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Financial freedom and bank efficiency: Evidence from the European Union

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ABSTRACT

This paper investigates the dynamics between the financial freedom counterparts of the economic freedom index drawn from the Heritage Foundation database and bank efficiency levels. We rely on a large sample of commercial banks operating in the 27 European Union member states over the 2000s. After estimating bank-specific efficiency scores using Data Envelopment Analysis (DEA), we develop a truncated regression model combined with bootstrapped confidence intervals to test our main hypotheses. Results suggest that the higher the degree of an economy's financial freedom, the higher the benefits for banks in terms of cost advantages and overall efficiency. Our results also show that the effects of financial freedom on bank efficiency tend to be more pronounced in countries with freer political systems in which governments formulate and implement sound policies and higher quality governance.

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1. Introduction

Recent research in banking is increasingly using the indexes of "economic freedom" as explanatory variables in regressions that consider various aspects of bank performance in general (e.g., Demirguc-Kunt et al., 2004) and bank efficiency specifically (e.g., Chortareas et al., 2011). There exists indeed a powerful rational for doing so, and the view that the liberty of individuals to pursue their economic goals leads to efficient outcomes is as old as the economics science itself. The development of quantitative indexes of economic freedom over the last two decades allowed to explicitly analyze the effects of liberal economic institutions (or the lack of them) on various aspects of economic performance. Nevertheless, in the banking literature the indexes of economics freedom have been used only as control variables and/or have been inaccurately interpreted as regulation indexes. Moreover, the recent financial crisis revealed fundamental weaknesses in the regulatory framework of financial institutions. Different analysts and policymakers attribute the recent travails of the financial industry to too little, too much, or inappropriate regulation[1] with a consensus being formed toward stronger and new forms[2] of regulation. An emerging question in the midst of this debate is if and how economic and financial freedom may affect the performance of financial institutions.

This paper constitutes the first attempt, to our knowledge, to explicitly characterize the effects of "financial freedom" indexes on bank efficiency, controlling for the banking, economic, and institutional variables that one typically encounters in financial literature. We focus explicitly on the financial counterparts of the economic freedom indexes and we distinguish between the concepts of financial freedom and regulation. Our analysis can also be interpreted as a robustness check of the constructed freedom indexes themselves. Banks that operate under a high degree of financial freedom and fail to display, ceteris paribus, higher levels of productive efficiency would be in contrast with basic tenets of economic theory.

We obtain efficiency scores for banks operating in 27 European Union (EU) countries using Data Envelopment Analysis (DEA) over

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[1] For example, recall the failure of the Financial Crisis Inquiry Commission (henceforth, FCIC) to reach a consensus and the presence of two dissenting views (FCIC, 2011).
[2] E.g., HM Treasury (2010).

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the period 2001–2009, utilizing 6744 bank observations. We then regress the efficiency estimates on the financial/economic freedom indexes from the Heritage Foundation (2010), which aim at capturing the "greater independence in financial and banking markets from government control". We employ the Simar and Wilson's (2007) truncated regression model combined with bootstrapped confidence intervals and we carry out a sensitivity analysis for robustness using a fractional logit estimator. Our analysis controls for bank-specific variables accounting for financial strength, relative size of the institutions and a proxy for credit risk. In addition, we consider institutional variables to account for government quality.

The rationale for the hypothesized relationship between financial freedom and bank efficiency is straightforward: the less are the constraints faced by financial institutions on how to manage their business the more effective they should be in controlling their costs, thus resulting in a more efficient resources allocation process. Our focus is on the commercial banking business rather than on the activities of large complex financial institutions. Moreover, our interest is confined explicitly on a specific bank performance measure, i.e., productive efficiency. Of course, one could argue that excessive financial freedom may contribute to financial institutions' propensity to take on greater risks, which in turn may have contributed to the recent global and European crises. This dimension, however, is beyond the scope of the present paper.

No research exists, to our knowledge, focusing explicitly on the effects of financial freedom on the productive efficiency of financial institutions. The banking literature typically considers the effects of the regulatory environment of banks (e.g., capital requirements, regulatory policies, and banking supervision) on banking system development, banking crises, and bank efficiency (this latter is often proxied by accounting ratios, e.g., Barth et al., 2006). Studies that consider the effects of economic freedom on bank performance typically treat the freedom index as one of the control variables (e.g., Claessens and Laeven, 2004; Goddard et al., 2011), and include other aspects of bank performance than efficiency such as the interest rate margins (Demirguc-Kunt et al., 2004). Other relevant research considers explicitly bank efficiency focusing on banking reforms and liberalization (e.g., Fries and Taci, 2005). Moreover, the existing research typically focuses on the aggregate freedom index and not on the specific financial freedom counterparts, which gives rise to the possibility of misspecification bias (Heckelman and Stroup, 2000).

