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Consolidation and commercial bank net interest margins: Evidence from the old and new European Union members and candidate countries

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ABSTRACT

This paper examines the effects of financial reforms on the determinants of commercial bank net interest margin in the banking systems of the new EU member countries and candidate countries by dividing the sample period (1995–2006) into two sub-periods: consolidation period (1995–2000) and post-consolidation period (2001–2006). The paper also compares the new and old EU members to check whether differences with respect to the determinants of net interest margins between these two groups of countries exist within the same time period. The results indicate that size and managerial efficiency are negatively and significantly related to net interest margins in the two sub-periods. Regulators should promote merger and acquisition and market entry in order to increase the scale and efficiency of banks operating in the sector. Exploitation of the scale economies seems to be important in decreasing the interest rate spread in the sampled banking sectors. The results further indicate that all macroeconomic variables are statistically insignificant in the second sub-period, suggesting that differences in macroeconomic fundamentals have decreased among the sampled countries due to the increased convergence process in recent years. As for the comparison of the new and old EU members, the results suggest that the financial and economic convergence between the new and old members has not been completed. Macroeconomic differences within the group and between the groups still exist.

1. Introduction

Through the process of intermediary roles of channeling funds from lenders to borrowers, banks play a pivotal role in economic growth. In this context, as the costs of intermediation affect social welfare, it is valuable to focus on the bank net interest margin. The net interest margin, commonly defined as the difference between interest revenue minus interest expense per dollar of assets, conveys vital information for the efficiency of the banking system (see Demirguc-Kunt and Huizinga, 1999). Therefore, identifying the determinants of net interest margin would help to understand changing trends in bank efficiency through time and provide policy implications for the banking environment.

Following the economic and political transformations in the last decade, the Central and Eastern European (CEE hereafter) countries have launched reform programs to stabilize their economies. The configuration of financial infrastructure has been a cornerstone in the transition process, which includes establishment of a stable and efficient banking system. Banking systems in the CEE countries have undergone a profound restructuring process, which included a comprehensive consolidation. The transformation period of the banking system was characterized by completion of debt consolidation, restructuring and privatization of state-owned banks, elimination of the restrictions on domestic and foreign market entries and development of regulatory frameworks and supervision.

The initial efforts of transformation to market economies in the CEE countries were later reinforced by the goal of European Union (EU hereafter) membership. However, the structural financial differences between the new and old EU member countries possessed great challenges for both the new member countries and the EU. Significant efforts were directed towards improving banking supervision and legislation in compliance with the EU regulatory system and the international banking supervision standards. This new legal and economic environment increased the attractiveness of the banking system to foreign investment. Despite the structural differences between the new and old EU member countries' banking systems, new competitive conditions motivated large financial institutions in the old EU member states to extend their cross-border operations into the potentially more profitable markets of the new member countries.[1] One

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[1] Although the CEE countries have made significant progress since the beginning of the liberalization of their banking systems, these markets presented lower levels of financial intermediation, had higher levels of bank concentration, relied heavily on bank finance, and had higher interest margin compared to the old EU members' banking markets.

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of the consequences of this process is the wave of mergers and acquisitions occurring in the European banking industry during the last decade and a reduction in the number of banks in many old and new member countries.

The main objective of this paper is to investigate the effects of the financial reforms on the determinants of net interest margin over the period 1995–2006 in the banking systems of the new EU member countries from CEE as well as Malta and Cyprus, and three candidate countries; Croatia, the Former Yugoslav Republic of Macedonia and Turkey. By focusing on the net interest margin of banks operating in these countries, we will attempt to analyze the impact of the deregulation and liberalization process on the pricing behavior of banking firms. The investigation of bank net interest margins is crucial since they include important information about the efficiency of banking systems. Most of the existing studies concentrate on the determinants of net interest margins on the banking industries of developed and some emerging countries. Despite the variety of those empirical studies, surprisingly little research has been carried out on the transition economies. In this paper, we mainly try to analyze the impact of consolidation, which occurred in the banking systems of these countries in recent years, on the net interest margins. The number of banks in these countries has decreased significantly and the ownership of banks has particularly changed mainly through the privatization. Hence, it seems worthwhile to examine the impact of these recent changes on the net interest margin by dividing the sample data into two sub-periods. Furthermore, we investigate whether bank behavior in the new EU member and candidate countries differs from that observed in the old EU countries.

