[5]

Although recent events demonstrate that trade-offs between the degree of competition and financial stability exist,[6] in 'normal' times antitrust authorities usually intervene to prevent large banks' mergers and/or acquisitions activities if they believe that the costs in terms of reduction in competition maybe too high.

This paper considers the determinants of interest rate margins in the Latin American banking markets over the period 1999–2006. We specify an empirical model which departs from the traditional market power (Structure-Conduct Performance—SCP and Relative Market Power—RMP) and efficient-structure (technical and scale efficiency) hypotheses. Specifically, since we are interested in the determinants of bank interest rate spreads, in this paper we revisit the traditional SCP framework by using net interest margins instead of return on assets as dependent variable. In addition, we test a non-structural measure of competition (i.e. the Panzar and Rosse's H-statistics) to verify the view that concentrated markets may not necessarily be uncompetitive. Such investigation is important since recent literature (Beck, 2008; Matutes & Vives, 1996) has shown that concentration is not an appropriate measure for competition. Market structure measures are crude proxies for competition that do not take into account for example that banks might not compete directly with each other in the same line of business. In addition, in the classical SCP model, the prediction is that market structure determines bank behavior i.e. concentration weakens competition by fostering collusion among firms. However, as mentioned above, the recent literature has challenged this model in favor of the argument that firms maybe more profitable because of greater efficiency.

In the efficiency model, instead of relying on traditional financial ratios such as cost-to-income, we use technical and scale efficiency (similarly to Berger, 1995) estimated using the non-parametric Data Envelopment Analysis (DEA). Then, we test the relationship between bank margins and a non-structural measure of bank competition (the H-statistic) introduced by Panzar and Rosse (1987). It is important to include both structural and non-structural measures of competition in order to address that concentrated markets may not necessarily be uncompetitive. Finally, we test a set of relevant macroeconomic and bank-specific control variables. We run panel regression models, using a Generalized Method of Moments (GMM) framework, using measures of market power and competition simultaneously as we assume that concentration does not exclude competition. As far as we are aware there are no similar studies for Latin America and this is the first to test concentration and competition simultaneously in a model of determinants of bank margins using GMM. The dynamic GMM panel data methodology is used in order to address possible endogeneity problems in the model.

Our results indicate that concentration and market share have little or no influence on interest rate margins. In contrast, greater efficiency and non-structural measures of competition are important factors in lowering spreads. High levels of banks' liquidity risk, proxied by loans-to-assets ratios, are associated with high margins whilst economic growth appears to reduce them.

The paper is organized as follows: Section 2 provides a brief background of the banking sector in Latin America and reviews the relevant literature; Section 3 describes the data sources and main methodological issues; Section 4 discusses the results of the analysis and finally Section 5 concludes.

2. Background and literature review

2.1. Financial intermediation in Latin America: a bird's eye view

The attempts of financial liberalization experienced by Latin American countries during the 1990s affected their banking sectors in many ways. A notable consequence was a higher degree of consolidation, reflected in increasing degrees of market concentration as shown in Fig. 1.

Williams, Cardim de Carvalho, and de Paula (2009) point out that the consolidation of the banking sectors in Latin America was necessary in order to restructure the financial systems after several financial crises. At the same time the financial sector still remains highly bank-based and financial intermediation is low compared to other developed and developing nations. The level of credit increased during the 1990s, to contract again soon after the economic crises experienced in the region (Singh et al., 2005) and currently remains relatively low (see Fig. 2). The persistently high lending rates are among the factors explaining the relative low ratios of credit to the private sector.

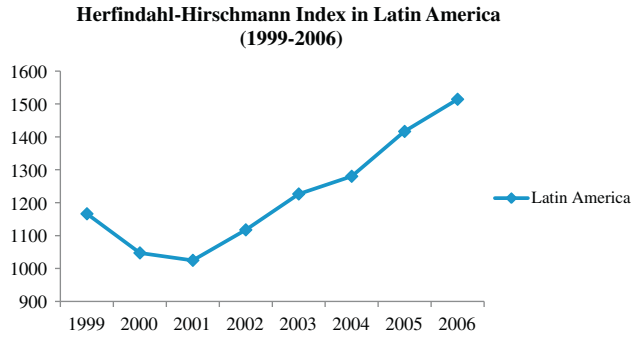

Fig. 1. Herfindahl–Hirschmann Index in Latin America (1999–2006). *Source*: Elaborated with data from *Bankscope*. Notes: The Latin American HHI index is the average of the HHI index of the banking sectors for Argentina, Brazil, Chile, Colombia, Costa Rica, Paraguay, Peru, Uruguay and Venezuela for the period under study.

[5] Under this view, moral hazard and risk-taking behavior may further increase financial sector instability if banks that are deemed Too-Big-To-Fail obtain government subsidies (e.g. Beck, Coyle, Mathias, Freixas, & Seabright, 2010; Demirguc-Kunt & Huizinga, 2010; Herring & Carmassi, 2010). The alternative competition- fragility view (Allen & Gale, 2004; Hellmann, Murdock, & Stiglitz, 2000; Jimenez, Lopez, & Saurina, 2007; Keeley, 1990, to name a few) posits that more competition leads to more fragility in the banking sector because it decreases market power and results in reduced franchise value that encourages riskier behavior in order to boost profits (see e.g. Casu, Girardone, & Molyneux, 2012).

[6] For example, in the UK the relaxation of competition law to help financial stability resulted in the merger between Lloyds TSB and HBOS in January 2009.