Our results indicate that there is a strong link between financial freedom and bank efficiency. In particular, the higher the degree of an economy's financial freedom, the better the banks' performance is in terms cost advantages and overall efficiency. The evidence also suggests that any beneficial effects of financial freedom on bank efficiency tend to be more pronounced in countries with freer political systems in which governments formulate and implement sound policies and higher quality governance.

The remaining of the paper is organized as follows: Section 2 reviews the literature on the economic and financial freedom indexes and its potential relationship with bank efficiency. Section 3 presents the empirical methodology and the data. Section 4 discusses the empirical results, and Section 5 concludes.

2. Literature review

Using the economic freedom indexes, extensive empirical evidence has been produced focusing on the effect of economic freedom on growth (e.g., De Haan and Sturm, 2000; Gwartney, 2009). Other studies consider the effects of economic freedom on income convergence (Xu and Haizheng, 2008), aggregate productive efficiency (Adkins et al., 2002), entrepreneurship (Nystrom, 2008), labor markets (Feldmann, 2009) and migration flows (Ashby, 2010). Indexes of economic freedom have also been used as explanatory variables in financial economics (e.g., Roychoudhury and Lawson, 2010) and in characterizing the effects of the recent global recession (Giannone et al., 2011).

The empirical literature considering the effects of the economic freedom indexes on various aspects of the economy is extensive but a common thread that emerges from the evidence is that economies enjoying a high degree of economic freedom can, on balance, achieve better economic outcomes. In the financial economics and banking literature the indexes of economic freedom have been used as control variables in various contexts (e.g., Roychoudhury and Lawson, 2010).

Extensive research has been developed over the last two decades gauging financial institutions' efficiency using econometric and linear programming techniques.[3] The reasons for the surge in bank efficiency studies include the changes in the regulatory and operating environment which render banks more concerned about controlling their costs while optimizing revenues. In addition, bank inefficiencies can have direct implications for social welfare in the form of deadweight social costs as inefficient banks could price their output above marginal social cost, achieving excessive profits. Moreover, in the aftermath of the global financial crisis, achieving high levels of efficiency on the cost side has become a critical factor for the survival of financial institutions.

While theoretical models analyzing explicitly the role of economic freedom on bank efficiency have not been developed, as far as we are aware, the effects of restrictions on a number of aspects of the banking business have been widely analyzed. Flannery (1984), for example, considering the restrictions faced by US commercial banks in establishing more than one full service office location, observes that constraints preventing free entry to the banking industry may force unit banks to operate with a socially inefficient combination of inputs. The analysis of banking efficiency has been considered in various contexts, but some contributions focus explicitly on the effects of the institutional environment within which banks operate (see, among others, Demirguc-Kunt et al., 2004; Barth et al., 2006). Evidence suggests that economic, regulatory, and institutional differences play a crucial role in the efficient operation of banks, and can explain the discrepancies in efficiency among banking sectors in different countries.

Following this path, a number of studies have already included indicators that examine the degree of financial liberalization. La Porta et al. (1998) do not directly account for banking sector's efficiency but include traditional indicators of common law, creditor rights, rule of law and find that countries with more robust investor protection (where agency costs are restricted by the law) have larger capital markets. The "rule of law" has been also used to capture the effects of severe enforcement practices for any given level of creditors or shareholders' protection. In contrast, Fries and Taci (2005) consider the role of banking sector reform and liberalization in the transition countries to capture the effect on bank cost efficiency. The key explanatory variable of interest is an index of banking sector reform published by the European Bank for Reconstruction and Development (EBRD) Transition Reports. Their results show that progress in banking reform is significantly associated with a decrease in banks' costs.

Focusing on the impact of regulatory and supervisory restrictions, Demirguc-Kunt et al. (2004) find that regulatory restrictions on banking activities are associated with higher level of interest margins. Other studies argue that more openness in the banking markets, in terms of increased foreign penetration, reduces bank margins and improvise the efficiency of the banking systems (Claessens et al., 2001). Barth et al. (2006) examine bank regulation

[3] For comprehensive survey see Goddard et al. (2001).

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