The contribution of this paper to the related literature is three-fold. First, it utilizes a unique panel data set comprising balance sheet and income statements of 372 commercial banks from the twelve new EU members and three candidate countries, and 1079 commercial banks from the old EU countries over the period 1995–2006. Second, to the authors' best knowledge, this is the first study that examines the impact of consolidation process on the determinants of net interest margin by dividing the sample into two sub-periods. By dividing the sample, we investigate how the magnitudes of net interest margin determinants have changed between the two sub-periods. Finally, we compare the new and old EU members to check whether differences with respect to the determinants of net interest margins exist between two groups of countries within the same time period.

The rest of the paper is organized as follows. Section 2 gives a brief overview of the CEE countries' banking systems, followed by the review of relevant literature on the determinants of banks' net interest margin. Section 4 outlines the econometric methodology. The data set and empirical results are presented in Section 5. Finally, Section 6 contains concluding remarks and a number of policy implications.

2. An overview of Central and Eastern European countries' banking systems

The financial systems in the CEE countries had been in a relatively poor shape and significantly less efficient at the beginning of the 1990s. However, over the last two decades, wide-ranging reforms have been made on their banking systems, as they moved away from a centrally planned to a relatively free market system. The initial steps of transition process were strengthened by the goal of joining the EU. Throughout the transition, these changes and developments were characterized by the liberalization of product and financial markets, restructuring and privatization of the state-owned banks, the entry of new private banks, the liberalization of interest rates and the establishment of the legal and supervisory framework (Kager, 2002). During the initial phase of the transition period, the emergence of a large number of banks engaged in financial distress and also the lack of effective regulatory and legal framework led to severe banking crises. In the process of overcoming these crises, the CEE countries launched large-scale privatization programs to improve efficiency in the banking sector by increasing foreign and domestic competition in the mid-1990s. All these developments and the introduction of the Economic and Monetary Union (EMU) in 1999 contributed to a viable, efficient and transparent banking system.

The banking sector consolidation accelerated in the early 1990s and peaked in 2000. During the 1990s, CEE countries' banks have experienced problems due to high proportion of non-performing loans in their credit portfolios and capital inadequacy. Over the consolidation period, they tried to improve their asset quality by writing off non-performing loans, enhancing regulatory framework according to the Bank of International Settlements and applying risk management tools. The number of banks decreased as insolvent banks exited from the market and the wave of mergers and acquisitions enlarged during this period. Through mergers and acquisitions, domestic banks were forced to cut costs and improve efficiencies (Claessens et al., 2001). Overall, bank consolidation is believed to have a substantial influence on the financial stability in the CEE countries and catching up process with the EU. This makes the evolution of the banking systems of CEE countries an interesting research field.

3. Literature review

The research of bank interest margins was first studied by Samuelson (1945), who investigated the impact of interest rate on banking system. The pioneering study by Ho and Saunders (1981) has been the reference framework for many of the contemporary studies of determinants of bank interest margins. In the Ho and Saunders (1981) dealership model, a bank is assumed to be a risk averse dealer in the credit market, acting as an intermediary between the demanders and suppliers of funds. These researchers analyzed the determinants of bank margins and found that the interest margin depends on both the degree of market competition and the interest rate risk. By contrast, Zarruck (1989) and Wong (1997) viewed the banking firm in a static setting where the supply and demand of deposits and loans simultaneously clear both markets by employing the micro-model of the banking firm approach.

Previous empirical studies have examined bank interest margins both in the developed markets of Western Europe and the US, and the emerging markets of Asian and Latin America, whereas the CEE transition markets have been examined to a lesser extent. Studies focusing on the determinants of net interest margins of developed countries have generally supported the theoretical structure of the Ho and Saunders (1981) model. While Allen (1988) extended this empirical model by including different types of credits and deposits, Angbazo (1997) incorporated the risk of loan defaults in the model, providing evidence of positive relationship with the default risk, core capital, non-interest bearing reserves and management quality, and negative relationship with the liquidity. Also, the results of Saunders and Schumacher (2000) indicated that net interest margin was affected by implicit interest payments, opportunity cost, capital-to-asset ratio, market power and volatility of interest rate in six countries of the EU and in the US over the period 1988–1995. Using a set of bank characteristics, macroeconomic and regulatory indicators as well as financial structure variables in some European countries within the time frame 1986–1999, Abreu and Mendes (2003) found that loan-to-asset ratio, operating costs and equity-to-assets ratio were positively related with net interest margins. However, inflation had a negative impact on net interest margins, which contradicted the findings from other studies (see Hanson and Rocha, 1986; Barth et al., 1997; Demirguc-Kunt and Huizinga, 1999; Denizer, 2000; Claessens et al., 2001).

The most recent extension of the Ho and Saunders (1981) model was studied by Maudos and de Guevara (2004), who included operating cost as an explicit component of net interest margin and direct measurement of market power. The findings suggested that market power, operating