When measuring the same leads to different conclusions – A critical review of measures applied to assess the degree of competition in banking systems

Toni Richter* and Holger Müller** and Horst Gischer***

Abstract:

Economic studies on the degree of competition (DC) in banking systems use various measures which are subsumed under the 1) structure- (e.g. Herfindahl-Hirschman index), 2) conduct- (e.g. Boone indicator) or 3) performance-oriented approach (e.g. Lerner index). Yet, the respective empirical operationalizations of the different DC measures are expected to represent one central construct – the true DC of a banking system. We review 35 studies covering 15 European banking systems from 1998 to 2007. Contrasting the central construct hypothesis, we find substantial differences in the produced DC measures. Thus, the economic validity of derived conclusions regarding the competition intensity is challenged.

Keywords: Competition measurement; Degree of competition (DC); SCP paradigm; European banking system; Banking industry; Lerner index; Boone indicator; H statistic; CH_3; Central construct hypothesis

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* Dr. Toni Richter (corresponding author), Research Associate, Chair of Monetary Economics and Public Financial Institutions, Faculty of Economics and Management, Otto-von-Guericke-University Magdeburg, PO Box 4120, 39016 Magdeburg (GERMANY), +49 391 6758421, toni.richter@ovgu.de

** Prof. Dr. Holger Müller, Professor of Business Administration esp. Marketing, Faculty of Economics and Management, Leipzig University of Applied Sciences (HTWK), PO Box 301166, D-04251 Leipzig (GERMANY), +49 341 30766531, holger.mueller.ma@htwk-leipzig.de

*** *Prof. Dr. Horst Gischer, Chair of Monetary Economics and Public Financial Institutions, Faculty of Economics and Management, Otto-von-Guericke-University Magdeburg and Executive Director of the Forschungszentrum für Sparkassenentwicklung e.V. (FZSE), PO Box 4120, 39016 Magdeburg (GERMANY), +49 391 6718393,* horst.gischer@ovgu.de

I. Introduction

Over the last decade, the efficiency of the European financial system has been a central issue not only in general discussions involving corporations, practitioners and politicians but also in corresponding academic research. Accordingly, numerous recent studies in the field of industry economics, financial economics, market regulation and policy advice deal with questions regarding the stability, profitability and the resulting general economic performance. In this intense debate, the predominant fundamental underlying construct that guides the economic evaluation of the status quo in any national banking industry and the surrounding financial system is the degree of competition (referred to as DC) between the market agents.

Therefore, the DC covers a large scope of application. As a first example, when assessing the *risk-bearing capacity* of banks and the effects on the surrounding financial system, the controversially discussed competition-fragility and competition-stability hypotheses are by definition DC-based (see *Allen/Gale* 2004; *Berger* et al. 2009; *Zigraiova/Havranek* 2015; *Cāpraru/Andries* 2015).[1] Secondly, the DC is also frequently used in studies examining the *profitability of particular strategic business areas* of banks such as the lending business. For instance, *Koetter et al.* (2006), *Weistroffer* (2013) as well as *Schnabel* (2014) find that in the respective German market segment, over-capacities are usually accompanied by an exorbitantly high DC. Thirdly, DC measures are used to assess whether or not *productivity gains* can be realized. As an example, it is assumed that the (very) fragmented domestic markets along with an increased DC impede such productivity gains due to the inability to capitalize on economies of scale/scope.[2] Fourthly, whether or not the *credit supply* provided by private and institutional banks to private companies really satisfies equilibrated (i.e. market clearing) conditions (see *Love/Peria* 2014) significantly depends on the banks' ability to set their prices at will. Naturally, the potential market power of banks is determined by the DC. Finally, it is commonly accepted that the DC has a strong impact on the *long-term dynamic efficiency of financial markets and its segments*. As an example, for the former, this point of view is commonly found in reports published by regulatory institutions (e.g., *German Monopolies Commission*, Major Report 2014). As for the letter, regarding the specific investment banking market segment, *Bharat/Galetovic* (2006) show that the degree of competition (i.e. dimensions of competition) has a substantial effect on the resulting incentives to invest in firm-specific relationships which in the end affects the market's efficiency.

Consequently, the accurate quantitative DC measurement which in turn allows for valid qualitative economic evaluations of the true competitive conditions in a given financial system (e.g., in a country case, for

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[1] As an example, *Berger* et al. (2009) administered a DC measurement study to examine the relation between market power, risk issues and fragility based on a sample of over 8,000 banks across 23 developed countries over a time span between 1999 and 2005. Using the DC measure Lerner index, they found that banks with a greater degree of market power are less susceptible to risks. They conclude that a diminished competition in a banking system makes it less fragile in the long run.

[2] In this context, see the recent works of *Feng/Zhang* (2014) and *Carvalho* (2014).