



# Bank competition, financial reform, and institutions: The importance of being developed

Manthos D. Delis

Faculty of Finance, Cass Business School, City University, 106 Bunhill Row, London EC1Y 8TZ, UK

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## ABSTRACT

In this paper, I estimate the degree of market power at the bank-level for 84 banking systems worldwide. Subsequently, I analyze the sources of bank competition, placing emphasis on the impact of financial reform and the quality of institutions. I find that financial liberalization policies reduce the market power of banks in developed countries with advanced institutions. In contrast, banking competition does not improve at the same pace in countries with weaker institutions and a lower level of institutional development. The results hold across a wide array of identification tests and estimation methods. The main policy implication to be drawn is that a certain level of institutional development is a precondition for the success of reforms aimed at enhancing the competition and efficiency of banking markets.

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## 1. Introduction

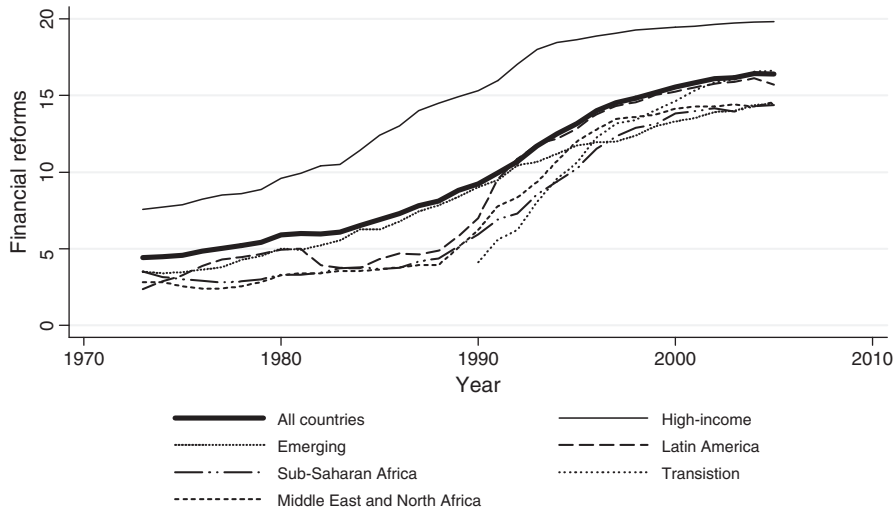
Recent decades have seen a remarkable increase in the number of financial reforms worldwide. This development has been sparked, inter alia, by the evolution of new technologies; and the liberalization, deregulation and integration of capital markets, and other regulatory initiatives at the national as well as the international levels. These changes concern developed and developing countries alike. [Abiad et al. \(2010\)](#) show that countries in all income groups and all regions have reformed their financial systems significantly, though higher-income economies remain more liberalized than lower-income economies throughout (see [Fig. 1](#)). Part of the reason for these reforms was to make the financial markets in general, and the banking sector in particular, more competitive. But does this work? And if so is the effect uniform across countries? This paper answers that question empirically by placing the spotlight on the role of the countries' institutional development in shaping the relation between financial reforms and banking-sector competition.

I begin by estimating the market power of individual banks in 84 countries over a relatively long time frame that encompasses periods of financial reform. Following the suggestion of [Boone et al. \(2005\)](#) and [Boone \(2008\)](#) my main method to estimate a bank's market power is by the elasticity of profits to marginal cost, but I also present results using the ratio price to marginal cost ([Lerner, 1934](#)). In doing this, I

essentially provide a new index of market power for a large number of banking systems worldwide. Subsequently, I examine whether financial liberalization policies improve bank competition, and whether this effect is uniform across countries. An important element of my study is that it identifies the transmission of the impact of reforms on bank competition through the institutional strength of each country. Thus, the strategy helps in examining the possibility that the impact of financial reform on bank market power might be less potent or delayed for countries with relatively weak institutions.

The results show, on the one hand, that competitive conditions are quite different between countries (and groups of countries) and, on the other, that financial reforms are important in containing the market power of banks. Yet, this importance diminishes in countries with weak institutions and a comparatively low level of economic development, whose banks are also identified as having comparatively high market power. Therefore, I suggest that relatively underdeveloped banking systems, operating within a less advanced institutional environment, benefit less from reforms. Among the institutional characteristics, improved transparency (low corruption and high quality of the legal system) and bureaucratic quality are the most important prerequisites for financial reforms to have a significant impact on bank competition. In addition, in developed countries these effects are more pronounced for large and well-capitalized banks, which are found to be the ones that possess higher market power. Finally, a concentrated banking system does not entail a non-competitive banking system if institutions are robust.

