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What drives bank performance in transitions economies? The impact of reforms and regulations

Maria Psillaki (Associate Professor)[a,*], Emmanuel Mamatzakis (Professor)[b]

[a] *Department of Economics, University of Piraeus, Greece*
[b] *Professor of Finance, Jubilee Building, School of Business, Management, and Economics, University of Sussex, Brighton BN1 9RH, UK*

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ABSTRACT

This paper investigates the effects of financial regulations and structural reforms on the cost efficiency of the banking industries of 10 Central and Eastern European (CEE) countries for the period 2004–2009. Cost efficiency scores are estimated using stochastic frontier analysis, whilst panel regressions examine the impact of regulation and liberalisation on bank performance using the EBRD transitional reform indicator and the Fraser economic freedom index. By considering both indexes we are able to account for the effects of progress towards more sound banking practices as well as the impact of the credit market, labor market and business sector regulatory regimes on bank efficiency. Our empirical analysis shows that structural reforms on labor and business markets exert a positive impact on bank performance. In line with the public interest view, we find the effect of credit regulation banking on cost efficiency is positive. We also find that better capitalized banks are more cost efficient.

1. Introduction

In the last two decades countries from Central and Eastern Europe experienced in their banking sectors dramatic changes including liberalization, consolidation and privatization coupled with a sharp increase of foreign bank participation in their economies (see EBRD, 2010; Gwartney et al., 2010, 2012). Such reforms by changing relative prices of both inputs and outputs can have an effect on allocative efficiencies, whereas foreign entry may add to technical efficiency via the introduction of better technologies or business practices (Lehner and Schnitzer, 2008), especially when economic reform has strengthened the quality of the host country's legal environment and institutions (Poghosyan and Poghosyan, 2010). But financial deregulation may also encourage excessive credit and debt exposures that are likely to exceed the capacity of bank risk management systems and supervisory institutions. Consequently, the growth model on which many of the CEE countries relied in the pre-2007 crisis period, based on cheap funds from abroad to support credit growth, was risky and unsustainable. Against the backdrop of continuing financial market turbulence, falling lending volume compounded by exposures to distressed sovereigns, banks have found it even more difficult to remain profitable which brings into the forefront the issue of efficiency.

* Corresponding author at: Department of Economics, University of Piraeus, 80 str. Karaoli & Dimitriou 18534 Piraeus, Greece.
E-mail address: psillaki@unipi.gr (M. Psillaki).

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Our aim is to investigate the effects of regulatory reforms on CEE banks' cost efficiency during the period 2004–2009. First, we use Stochastic Frontier Analysis (SFA) to estimate cost efficiency relative to a single CEE wide cost frontier controlling for country specific characteristics. These efficiency measures are then employed in panel models to estimate the impact of regulation on bank specific cost efficiency. We use an assortment of information, such as the transition indicator of the European Bank for Reconstruction and Development (EBRD) and the Fraser economic freedom index (Gwartney et al., 2008, 2010, 2012), to investigate the impact on cost efficiency of regulations related to credit market, as well as restrictions on labor and business markets, while controlling for other bank-specific, country and institutional-specific characteristics.[2] More precisely, we examine the effects of regulation on bank efficiency in terms of two competing hypotheses: the public interest view hypothesis and the private interest view hypothesis. Our results indicate that more liberal labor markets and business sectors seem to be associated with better bank efficiency. On the other hand we find that banking sector reforms have a negative effect on efficiency. However, our results show strong evidence that better capitalized banks are more cost efficient and this holds irrespective of whether we control for the effects of the overall regulatory environment.

The recent crisis has exposed some major gaps in the growth model for emerging economies as well as gaps in their overall framework for bank supervision and regulation. This paper contributes to the existing literature by providing new evidence on the experiences of CEE countries during the recent crisis paying particular attention to the effects of economy wide regulatory reforms for the banking industry. Such an assessment is of considerable interest for policy makers given the insolvencies of several major banks in Europe, and accompanied large withdrawal of funding from the CEE region by parent banks, thereby intensifying the contraction of credit and ensuing recessionary pressures in several CEE countries. Furthermore, an interesting question with important policy implications is to what extent economic and financial reforms are conducive to improving bank performance and therefore promoting financial stability which brings into the forefront the issue of cost efficiency not only from the point of view of bank's shareholders but from the point of view of the society. In other words is this process of "financialization" socially optimal?[3,4] What are the interactions between financialization and crises? An answer to the first question is beyond the scope of this paper. However, we provide empirical evidence that sheds some light on the second question.

We follow the methodology of Mamatzakis et al. (2013) deriving cost efficiency scores for the same CEE countries albeit with some important differences. First, we use parametric (SFA) methods allowing for measurement error while controlling for firm-specific effects in constructing individual bank efficiency measures. This is in contrast to Mamatzakis et al. (2013) who use non-parametric methods such as Data Envelopment Analysis (DEA) that are sensitive to outliers and data measurement errors. Second, Mamatzakis et al. (2013) consider a broad spectrum of the Fraser Index whereas we focus specifically on the subcomponents of the index that have the strongest influence on bank performance.

The structure of the paper is as follows. Section 2 reviews the existing literature on bank efficiency and regulations. Section 3 describes the data. Section 4 introduces the stochastic frontier model and presents the results of the fixed effects cost efficiency model. Section 5 describes the dynamic panel model and estimation results. Section 6 concludes the paper.

2. Related literature and hypothesis development

According to Hughes and Mester (2015) two broad approaches are generally used in the literature to explain bank performance: structural and nonstructural. Nonstructural approaches choose different performance measures (e.g. ROE, ROA, net interest margins, Tobin's q-ratio among others), and explain these measures by an assortment of bank specific or institutional factors. Structural approaches are based on theoretical models of banking behavior such as cost minimization or profit maximization. Structural approaches rely on estimating an "efficient frontier" using linear programming methods such as Data Envelopment Analysis or parametric methods such as Stochastic Frontier Analysis and Distribution Free Approach, and treating deviations from such frontier as a measure of inefficiency. Cost efficiency refers to the minimum cost of producing a unit of output given input prices and deviations from minimum cost can be 'technical' arising from excessive input use to produce that output or 'allocative' arising from employing the wrong input mix given their prices.

2.1. Credit market regulation and efficiency

Empirical cross-country studies have analyzed the impact of regulations on bank performance considering different financial measures (Barth et al., 2004, 2008; Djalilov and Piesse 2016), bank ratings (Pasiouras et al., 2006; Demirguc-Kunt et al., 2008), financial and non-financial factors (Pasiouras et al., 2009; Barth et al., 2013). The evidence is not always clear cut (Barth et al., 2013) and hence the relationship between regulation and bank performance remains an empirical question.[5]

[2] In the literature prior studies consider either the EBRD index of banking sector reform (e.g. Fries and Taci, 2005; Koutsomanoli-Filippaki et al., 2009, 2009a, 2009b; Brissimis et al., 2008; Delis et al., 2011) or the Fraser Index of Economic Freedom (Mamatzakis et al., 2013) but not both.

[3] According to Lagoarde-Segot (2016) and Buchanan (2016), Aalbers (2015) defines financialization as "the increasing dominance of financial actors, markets, practices, measurements and narratives at various scales, resulting in a structural transformation of economies, firms (including financial institutions), states and households".

[4] See for instance the papers of Lagoarde-Segot (2016), Buchanan (2016) and Sokol (2015) for a discussion on the concept of financialization.

[5] Following Barth et al. (2013) bank regulations and supervisory practices comprise a wide range of activities, such as capital regulation, entry regulations, activities restrictions, supervisory power and independence, external governance and private-sector monitoring.