

Chapter 15

The Effects of Technology on Bank Performance in Advanced and Emerging Economies: An Empirical Analysis

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ABSTRACT

Electronic banking is a very popular aspect almost all over the world especially in the last few years. Banks make investment in this area in order to attract the attention of the customers. Therefore, it can be possible to survive in such a competitive environment. In the literature, it is also discussed that making investment into the technological aspects has an important contribution to the financial performance of the banks since it increases efficiency in banking operation. Similarly, in this chapter, the effects of electronic banking technologies on bank profitability and costs are investigated. The analyzes are performed with aggregated data from 23 developed and emerging economies covering the 2005-2015 period. The relationship between the electronic bank services and various performance and cost criteria such as ROE, cost to total income ratio, non-interest income, and overhead expenses to total assets ratio has been analyzed. The findings show that the increase in the use of electronic banking technologies has a positive impact on profitability and a negative impact on costs. Banks' investments in technological innovations improve both their productivity, product and service quality, and profitability performance. While considering the issues emphasized in this study, it can be recommended that banks should increase their investments for the technological improvement in order to have higher financial performance.

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INTRODUCTION

Globalization has many advantages for the countries in many different ways. For example, companies got a chance to make investment in new markets because of the disappearance of economic borders among the countries. In spite of this situation, it can also be said that globalization has an increasing effect on the competition due to the new entrants in the market. Hence, companies try to take actions in order to survive in such a competitive environment (Yıldırım, 2011; Yüksel, 2017). It can be mentioned that there are mainly two different ways so as to achieve this objective which are generating new product or service or presenting existing products in new and advanced form (Dinçer et al., 2018).

Banking sector is a good example in which there is an increase in the competition after the globalization (Ersin and Duran, 2017; Yüksel, 2016). It is accepted as one of the sectors where technological advances are closely watched and most commonly used. Like most financial markets, it is also difficult to develop new product and services in banking sector. For this reason, it is important to present existing products to customers in new forms. Hence, it is stated that technology-based electronic applications such as Internet banking, mobile banking, telephone banking, automated teller machines (ATM) and point of sale (POS) networks offer significant advantages while presenting existing products to customers. Customers can easily access virtually any type of banking product at a lower cost than the standard, 24 hours a day. In the process, the commitment to the branches can be reduced as much as possible. All these features encourage customers to receive electronic banking services (Akhisar et al., 2015; Ersin and Eti, 2017). Increasing demand for such services has led banks to shift a significant portion of their investments to this area. It is also obvious that this tendency is expected to continue in the future (Tunay and Yüksel, 2017).

Technological-based products provide significant advantages to the banks (Zhang et al., 2018). For instance, there can be cost advantages for the bank, profitability can be increased, and the risks can be minimized in comparison with the traditional banking products (Tunay et al., 2015; Zengin and Yüksel, 2016). In addition, studies have shown that the return times of investments by banks in this area are considerably shorter when there are enough customers to demand technology-based products. Findings of applied studies on various countries reveal that electronic banking services increase the performance of banks. However, as some underdeveloped and developing countries are not able to invest enough infrastructure, it is also seen that the expected results are not available because of the tendency of customers to traditional branch-based banking (Long et al., 2017; Yüksel et al., 2017).

There can be many different examples for the banking sector to present existing products to customers in new forms. Within this scope, ATM plays a very significant role because by improving operations that can be made in this machine, banks can provide higher customer satisfaction. For example, if customers can make most of their banking operations by using ATM, such as withdrawing money, paying bills and money transfer, it is obvious that these customers can prefer to work with these banks. In addition to ATM, there can be improvement in the products of the banks related to the internet banking. For instance, while making banking operations by using internet banking channel, the expectations of the customers can be satisfied much easily. As it can be understood that improving existing products gives a very significant advantage for the banks to increase their competitive power.

While considering these findings and evaluations, in this study, it is aimed to analyze the impacts of electronic banking applications on banking performance and the costs of the banks. For this purpose, 23 developed and emerging economies are taken into the consideration. In addition to this issue, system dynamic panel data models used in this study in order to achieve this objective. Moreover, annual data

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