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Efficiency and bank profitability in MENA countries

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ABSTRACT

This study compares accounting-based and economic-based measures of efficiency and profitability of banks in ten Middle East and North Africa (MENA) countries. Accounting variables help explain cost and profit efficiency, but cost efficiency has little impact on profitability and profit efficiency. Our results suggest that researchers perhaps should focus more on profit efficiency than cost efficiency. MENA banks are slightly less cost efficient than European banks, but similar to banks in developing economies. However, MENA banks score well in terms of profit efficiency relative to banks world-wide. Finally, almost all banks in the MENA region are below optimal size.

1. Introduction

During the last two decades the banking sector in the Middle East and North Africa (MENA) region has experienced major transformations in its operating environment. A sound, well-functioning banking system is essential in providing for sustained growth and development in this politically and economically important part of the world. While the efficiency of the banking sectors in North America and Europe has been analyzed rather thoroughly, less is known about the determinants of cost efficiency and bank profitability in developing countries. Bos and Schmiedel (2007, p. 2083) point out that "the number of cross-country comparative studies is still limited" and that most of these studies focus upon Europe. The MENA region is important for a number of reasons. It represents a bridge between Europe and Asia, it is a fast growing region in terms of both population and wealth, and its banking sector is relatively young with most banks only being established in the 1970s or later. The MENA region includes the rapidly expanding, oil rich countries of the Gulf Cooperation Council (GCC) as well as the Arab countries of the Near East and North Africa. The world's largest Islamic banks are located in the MENA region and its mix of conventional and Islamic banks permits a comparison of efficiency and profitability by type of bank.

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Accounting-based studies of bank performance generally use comprehensive information from financial statements to identify the determinants of bank profitability, as measured by return on assets (ROA) or return on equity (ROE). Studies focusing on an individual country (Kosmidou et al., 2007; and Ben Naceur and Goaied, 2008) or a geographical region (Kwan, 2003; and Bonin et al., 2005) have examined bank-specific factors of profitability (e.g., size, revenue growth, risk, and control of expenses), while studies encompassing multiple countries (Hassan and Bashir, 2003; and Valverde and Fernandez, 2007; Poghosyan, 2010; Ben Naceur and Omran, 2011) have considered external factors (e.g., inflation, concentration, and GDP growth) in addition to a few internal factors of profitability.

Economics-based research has focused on efficiency, as calculated by the distance away from some ideal frontier measured relative to the lowest cost or highest profit bank in the sample. Many studies have adopted nonparametric techniques, such as data envelopment analysis (DEA) that impose no functional form on the cost or production function, but the more prevalent approach in the economics-based literature is based on the parametric estimation of cost, production, or profit functions. Among the parametric approaches, the Aigner et al. (1977) stochastic frontier approach (SFA) or the Berger (1993) distribution free approach (DFA) are the most popular and generally provide consistent efficiency rankings among banks. Although SFA has been adopted more frequently than DFA, the primary advantage of DFA is that it makes less assumptions about the form of the error tem and the distribution error terms used to estimate cost or profit efficiency.

Although the bank performance literature is generally either accounting-based or economics-based, in recent years some articles have combined aspects of both approaches. For example, Berger and Mester (1997), Maudos et al. (2002), Hassan (2005), Fries and Taci (2005), Yildirim and Philippatos (2007), and Staikouras et al. (2008) have examined the accounting-based correlates of economic efficiency measures. These studies have found that accounting based-variables, not included in the economics cost and profit functions, explain from 9% to 59% of the cost and profit efficiency differences between banks.

Following this recent strand literature, the purpose of our paper is to estimate cost and profit efficiencies for banks in the MENA region and compares these results with the accounting-based determinants of bank profitability as measured by ROA and ROE. We estimate translog cost and profit functions to determine scale economies and the efficiency of individual banks in the MENA region over the period 2000–2008. We identify average bank efficiency by country, and compare the efficiency of Islamic versus conventional banks. Our approach permits a consistency check between the results of economics and accounting-based measures of bank performance.

Our results have particular implications for the regulation and management of MENA banks. First, the average bank in the MENA region operates at a level below optimal size, so that bank consolidations and mergers should generally not be opposed. Second, since there is little relationship between cost efficiency and profitability or profit efficiency, we believe that economics-based studies of banking should focus more on profit efficiency rather than cost efficiency.

The remainder of the paper is organized as follows. Section 2 provides a review of the literature on the determinants of profitability and bank efficiency and Section 3 describes the data. Section 4 defines the variables used to find the accounting-based determinants of profitability, while Section 5 estimates cost and profit efficiency using translog cost and profit functions. Section 6 compares accounting-based and efficiency measures for individual banks and Section 7 makes some concluding remarks.

2. Literature review

Accounting-based research into the determinants of bank profitability has examined the bank-specific, industry-specific, and macroeconomic factors affecting individual bank performance. Most researchers have measured performance using either return on equity (ROE) or return on assets (ROA). Although the literature began earlier, the approach is nicely illustrated by Molyneux and Thornton (1992) in their study of bank profitability across 18 European countries over the period 1986–1989 and by Demirgüç-Kunt and Huizinga (1999) who examined the internal and external determinants of profitability for banks in 80 countries over the period 1988–1995. The explanatory variables in the latter study included various internal or bank-specific ratios such as staff expenses to total assets, cash and securities to total assets, and bank capital to total asset; macroeconomic variables such as money supply growth, inflation, and interest rates; and industry variables such as concentration, ownership structure (government or private). More