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Regulatory changes and productivity of the banking sector in the Indian sub-continent

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Abstract

This study seeks to measure changes in productivity and technical efficiency levels within banking sectors of the Indian sub-continent: specifically India, Pakistan and Bangladesh, over the period 1993–2001. This study is taken in the context of a number of sweeping reforms across the sub-continent in the early 1990s, and the possible effect this may have had upon efficiency levels. A Malmquist index of total factor productivity (TFP) change over the time period in question is employed, along with a Tobit regression, in order to determine whether these measures of regulatory and financial reform has had the desired effect upon the Indian sub-continent in terms of productivity and efficiency levels. It is found that technical efficiency both increases and converges across the Indian sub-continent in response to reform. India and Bangladesh experienced immediate and sustained growth in technical efficiency, whereas Pakistan endured a reduction in efficiency during the middle years of the study, before rebounding to levels comparable to the rest of the sub-continent in the latter years of the study. These results indicate that the measures employed to modernise the financial sectors of these respective countries have had the desire effects upon levels of technical efficiency.

JEL classification : D2; D24; G18; G21; G28

Keywords: Technical efficiency; Total factor productivity; Pakistan; India; Bangladesh; Banks; Regulations

1. Introduction

Efficiency plays an important role in the operation of firms. If a policy of shareholder wealth maximisation is to be pursued, it is implied that maximum efficiency is extracted from a firm's resources during the production process, or that the minimum quantity of inputs is used to

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achieve a desired level of output. Studies on efficiency using Malmquist indices have been relatively forthcoming, including analysis of such diverse industries as Mexican Ports (Estache, Tovar de la Fe, & Trujillo, 2004), Columbian power distribution systems (Pombo & Taborda, 2006) and Norwegian motor vehicle inspection agencies (Odeck, 2000). However, there has been little conducted in the way of research on efficiency within banking sectors of developing economies (Berger & Humphry, 1997). This is unfortunate, as banks and financial institutions play a hugely important economic role in providing financial intermediation and economic acceleration and convert deposits into productive investment (Podder & Mamun, 2004). For this reason, the study of banking in developing economies entails a greater significance.

This paper seeks to examine levels of efficiency in the banking sectors of India, Pakistan and Bangladesh over the period 1993–2001, which is characterised in the Indian sub-continent as a time of significant reform and reform in each country's respective banking sectors. Because of its unique position within the framework of an economy, the banking sector of a country is invariably more heavily regulated and scrutinised than other industries. This trend is particularly apparent in developing countries, where banks tend to exhibit poor performance as a result of overly prohibitive regulation (Kumbhakar & Sarkar, 2003). Thus, tests of efficiency can be made more meaningful by including some comparison of efficiency both pre and post reform. However, as subsequently outlined in the paper, prior studies into variations in technical efficiency between pre and post reform environments have displayed mixed results. Expectations of the effects of the reform of the banking sectors of countries within the Indian sub-continent are therefore unclear.

2. Country case studies

During the 1980s and 1990s, a large number of economies undertook extensive reform processes, particularly with respect to the banking sector. The developed world led the way in this respect, most notably with the USA banking sector experiencing increases in productivity and efficiency resulting from a relaxation of regulations. Theory does not dictate a clear expected result of reform in the banking sector in terms of efficiency gains, as the consequences of reform may depend on industry conditions prior to the reform process, as well as the type of reform employed (Berger & Humphrey, 1997). As a result of this, studies of efficiency in banking have not displayed as clear-cut trends as are illustrated in the above examples. US studies in particular show that productivity within the banking sector decreased following deregulation (Berger & Mester, 2003). Wheelock and Wilson (1999) concurred and observed declining efficiency and productivity within the US banking sector over time (but did not look at any regulatory changes during that period). However, Bauer, Berger, and Humphrey (1993) observed that interest rate competition between US banks has not significantly changed post-reform. In contrast, there have been several studies that point to reform having a positive effect upon efficiency. Gilbert and Wilson (1998) showed that Korea's process of privatisation has resulted in its increased output and productivity. These results have also been observed in banking studies. Zaim (1995) found that a similar trend existed in the case of the Turkish banking sector. Mendes and Rebelo (1999) study the Portuguese banking sector, and illustrate that reform in that specific case did not lead to an increase in cost efficiency, but rather to technological regress.

Developing countries have also embarked upon a trend of reform, a prime example of which being the Indian sub-continent of South Asia, where constituent countries introduced a number of similar reforms throughout the 1990s. India, the country in the heart of this sub-continent, was a part of the British Empire until it was recognised as a republic in 1947. India has shed its