Banking efficiency in South East Europe: Evidence for financial crises and the gap between new EU members and candidate countries

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**A B S T R A C T**

In this study we compare the cost efficiency of banks in ten South East European countries and find out how differences in efficiency are related to EU membership. The results reveal a statistically significant cost efficiency gap between EU and non-EU banking systems in the region, where on average EU banking systems tend to be more cost efficient than their non-EU counterparts. In contrast to other similar studies analyzing banking efficiency in South East European countries, we also run $\beta$-convergence and $\sigma$-convergence tests, as proposed in the literature. Based on these tests we can draw conclusions concerning the existence of a catching-up effect, since the detected cost efficiency gap is closing predominantly because of adjustments on the side of the less efficient banks. Additionally, we found that during the 2008 global financial crisis, the average cost efficiency scores of banks in the region improved, which could be explained by enhanced incentives of bank managers for intensified cost optimization in banks in crisis times. Our results suggest that the institutional adjustments in the non-EU countries should continue towards EU standards, as the EU banking systems tend to dominate in terms of measured cost efficiency.

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1. Introduction

The purpose of this study is to examine banking efficiency in the South East European (SEE) countries\textsuperscript{1} (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Kosovo, Macedonia, Montenegro, Romania, Serbia and Slovenia) and to explore how the efficiency gap is related to the EU membership of these countries. Additionally, we investigate how banking efficiency in the SEE economies has evolved since the beginning of the financial crisis in comparison to the pre-crisis period. We rely on a vast body of literature on banking efficiency studying different bank efficiency correlates (e.g., Bonin et al., 2005; Brissimis et al., 2008; Poghosyan and Poghosyan, 2010; Košak and Zorici, 2011; Fang et al., 2011; Toçi and Hashi, 2013; Tochkov and Nenovsky, 2011; Sokic, 2015), the relation of banking efficiency to the development level of countries (for example, Fink et al., 2004), and the importance of banking efficiency for a functioning market (Choudhry and Jayasekera, 2014).

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\* We choose these countries because, in addition to being in the same region, they all exhibit path dependence (as defined by Liebowitz and Stephen, 2000) towards EU membership.

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Despite their completeness, the existing studies lack a more detailed analysis of the effects of EU membership on banking efficiency in European countries, and this is the main motivation for our paper. For banks operating in the EU member countries, we expect several characteristics related to EU membership to exist that could actually influence the efficiency of individual banks and thus also the average efficiency of the banking sectors. For example, banks in EU member countries have easier access to money markets and therefore the perceived liquidity risk is expected to be lower. Also, studies show that the degree of financial integration within the EU contributes to a lower cost of capital (Baltzer et al., 2008). Furthermore, the harmonized regulatory rules indisputably facilitate cross border operations within the EU, enabling economies of scale and cost savings. We therefore believe that studying EU membership in the context of banking cost efficiency should be relevant and, to some extent, has been overlooked by researchers so far. We are convinced that the banking sectors in the SEE countries represent an ideal environment for studying cost efficiency effects related to EU membership, since they have undergone an overwhelming transition from centrally planned economic systems to market oriented economies in the last twenty-five years. Also, while some of these countries already became full EU members (Slovenia, Bulgaria, Romania, and Croatia), for the rest EU membership remains a forthcoming goal of their reforming endeavors.

Therefore, the first aim of our study is to explore the efficiency gap and its relation to EU membership. This part of our analysis builds on the commonly accepted view that the developed economies of the EU member states are ahead of the emerging non-EU economies with regard to their banking performance. A comparison of these two groups shows if there is a gap in the cost efficiency between banking systems. For example, Scholtens (2000), Riess et al. (2002), Stavarek (2006) and Weill (2007) showed that the banking sectors in Central and Eastern European (CEE) countries lagged behind their Western European counterparts regarding their development level, but at the same time they were gradually converging. Moreover, a study by Kasman and Kasman (2013) came to the conclusion that the banking efficiency of EU and candidate countries is converging due to reforms. As all potential member countries in the sample try to harmonize their laws and regulations in accordance with EU standards, EU membership might be correlated with efficiency due to competitive pressure and easier access to liquidity. We extend the existing research on transition countries by including EU membership as a covariate of banking cost efficiency. Hence, an analysis of the relationship between efficiency and EU membership can be of interest not only to researchers but also to policymakers.

The second aim of our study is to shed some light on the influence of the financial crisis on banking efficiency in the SEE region. Despite the fact that banks in the SEE countries were not directly affected by the global financial crisis like their counterparts in the West, they did face some indirect consequences. Thus, many banks tried to manage the crisis by taking precautionary measures, rationalizing expenses and increasing cost efficiency. Matousek et al. (2015) showed that the 15 euro zone countries exhibited a decline in banking efficiency and found no evidence of convergence during the crisis period. Problems in the financial sector can produce spillover effects to the real economy in transition economies (Cevik et al., 2013; Dong and Men, 2014; Cojocaru et al., 2016), and thus developments in the financial sector deserve to be observed closely. Since the start of the financial crisis in 2008, bank managers and regulators initiated a variety of activities to mitigate the undesirable consequences of the financial crisis and to improve the cost efficiency of banks. Therefore, we compare banking efficiency in the pre-crisis period from 1999 to 2007 with the cost efficiency identified during the recent financial and banking crisis, for which we employ data for the 2008–2013 period. On average, we expect the cost efficiency of banks to improve in the aftermath of the crisis due to the implementation of different cost saving measures.

Our main contributions to the literature are twofold. First, we identified a gap between the average banking efficiency in EU member and non-member countries, where banks in EU member countries turned out to be superior in terms of cost efficiency. Second, formal convergence tests revealed converging banking cost efficiency in the sample countries, with accelerated convergence during the crisis period. Our findings also have some policy implications, as the adoption of the institutional settings and regulatory standards required for banks operating within the EU can be associated with advancements in the cost efficiency of banks.

The paper is structured as follows. In the next section, we briefly describe the banking industry developments in the region during the last twenty-five years. We present a literature review on banking efficiency in Section 3, with a special emphasis on studies of transition economies. The methodology and model specification of the cost efficiency and convergence model are presented in Section 4. In Section 5, the data and variables are described, while Section 6 explains the results. Finally, in the last section, we present the conclusions of the paper.

2. Banking industry developments in the region

In the last quarter century, after the introduction of the market economy in the late 1980s and early 1990s, the banking sectors in the SEE region have gone through enormous and impactful changes that radically reshaped the banking systems in the region and made them more like the banking systems in Western Europe. Bonin et al. (2014) identified three stages of banking sector development in transition countries: first, the emergence of banking sectors from planned economies, second, the emergence of modern banking systems, and third, the stage of transition banking, which coincided with the global financial crisis.

According to Bonin et al. (2014), the first stage was characterized by underdeveloped banking sectors struggling with macroeconomic turbulences in the local economies and related significant economic uncertainties, while during the second stage more mature banking sectors were established, with a dominant role of foreign banks in most of the countries in the region. Economic and political reforms as well as reforms in the banking industry in the SEE region were not initiated
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