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Is the Internet delivery channel changing banks' performance? The case of Spanish banks ☆

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Abstract

In spite of the conspicuous use of the Internet as a delivery channel, there is a relative dearth of empirical studies that provide a quantitative analysis of the impact of the Internet on banks' financial performance. This paper attempts to fill this gap by identifying and estimating the impact of the adoption of a transactional web site on financial performance using a sample of 72 commercial banks operating in Spain over the period 1994–2002. The impact on banks' performance of transactional web adoption takes time to appear. The adoption of the Internet as a delivery channel involves a gradual reduction in overhead expenses (particularly, staff, marketing and IT). This effect is statistically significant after one and a half years after adoption. The cost reduction translates into an improvement in banks' profitability, which becomes significant after one and a half years in terms of ROA and after three years in terms of ROE. The paper also concludes that the Internet is being used as a complement to, rather than a substitute for, physical branches.

JEL classification: G21; O32; O33

Keywords: Commercial banks; Internet banking; Profitability; Cost and income structure

1. Introduction

At the time of writing this paper, expectations on the impact of information technologies in general and the Internet in particular on retail banking are more realistic and far

☆ The opinions stated herein are those of the authors and do not necessarily reflect those of Banco de España.

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from the revolutionary views existing at the end of the 90's or the turn of this century (see as an example of these views Feng, 2001). The consensus is that the Internet simply adds another delivery channel to the existing channels (ATMs, branches, telephone). Nonetheless, despite the success of the multichannel model, few empirical studies are available regarding the impact of the Internet on the financial performance of multichannel banks worldwide and particularly in Europe. Frame and White (2004) describe some of the most recent studies in the US and "*urge fellow finance economists to expend some effort toiling in this untilled field*" (p. 137).

This paper attempts to fill this gap by focusing on the benefits of the transactional web site from the point of view of the commercial bank and not on an analysis of the determinants of the Internet adoption decision by the bank (Furst et al., 2000) or the retail consumer (Bauer and Hein, 2006). To the extent that banks operating in Spain share the same characteristics such as their universal character with continental European banks, our results could be extrapolated to the broader European banking system.

Banks operating in Spain have not been an exception in the adoption of transactional web sites. Moreover, their adoption strategy has been in line with the current world wide trend towards a multichannel ("clicks and mortar") approach. Adoption started in the late 1990's and by 2002, 55% of the commercial banks were using the Internet as a distribution channel for money transfers, brokerage and securities trading transactions and deposits. For the purposes of this paper, multichannel banks are those that use traditional distribution channels (i.e. branches and ATMs) as well as telephone and Internet regardless of the intensity of usage in terms of services provided or volume of operations contracted over the Internet. Hence, the primarily Internet banks are *also* included in our sample because they use, although to a lesser degree, more traditional delivery channels.[1]

The purpose of this paper is twofold: First, to identify and estimate the impact of the adoption of transactional web sites on the performance of commercial banks operating in Spain. To this end, we explore the impact on profitability and operational performance ratios of the adoption of the Internet as a distribution channel, using a sample of 72 commercial banks over the period 1994–2002. Moreover, we examine whether the Internet is a complement to or a substitute for physical banking branches.

The paper uses information from the regulatory database of Banco de España. It also draws from a voluntary survey carried out by Banco de España on Internet adoption of all depository institutions operating in Spain. We have also used information from the individual banks' web sites. The database includes 72 commercial banks, accounting for nearly all bank deposits during this time. The data corresponds to two samples: Banks without transactional web sites, though they may have informational web sites (*traditional banks*), and banks with transactional web sites (*multichannel banks*).

Our results suggest that the impact of Internet on banks' performance takes time to appear. The adoption of the Internet as a delivery channel has a positive impact on profitability (*ROA* and *ROE*) and overhead expenditures (in particular, staff, marketing and IT costs) as compared with traditional banks. The impact of Internet adoption is not immediate but gradual. In the case of overhead expenses the impact turns out to be significant one and a half years after adoption reaching a maximum 30 months after adoption. The

[1] They do have at least one-full-service physical office. The results are robust to the exclusion of these primarily Internet banks.