E-mail address: [delis@aub.gr](mailto:delis@aub.gr).



Notes: The figure reports the evolution of the financial reforms index from Abiad et al. (2010) for different groups of countries.

Fig. 1. Financial reforms for different groups of countries over time.

My study is naturally related to a large literature on banking-sector competition. Studies closer to my goals are those of Andrianova et al. (2008), Claessens and Laeven (2004), Hasan and Marton (2003) and Pagoulatos (1999). Their findings suggest that the abolishment of activity restrictions, flexible approaches to privatization, and liberal policies towards foreign bank involvement with domestic institutions helps to build a relatively stable, more competitive, and increasingly efficient banking system. Other studies (e.g., Bikker and Haaf, 2002; Carbó et al., 2009; Delis, 2010) estimate the level of competition in several banking industries, but do not examine the institutional and political forces that shape banking-sector competition. However, these studies do show that banking sectors in former centrally-planned economies are characterized by higher market power compared to developed banking systems, thus providing another strong incentive to trace the differences in these findings in the theoretical arguments of the political economy and development literature.

My paper also relates to a more general discussion on the potential effects of reforms on economic outcomes. King and Levine (1993), Pagoulatos (2003), Cetorelli and Strahan (2006), and Jayaratne and Strahan (1998), among many others, suggest that financial liberalization increases the long-run growth rate of the economy by fostering financial development. Galindo et al. (2007) show that financial liberalization improves the allocation of investments, especially in developing countries. Yet again, this positive view of financial liberalization is somewhat clouded by the marked increase in financial fragility experienced in both developed and developing countries in the 1980s and 1990s. Demirguc-Kunt and Detragiache (1998) show that the probability of financial fragility following financial liberalization policies is positively associated with weaker institutions, especially those related to the rule of law and the level of corruption and contract enforcement. Also, the relatively weak legal systems of developing and transition countries, as well as the high levels of networking and corruption in their respective financial systems, might have limited the strength of competitive forces while financial integration was not advancing. First-hand evidence of this is provided in the recent work by Beck and Hesse (2009) on stagnant lending rates in the banking system of Uganda and by Brock and Suarez (2000) on Latin American countries.

The rest of this paper is structured along the following lines. Section 2 discusses the method used to estimate market power at the

bank level and reports average results by country and over time. Section 3 presents the explanatory variables used to study the relation between bank competition, financial liberalization, and institutions. Section 4 presents the empirical findings and Section 5 concludes the paper.

2. Empirical model and estimation of bank market power

The general empirical model used to study the relation between banking-sector competition, financial liberalization, and institutions is the following:

$$\beta_{itc} = b_0 + b_1FR_{itc} + b_2IE_{t-1,c} + b_3M_{itc} + b_4B_{itc} + b_5FR_{itc} * B_{itc} + b_6IE_{t-1,c} * B_{itc} + \varepsilon_{itc} \tag{1}$$

In Eq. (1)  $\beta_{itc}$  is the market power of bank  $i$  at time  $t$  in country  $c$ ;  $FR_{itc}$  is the financial-reform variable, and measures the overall quality of the institutional framework for financial markets in country  $c$  at time  $t$ ;  $IE_{t-1,c}$  is a set of variables characterizing the institutional environment in country  $c$  at time  $t-1$ ;  $M$  is a set of variables that reflect the macroeconomic conditions;  $B_{itc}$  is a set of variables that reflect individual bank characteristics; and  $\varepsilon$  is the stochastic disturbance. The equation also includes the interaction terms of for  $B$  with  $FR$  and  $IE$  for identification purposes as further discussed later. Below, I analyze the methods used to estimate the market power of individual banks (i.e., the dependent variable in Eq. (1)).

Estimation of the competitive conditions in the banking industry has attracted the interest of many researchers over the last three decades (for a recent review see, Carbó et al., 2009). Here, I primarily resort to the method proposed by Boone et al. (2005), and sometimes known as “Boone indicator”.

Boone et al. (2005) show that under certain conditions the market power of firms (here banks) can be estimated from the following simple profitability equation:

$$\ln \pi_i = a + \beta \ln mc_i, \tag{2}$$

where  $\pi$  is the profits of each bank  $i$ ,  $mc$  is marginal cost, and  $\beta$  is the Boone indicator of market power. For simplicity, I drop the subscripts  $t$  and  $c$  from the equation. Intuitively, the profitability of banks with lower marginal costs (higher efficiency) is expected to increase, i.e.,  $\beta$  should be negative. A lower market power (higher competition) implies that

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