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Bank *x*-efficiency in Ukraine: An analysis of service characteristics and ownership

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Abstract

This paper investigates managerial and scale *x*-efficiencies of commercial banks in Ukraine from 1998 to 2003. A large number of banks would suggest competition and efficiency. Ukrainian banks waste half of factor inputs during the production of services by operating off the efficient frontier. Large banks dominate in managerial efficiency; small banks are superior in scale efficiency. Significant numbers of small banks experience increasing returns to scale. Consolidation between small banks may help banks exploit economies of scale and become attractive foreign investment targets. Evidence suggests majority foreign owned joint ventures are optimal formats; banks operating in industrial, politically favored areas outperform others.

JEL classification: G2; D2; G21

Keywords: Ukraine; Transition countries; Bank efficiency

1. Introduction

This study focuses on the banking system in Ukraine, the second largest country after Russia to emerge from the breakup of the Soviet system, where banking development has been very different from that of most Central and East European countries. Many transitional countries in this region have been successful in conducting financial reforms to eliminate underlying distortions and restructure their banking sectors. However, in countries that were part of the Soviet Union, financial sectors still remain underdeveloped, and the rates of financial intermediation continue to

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be quite low (Fries & Taci, 2005; Grigorian & Manole, 2006). A dysfunctional financial and legal system can be a *negative externality* for the banking sector by increasing the cost of making and collecting loans, which could slow down the transformation of savings into productive investments and suppress the economic growth of a nation. Ukraine is among the poorest transition countries in the region with income per capita at about $1041 (as of 2003). Thus, an efficient financial structure and banking sector are essential for Ukraine, especially in light of mounting evidence that financial sector development significantly boosts economic growth (King & Levine, 1993; Levine & Renelt, 1992).

Unlike other transition countries, the development of the Ukrainian banking system has resulted in a relatively large number of private, domestically owned institutions with an extremely low participation of foreign capital and foreign banks. More so in Ukraine than in other Eastern European countries, transaction and intermediation costs are very high due to thin capital and money markets, substantial asymmetric information, inefficient provision by the state of the rule of law, and lack of trust of the populace in the banking system (Klots, 2001). Although many prudent regulations have been enacted and supervisory systems formed to smooth the transformation and create financial stability, promoting banking sector efficiency remains an important concern for Ukrainian policy makers and various supranational organizations that support the transition process (Kyj & Isik, 2005).

Using a non-parametric approach, Data Envelopment Analysis (DEA), the objective of this exploratory study is to analyze the *x*-efficiency performance of Ukrainian banks during the transition period between 1998 and 2003 to see how far the country has progressed in terms of reforms, competition and efficiency. Grigorian and Manole (2006) demonstrate that the DEA technique can be successfully applied to banking systems in transition countries. *X-efficiency* scores calculated by DEA show how close an observed bank is to an estimated "best-practice" frontier. Unlike the non-frontier scale or scope efficiency scores, which concern a bank's choice of *outputs*, the frontier *x*-efficiency concerns a bank's use of *inputs*. *X*-efficiency refers to how well a bank is utilizing its inputs relative to comparable leading banks on the efficient frontier. The analysis of input *x*-efficiencies is thus critical for Ukraine and other transition countries since the banks of this region come from a central planning environment. In this environment, where there were no incentives for profit maximization, inputs were not necessarily of the scale and mix that minimized costs. Therefore, one would expect that transition bank managers have a lot to improve upon in terms of efficient resource management.

In cross-country studies such as Grigorian and Manole (2006) and Fries and Taci (2005), Ukrainian banking is often cited as an example of a quite inefficient and high cost banking system, but no further or market specific explanations are provided. This paper will try to fill in this gap by investigating in detail the reasons behind this underperformance.[2] To our knowledge, only one study by Mertens and Urga (2001) focuses *exclusively* on Ukrainian bank efficiency. They find small banks were more cost-efficient but less profit efficient than large banks. However, because of data limitations, their study was forced to use data for 1998, the year of the Russian currency crisis, and to use only 36% of Ukrainian banks for which the data was available. In contrast, to provide a closer examination of efficiency in the Ukrainian banking system, this study

[2] Because their focus and scope are extensive, cross-country studies suffer substantially from generalization and lack of depth for individual countries under study. For example, in Grigorian and Manole (2006), Ukraine is mentioned only *three times* and in Fries and Taci (2005) just *six times* in the text (however when cited, country specific attributes are not discussed, only Ukraine's efficiency and cost rankings are given).