A Critical Study on Recent Advantages of Technology in Banking Industries

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ABSTRACT

Over the last three decades the advantages of banking in the process of financial intermediation has been undergoing a profound transformation, owing to changes in the global technological system. This paper examines technological progress and its effects in the banking industry. Banks are intensive users of both IT and financial technologies, and have a wealth of data available that may be helpful for the general understanding of the effects of technological change. The research suggests improvements in costs and lending capacity due to improvements in “back-office” technologies, as well as consumer benefits from improved “front-office” technologies. The research also suggests significant overall productivity increases in terms of improved quality and variety of banking services. In addition, the research indicates that technological progress likely helped facilitate consolidation of the industry.

Key Words: technological progress, productivity, banks, mergers, efficiency.

1. Introduction

This paper examines the available evidence on technological progress and its effects in the banking industry. Innovations in information processing, telecommunications, and related technologies – known Collectively as “information technology” or “IT” – are often credited with helping fuel strong growth in the Indian economy, although questions remain about the relative importance of IT versus other factors. The extensive research on the banking industry may help in the general understanding about the effects of Technological change. The category of Depository and No depository Financial Institutions – of which Banking is an integral part – is the most IT-intensive industry in the India as measured by the ratio of computer equipment and software to value added Banks are also significant users of financial technologies that employ economic and statistical models to create and value new securities, estimate return distributions, and make portfolio decisions based on financial data. Examples include financial engineering used to create new financial derivatives, credit risk and market risk models employed to improve portfolio management and modern credit scoring and discriminant analysis used to evaluate credit applications. These financial technologies often depend heavily on the use of IT to collect, process, and disseminate the data, as well as on economic and statistical models to evaluate the data. Technological progress in the banking industry is also important because of the key roles of banks in providing financing, deposit, and payments services to other sectors of the economy.

We assess the effects of technological progress on productivity growth in the banking industry and on the structure of this industry. Research on banking benefits as well from detailed data on individual firms to specify cost and profit functions and control for differing business conditions when measuring productivity change, scale economies, and other performance indicators.

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statistical models to evaluate the data. Technological progress in the banking industry is also important because of the key roles of banks in providing financing, deposit, and payments services to other sectors of the economy. We assess the effects of technological progress on productivity growth in the banking industry and on the structure of this industry. The use of a single industry with relatively homogenous inputs and outputs may help mitigate problems of combining data from heterogeneous industries. Research on banking benefits as well from detailed data on individual firms to specify cost and profit functions and control for differing business conditions when measuring productivity change, scale economies, and other performance indicators. Some special banking data sets also allow for observation of specific technological changes and measurement of some of their effects. In addition, detailed information on the scale, geographic spread, and merger and acquisition activity of individual banks aid in evaluating the effects of technological progress on the structure of the industry, i.e., the extent to which technological progress facilitates industry consolidation. Study of the banking industry also demonstrates some of the general problems in measuring the effects of technological progress and how these problems might be addressed. For example, to the extent that markets are competitive, the benefits from technological advances in an industry may be competed away and passed through to customers or factors of production and not measured as productivity increases in that industry. As shown below, banks may have essentially “given away” the benefits from the ATM technology in the 1980s as the industry became more competitive due to deregulation and rents from market power shifted to consumers. It has been shown elsewhere how new products and quality improvements from technological progress are often neglected in government statistics and may lead to overstatements of inflation and understatements of productivity growth. In banking, there are many new products and quality improvements that are not easily captured in standard productivity measures, and we show how some may be measured in alternative ways.

The paper is organized as follows shows some background statistics on changes in the banking industry over time, reviews microeconomic research on examples of technological changes in the banking industry that provide some potential general inferences about new technologies and 5 discuss the research on the two main consequences of technological progress in banking examined in this paper, productivity growth and the structure of the industry.

2. Objectives of the Study:
   1. To assess the advantages of Information Technology in the banking industries.
   2. To study the various financial innovation in banking sector.
   3. To study the changing banking scenario.

3. Research Methodology:

A research design is the arrangement of condition for collection & data analysis of data in such manner to combine relevance to research purpose with economy manner.

Research Methods:-

The research Methodology consists of following six steps:

• Determine and define the research questions
• Select the cases and determine data gathering and analysis techniques
• Prepare to collect the primary and secondary data
• Collect data in the field
• Evaluate and analyze the data
• Prepare the report

1) Data source:-

There are two type data source of data collection which will be helpful to carry out research.
A) Primary data:-

Primary data will consist of original information gathered for the specific purpose. It will be collected through following method.

1. Observation.
2. Personal Interviews.

B) Secondary data: -

Secondary data will be collected from internet website, Ref books, magazines, newspapers, pamphlets, research papers, articles etc.

