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Research Policy 34 (2005) 461–480

research policy

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The dynamics of technological change in UK retail banking services: An evolutionary perspective

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Received 18 July 2003; received in revised form 17 June 2004; accepted 1 February 2005
Available online 19 March 2005

Abstract

The purpose of this paper is to elaborate an evolutionary perspective on the process of structural change that has characterized the banking industry in the United Kingdom (UK). For this purpose, the evolution of retail financial services is contrasted against the backdrop of the implementation and development of information and communication technologies (ICTs). The paper delves into the sources and the effects of technological change in banking over a long-term perspective (1840s–1990s) to point out the significance of the opportunities and the constraints that have shaped the growth and development of this industry. This is interpreted as a three-stage evolutionary process driven by intertemporal coordination across several complementary domains, including activities of production, business organization, consumption and the underlying regulatory setting. It is concluded that the evolution of UK retail banking displays the characteristics of a distributed process of innovation in which developers of technologies, service suppliers and customers contribute to the process of structural change of the industry.

Keywords: Information technology; Retail banking; History of technology; Competition; Innovation systems

1. Introduction

The pressure due to increasing domestic and foreign competition that emerged after the 1960s stimulated a radical transformation in the British banking system. The progressive lowering of technological and institutional barriers that for decades sheltered the cartel formed by depository institutions from competition induced a revision of their strategic plans (Channon, 1986; Llewellyn, 1985). Banks implemented and developed information and communication technologies (ICTs) to enhance their processing capacity, expand the range of services and be able to capture a larger share of customers. This represented a turning point for the organization of retail banking as the technology in place evolved from being a predominantly back-office device to be used directly by customers (Bàtiz-Lazo and Wood, 2000; Consoli, 2005). Contrary to expectations, however, the falling costs associated with these

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doi:10.1016/j.respol.2005.02.001

technological advances combined with a changing regulatory framework produced the erosion of incumbent banks' dominant position to the advantage of new entrants (Llewellyn, 1985, 1999; Ingham and Thompson, 1993). The evidence presented later in the paper indicates that this growing variety in the ecology of agents is mirrored by an increasing specialization in both the supply and the demand of retail banking services.

It is argued that this cannot be ascribed simply to the adoption of new communication technologies but that it involves an evolutionary process driven by the growth of technological knowledge underpinning the division of labour, the development of consumption capabilities and the implementation of a new regulatory framework (Antonelli, 2001; Langlois and Cosgel, 1998; Loasby, 2000; Metcalfe, 2002). The building blocks of this study are the historical overview presented in the first part of the paper and the conceptual analysis that follows in the second part.

The paper is organized as follows. The next Section introduces the UK retail banking industry by looking at the intertwined changes in the competitive and regulatory dimensions observed in the last few decades. Section 3 frames the adoption and the development of banking technologies in a specific socio-historical context. The 'appreciative theorising' approach (see e.g. Malerba et al., 1999; Nelson, 1994, 1998) is the point of reference for the rich storyline elaborated in this section. This will draw upon a broad range of illustrative evidence, including historical and official statistical sources, to emphasise the heterogeneous nature of the sources and the effects of the emergent technological paradigms, and in particular the micro-paradigms, observed in retail banking. Among others, we focus on the emergence of techniques, working practices, modes of services provision, dominant governance mechanisms and how they all correlate to the changing industry structure. Section 4 sets out an interpretative framework of this evidence in terms of a three-stage evolutionary process characterized by the emergence of intertemporal coordination across several complementary domains, including activities of production, business organization, consumption and the underlying institutional setting. Finally, in Section 5 we conclude that the evolution of retail banking displays the characters of a distributed process of innovation in which developers of technologies, service suppliers and customers contribute to the process of structural change of the industry.

2. Retail banking in the UK: a brave new world

Long before the appearance of sophisticated machines typical of modern banking, Adam Smith captured perfectly the two facets of this activity when he summarized it as a business that is largely run on a private basis but whose effects inevitably concern the public interest.[1] Indeed the contrast between banking as free-enterprise driven by competition versus banking as the authority instituted to safeguard the monetary and financial system has become progressively more pervasive over time. Such a dualism points towards two specific types of constraints to competition. On the one hand barriers to entry due to asymmetric information and elevated sunk costs have been "implicit" constraints to the contestability of the banking industry. On the other hand, promoting the stability of the financial system as a matter of public interest has elicited the adoption of "explicit" constraints such as restrictive forms of regulation. The combination of these two types of constraints has fostered a setting in which banks for many years could operate sheltered from competition in the UK as well as in several other countries. We will discuss the sources and the effects of these forces in the remainder.

2.1. The changing competitive context

Commercial banks are at the core of the circulation of money in any capitalist economy. Their retail activity involves the management of large volumes of low-value transaction services such as accepting deposits, transferring funds, issuing checks and drafts, providing safe-deposit facilities, lending money and acting as trustees. Put succinctly, retail banking is at the core of the complex nexus of funds' transfer. The supply of retail services involves the organization of information-intensive activities to manage the transfer of purchasing value across time and space (Fincham et al., 1994; Buckle and Thompson, 1998). While in the typical Modigliani-Miller setting of perfect markets

[1] See the fifth book of the *Wealth of Nations* and Checkland (1976).