Bernardo Batiz-Lazo, J. Carles Maixe-Altes, Paul Thomes, ***Technological Innovation in Retail Finance: International Historical Perspectives*, Nueva York: Routledge, 2011, 319 pp.**

This book analyses the processes of mechanization and computerization that took place in the retail banking industry throughout the twentieth century and performs an international comparison among countries, market structures and types of financial intermediaries. The description of the objectives presented in the introductory chapter constitutes an insightful reminder of a topic that deserves long-overdue attention.

The book deals with a forgotten side of the so-called general purpose information and communication technologies (ICTs) and their evolution, that which applies to the retail banking industry *as a whole* in different market environments. Moreover, an evolutionary flavour prevails through the book that contrasts with the standard neoclassical approach to the effect of general purpose technologies on, generally, the commercial U.S. banking industry. The wider scope of the current book encompasses several countries and different market structures, types of technology, socio-cultural contexts and types of retail financial organizations.

As the editors emphasize in the introductory chapter, despite the importance that ICT applications have had for the development and introduction of new products and services in retail finance, as well as in shaping competitive and organizational changes in the industry, they have remained scarcely studied within the context suggested in this book. In the same way, a detailed analysis of the role played by automation and information processes in the evolution of financial intermediaries *and the reciprocal role of financial intermediaries in shaping the development of general-purpose and industry-specific applications* have been largely neglected. This general equilibrium, a term that should not be monopolized by neoclassical literature, of an evolutionary approach with supply and demand evolving and influencing each other over a substantial period of time, is the subject here of an initial fundamental description and analysis.

Through different chapters organized in thematic sections the book illustrates how financial intermediaries were active agents in the design, use and diffusion of new technology, and in providing a long-term perspective of the process draws attention to the business, economic and social dimensions of technological change.

The second section of the book concentrates on the technological evolution of commercial banks, with chapters dedicated to the early automation of French banks, Britain's [Barclays] first computer centre, the organizational changes in Swedish banks that followed from the introduction of ICTs, and the development of the Mexican automated payment system. The variety of topics and approaches introduced in these chapters gives an intuitive idea of the broad scope applied in this work, not only in geographic terms, but also regarding the theoretical lens used to perform the respective analysis that ranges from economic history and history of technology to organizational theory and economic geography.

This variety of approaches and perspectives continues in the third section, which expands the scope of the retail financial market to state, mutual and saving banks, describing the possible existence of a German path dependence phenomenon similar to the British one, presenting a comparison between the British [scale] and Spanish [scope] mechanization processes of saving banks, and analysing the Dutch co-operative automation experience of Rabobank, together with a [political science] chapter dedicated to the creation of the British Giro payment system. Once again, the variety of topics and approaches focused on the technological development of the retail financial market provides the reader with a clear idea of the complexity of an evolutionary process that has somehow been taken for granted until quite recently.

The fourth section deals with the socio-historical aspects of the digitalization process, starting with the digitalization of the London Stock Exchange, and following with the development of consumer credit risk calculations and that of the Visa payment system, in the latter introducing a novel analysis of a subject that many of us ignore despite its widespread use.

Finally, the last section summarizes the main contributions presented in the book and opens the way for future developments. Somehow this last section seems the least ambitious, despite the broad scope of the book and its varied and novel analyses. As a general note, having read the book, perhaps an additional chapter exploring the connections between the main topics described in the book and the current state of the financial world would emphasize its relevance today. At least, this could constitute an appropriate ending to a section titled "Wrapping up and Grand Conclusion".

Business historians have provided us with a compendium of studies analysing the international information-based structure that has continuously determined the evolution of, among others, the commercial banking industry. After reading the book a very clear and concise idea/objective comes to mind: that the book could serve as a cornerstone for a revived analysis of the *foundations* of the financial intermediation industry. In order to highlight the fact that, from its very beginnings, the development of this industry has been a global phenomenon, the editors have diversified their description to encompass several European and North American countries. The inclusion of different market economies through a considerable period of time allows for the construction of a global map with countries facing different development constraints at different points in time. Thus, an extension to current transition economies, emerging markets, fast developers and other players is, or at least should be, immediate.

Moreover, the literature on international business has exhibited a substantial bias towards multinational corporations, a somehow intuitive direction, while leaving aside financial intermediaries. In other words, banks seem to have fallen outside the domain established by Dunning when studying the behaviour of commercial institutions generating a network of contacts among countries, constituting an increasingly globalized market. Banking is an industry in which there is a high proportion of intra-industry trade, which allows for innovation, product and service factor differentiation and economies of scale and scope. Thus, the ownership, location, internalisation paradigm developed and subsequently amended by Dunning (2001) should be immediately applicable to banks, where, as can be elicited from the book, the primary ownership advantages that financial intermediaries possess include proprietary information, technology and human capital, all of which allow banks to produce complex knowledge- or information-based products.

Despite these facts, financial intermediaries have remained marginally considered by this highly proficient branch of business literature. It seems appropriate that the wake-up call has come from a group of business historians reminding us that financial institutions started performing intercontinental operations quite a while ago and that the use of general-purpose ICTs was always their main focus of competitive advantage. The ability to create financial information endows banks with an important strategic advantage that increases as technological innovations allow for an ever-changing range of fluctuations taking place at an increasingly fast rate. This fact is to some extent assimilated in the globalized world of today, with financial intermediaries including various types of banks dealing in enormous amounts of information among countries and trading through complex algorithms. In this regard, recent developments in the current globalized financial market, such as the subprime lending crisis, should have constituted an immediate incentive to address the topic covered in this book.

Finally, while commercial banks have made clear and intense use of ICTs, it is investment and universal banks currently making more extensive use of financial engineering tools to generate complex information-based instruments, such as high frequency financial algorithms. The final chapter of the book lights the way in this direction, with a clear emphasis on the latest applicability of ICTs to the development of modern financial institutions, among which classic commercial banks play a smaller role, or have mutated into universal banking structures.

We conclude with a small suggestion, something which may have aided the presentation of the results and served as a road map for the reader. An introductory technological map or summary of the twentieth century in terms of ICTs could have helped give the reader a general idea of the evolution of the technological paradigm that was being shaped and applied by retail financial intermediaries.

REFERENCES

J. H. Dunning, "The eclectic (OLI) paradigm of international production: past, present and future", *International Journal of the Economics of Business*, 8, 2 (2001), 173-190.

Debora Di Caprio
York University

Francisco Javier Santos Arteaga
Universidad Complutense de Madrid