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Bank competition, concentration and financial stability in the Turkish banking industry

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ABSTRACT

This paper analyzes the impact of competition and concentration on bank stability in the Turkish banking industry over the period 2002–2012. The Boone indicator and the efficiency-adjusted Lerner index are used as proxies for competition, while the non-performing loans (*NPL*) ratio and *Z*-scores are used as proxies for bank stability. The main results indicate that competition is negatively related to the *NPL* ratio but positively related to the *Z*-score. The results further indicate that greater concentration has a positive impact on the *NPL* and a negative impact on the *Z*-score. We also use a quadratic term of the competition measures to capture a possible non-linear relationship between competition and stability. The results show that the coefficient of the quadratic term is negative for the *NPL* model and positive for the *Z*-score model. Overall, our findings provide support for the competition-fragility view.

1. Introduction

The relationship between competition and financial stability has been actively debated in academic and regulatory circles in the last two decades, particularly since the recent global financial crisis of 2007. Competition, which has a positive impact on innovation, product quality and efficiency, is generally considered as a positive force in most sectors. However, the issue of competition among banks has always been controversial. Two competing views have emerged in the

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literature on the relationship between competition and stability in banking. The competition-fragility view argues that there is a negative relationship between bank competition and stability,[1] as higher bank competition decreases market power and profit margins. Hence, it will increase banks' incentives to take more risks. However, the competition-stability view argues that competition leads to greater stability,[2] as more bank competition drags interest rates down, reducing moral hazard and adverse selection problems among borrowers and hence also reducing loan default rates, which benefits bank stability. Recently, Martinez-Miera and Repullo (2010) combine these two competing views and argue that a U-shaped relationship between competition and stability could exist.

The financial liberalization and restructuring efforts of the last two decades have changed the competitive conditions in the banking sectors of both developed and developing countries. The new competitive conditions motivated large financial institutions in developed countries operating at relatively low margins to extend cross-border operations into the potentially more profitable markets of developing countries. Increased competition has been considered the main driving force behind the acceleration in the consolidation process in both groups of countries, while also raising concerns about increased concentration in the banking sector.

The effect of consolidation on banking sector performance remains controversial. In particular, the debate on the impact of competition (and/or market power) on financial stability has raised great interest among academics and policymakers. Moreover, the recent global financial crisis has affected the global financial system, and particularly the banking sector, deeply, with many banks suffering large losses and needing to raise additional capital. The failure of regulators and supervisors to appropriately discipline banks has led academics and policymakers to reconsider the relationship between performance, stability and competition. In summary, policymakers are faced with the contrasting issues of whether competitive forces pose a threat for sector stability or whether the consolidation wave poses a threat to competition in the sector.

The relationship between competition and stability has been investigated in several papers in the context of both developed and developing countries' banking sectors. Empirical evidence in support of the competition-fragility and the competition-stability views is rather mixed. The main objective of this paper is to provide new evidence on this relationship using data from Turkish commercial banks over the period 2002–2012. Turkey as a developing country provides a fertile laboratory to examine the competition-stability relation since the country engaged in a process of financial liberalization, privatization, economic integration and technological change, while the system is witnessing more consolidation.[3] In contrast to many studies in this literature, ours focuses on a single banking sector to ensure comparability across both dependent and independent variables. Our analysis of Turkish banking allows us to construct a detailed database to compute more consistent market concentration variables and measures of competition (i.e., the Lerner index and the Boone indicator). Hence, using single country data might yield further insight into this relationship.[4] The other contribution of this

[1] See Marcus (1984) and Keeley (1990) and Martinez-Miera and Repullo (2010).

[2] See Boyd and De Nicolo (2005).

[3] The structural reform and liberalization process of the Turkish banking system in recent years has affected the competitive conditions and market structure in the Turkish banking market. For example, there were 7 banks with an asset size above $40 billion, 5 banks with an asset size between $10 billion and 40 billion, and 20 banks with an asset size lower than $10 billion in 2012. The number of banks with above asset sizes in 2002 was 1, 6, and 39, respectively. These figures, which are taken from the Banks Association of Turkey, indicate that the number of large banks in the Turkish banking sector has increased significantly during the period 2002-2012.

[4] Recently, Yaldız and Bazzana (2010) investigated the relationship between competition and stability in the Turkish banking industry. They used both the *NPL* ratio and the *Z*-score as measures of risk-taking behaviors of banks, and the Lerner index as a measure of market power. Ak-Kocabay (2009) also investigates the validity of competition and the stability trade-off in the Turkish banking industry. She uses *H*-statistics and concentration ratios as measures of competition and similar measures for stability as in Yaldız and Bazzana (2010). The present paper significantly differs from these two studies in several respects. First, we use two additional measures of competition (efficiency-adjusted Lerner index and Boone indicator). Second, following Jimenez et al. (2013), we also use a quadratic term for the competition measures to capture a possible non-linear relationship between competition and risk. Third, following Berger et al. (2009), we include both the concentration and competition measures along with several control variables in the same model, since concentration and competition could coexist and can simultaneously induce stability or fragility. Fourth, our sample period is different and therefore we are able to control for the impact of the recent global financial crisis on the stability of Turkish banks.