4. Recent advantages of Technology in Banking Industries in India

4.1 Technological changes in the banking industry and their advantages

Rather than reviewing microeconomic research on all banking technologies, we focus primarily on three main advantages in which the technological changes can be observed and some of their effects can be directly measured – Internet banking, electronic payments technologies, and information exchanges. These may not be the most important banking technologies, but they illustrate the multiplicity of potential different actual and measured effects of technological progress.

Internet banking

Internet banking is a relatively new front-office technology. Banks offer a variety of levels of Internet service and combinations of Internet and physical offices and ATM networks. Some banks employ a “click-and-mortar” implementation strategy in which the banks add a transactional Internet site to their physical offices and ATM networks. A transactional site allows customers to make transactions on-line such as accessing accounts, transferring funds, applying for a loan, etc. Other banks have set up informational websites that provide information about the banks and their services, but do not allow for on-line transactions.

Electronic payments technologies

Electronic payments technologies are methods of transferring funds electronically with relatively little paperwork at the front-office level, there has been a switch from paper payments to electronic payments by the Indian population. As shown next, consumers have switched some of their purchases from checks and cash to credit cards, which are mostly cleared electronically (except for the monthly paper bill and check payment). and to debit cards, which are almost entirely processed electronically.

Information exchanges

Information exchanges, as we use the term here, are intermediaries through which banks and other creditors share data relevant to the creditworthiness of loan applicants. These exchanges collect data from financial institutions, trade creditors, public records, and other sources, aggregate and summarize the data, and then provide credit reports or credit scores to lending institutions. The exchanges may be private third-party credit bureaus, associations organized by banks, or public credit registers organized by central banks this all information exchanges easily happen due to only technological changes.

4.2 Technological progress and productivity growth

We next examine the evidence linking technological advantages of progress to productivity growth. We include evidence on the aggregate economy as well as on the banking industry to provide background information and contrast the research methods and results.
Technological progress and government indexes of aggregate and banking productivity growth

It is often argued that IT advances played a substantial role in the recent speedup, but the extent of this contribution is difficult to determine in part because many other events occurred over the same time period. Some have examined differences across industries and found that the highest productivity gains have generally occurred in industries that tend to use IT intensively and those that manufacture IT equipment.

4.3 Technological progress and the structure of the banking industry

Technological progress may also affect industry structure, facilitating consolidation by making it more efficient or less inefficient at the margin for banks to be larger, more geographically dispersed, and/or to engage in M&A activity. These arguments do not imply that it is efficient to have a highly consolidated industry – just which at the margin, there may be more economies or fewer diseconomies to consolidation due to technological advances. Of course, it is also theoretically possible that technological changes may deter consolidation, but in the interest of brevity, we focus only on the more likely case in which consolidation if facilitated. We also focus only on commercial banking, and do not discuss potential economies created to form universal banks that combine banking with other services.

Technological progress and banking organization size

Technological progress may facilitate increases in bank size in at least four different ways. First, it may create new services that are subject to more scale economies or fewer diseconomies than traditional services. For example, IT-driven innovations for delivering depositor services, such as call centers, ATMs, and Internet banking, may exhibit greater economies or less diseconomies of scale than traditional branching networks. Similarly, some wholesale products that are financial technology-driven, such as securitization, derivatives, and other off-balance activities may be more efficiently provided at the margin by large banks, consistent with the dominance of large banks in these products.

Technological progress and the geographic expansion of banking organizations

Technological progress may also facilitate the geographic expansion of banking organizations beyond 25 the effects of the increases in bank scale associated with the expansion. Some new services created by technological progress may be delivered with fewer distance-related diseconomies than traditional services. For example, customers do not need to be geographically proximate to receive services over the internet or to purchase financial derivatives, and the bank’s cost of providing these services does not vary much with distance, in contrast to traditional cash management and relationship-based services.

Technological progress and the consolidation process

Technological progress may also facilitate the consolidation process itself by helping banks engaged in M&A as improve X-efficiency – i.e., move them closer to the best-practice frontier – or reduce the X-efficiency losses associated with an M&A. First, new banking products created by technological progress may create opportunities for efficiency improvements through the faster spread of new products through consolidation. For example; a bank that operates a transactional Internet website may bring this technology to a bank it acquires and raise the X-efficiency of the institution.

5. Conclusions

Research on the banking industry provides a wealth of information about technological progress. Banks intensively use modern technologies and the detailed data on this industry allow for investigations of the effects of advances in both IT and financial technologies and in both “front-office” and “back-office” technologies. Banking industry data give opportunities to investigate examples in which individual technological changes can be observed and some of their effects can be measured. The detailed data also allows researchers to link technological progress to productivity and other indicators of performance using
multiproduct cost and profit functions and other methods. These methods help account for improvements in service quality and variety and address other difficulties inherent in the use of labor productivity indexes. The banking data also allow for analysis of the effects of technological progress on banking industry structure – or the extent to which technological progress facilitates consolidation – using statistics on bank scale, distances and mergers and acquisitions.

References


