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The adoption of web banking at credit unions

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Abstract

This paper examines the decision to adopt web and personal computer banking by credit unions. It finds that larger credit unions are more likely to adopt new technologies, are more likely to adopt earlier, and are more likely to offer more advanced versions of the technology. There is also some evidence that credit unions that provide web access also tend to offer interest rate spreads that are less beneficial for their members.

JEL classification: G21

Keywords: Credit unions; Financial innovation

1. Introduction

Technology is playing an increasingly important role for financial intermediaries. By allowing customers to access banking services without the need to physically visit the bank, banks reduce their costs while providing customers with increased flexibility. Despite the importance of this development, Frame and White (2004) show that there is very little research on financial innovation, in banking or in general. This paper addresses one type of innovation by looking at the factors that affect the adoption decision of web and personal computer (PC) banking at credit unions in the United States over the period 2000–2003.

This study compares behavior of credit unions from the end of 2000 to 2003 using data made public by the National Credit Union Association (NCUA). This is particularly a good time to look at web adoption since a large number of credit unions develop websites during this period. The use of data from credit unions also provides an interesting perspective on this issue. Credit unions differ from commercial banks in that they are non-profit financial institutions. Also, members of

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a credit union must have a "common bond", for example, be employees of the same company or have the same occupation. However, the interpretation of the common bond requirement has loosened somewhat in recent years, promoting the growth of credit unions and bringing them into conflict with commercial banks (Robbins, 2005). Because of the increased popularity of credit unions, the relaxation of the common bond requirement, and the reduction in number of credit unions, the average size of credit unions has grown. As we shall see, the size of a credit union is an important determinant of its technological offerings and so policies that affect credit union size will indirectly influence the kind of services that members of credit unions receive.

The data from the NCUA have several advantages when looking at technological adoption. In addition to reporting whether the credit union has a website, it also lists the kind of website available, along with what services can be accessed electronically. This paper will take advantage of this data by looking at both the adoption decision by credit unions and the range of services they offer. Also, the data set has information on interest income and expenses which will be used in the analysis.

This paper finds several factors that are important for predicting web adoption and use. The paper finds that greater asset size is significant for the decision to adopt web or PC banking, consistent with the hypothesis of returns to scale in the use of technology. Interestingly, the paper also finds a connection between the financial position of the credit union and its web offerings. Credit unions provide an interesting context for this question. For commercial banks, it would be natural to think about how the use of technology affected profitability, for example, return on equity or an equivalent market measure. However, credit unions differ in that they do not have a goal of maximizing profit. What exactly is their goal has been a matter of some debate; however, it is generally accepted that they wish to benefit both their borrowers and their depositors. To do this, they would like to offer both lower lending rates and higher deposit rates. In other words, credit unions prefer a smaller interest rate spread, in contrast to commercial banks that want larger interest rate spreads.

The spread could be connected to the decision to adopt in several ways. Banks that have a lower level of expenses can offer a lower interest rate spread and because of their low expenses they may be more willing to develop a website. On the other hand, credit unions that choose to develop websites may find themselves with higher costs, forcing them to increase the interest rate spread. Alternatively, credit unions that make use of technology to reduce their costs may be able to offer a smaller interest rate spread. The decision about technological offerings and interest rate spreads is really a joint decision. A credit union has to decide what mix of better interest rates and better services it wants to offer. This may differ from credit union to credit union due to heterogeneity in their customer base. Some credit unions may offer better technology and worse spreads, while other credit unions choose not to offer a new technology but provide their members with better spreads.

To evaluate this hypothesis, the interest rate spread will be included as an explanatory variable in the adoption regression. The paper finds that the interest rate spread is negatively related to web adoption, which is consistent with the hypothesis that there is heterogeneity in the mix of services credit unions offer, and that credit unions that offer better access do so at the cost of offering worse interest rate spreads. An alternate way of looking at the connection between the financial position of credit unions and web adoption is through the effect of non-interest income and expenses. The paper finds that credit unions with a higher share of delinquent loans and lower non-interest expenses are less likely to adopt websites.

Frame and White (2004) provide a review of the literature on financial innovation, including the effect of technological innovations. They find there is relatively little research in this area. Much of