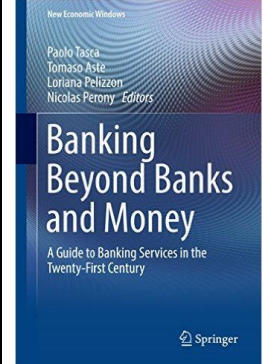


The Central Bank of Barbados Book Review Series seek to highlight publications which offer useful insights and analysis on topics related to finance, economic development, and other issues relevant to small island developing economies. The views expressed are those of the author(s) and do not necessarily represent those of the Central Bank of Barbados.

	<u>BANKING BEYOND BANKS AND MONEY: A GUIDE TO BANKING SERVICES IN THE TWENTY-FIRST CENTURY</u>
	Editors: Paolo Tasca, Tomaso Aste, Lorian Pelizzon, Nicolas Perony
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	<i>Book Review contributed by Quinn Weekes</i>

The world is at the brink of a fourth industrial revolution - the financial technology (FinTech) revolution— as new technologies change the way we live, work, and communicate with one another. These technologies have the potential to dramatically alter the fundamentals of our economic systems. This book, *Banking Beyond Banks and Money: A Guide to Banking Services in the Twenty-First Century*, provides a detailed and useful synopsis of the past, current and expected development of FinTech. It emphasises the possible changes in the market dynamics of the financial industry at both a structural level and social level giving a unique view of the positives and negatives from industry experts.

The book is presented as a collection of essays discussing the new banking and money transfer models, and also addressing challenges and threats faced with said models. Among the topics covered are peer-to-peer lending, crowdfunding and bank vulnerabilities, using mobile money and blockchain technology for remittances and the boundaries of a self-organised economy. In essence, it provides a new perspective on economic models which move the field from describing monetary flows to understanding complex social processes that underlie the dynamics of the economy.

The book begins by describing the emergence of peer-to-peer (P2P) platforms and various alternatives to the current centralized approach that dominates the finance industry. In the Chapter “*Classification of Crowdfunding and P2P Lending in the Financial System*” Pelizzon, Lorian (et al.) (2016) give an overview of the first P2P platforms that enabled new market structures to emerge, such as Crowdfunding. They describe crowdfunding as a technology-enabled form of social lending, with the possibility of revolutionizing traditional financing. Crowdfunding’s disruptive powers were argued to be mainly driven by its “big data” capabilities

and can positively impact the finance industry as online platforms eliminate economic frictions related to spatial distance (Agrawal et al. 2011).

In *“Crowdfunding and Bank Stress”* Blaseng and Koetter (2016) argue that in addition to crowdfunding, the FinTech industry continues to provide cost effective platforms as an alternative to traditional banking, and this should lead to an increasing preference for P2P over stressed banks over time. They examined the impact of an exogenous credit supply shock on the likelihood of using equity crowdfunding by observing which ventures cooperated with banks that had to be bailed out by the German government. The results showed that ventures with a rescued bank increased the probability that a venture uses crowdfunding. Their results imply that ventures are more likely to use crowdfunding when their bank is affected by a credit crunch and thus crowdfunding is of particular importance for entrepreneurial financing in stressful times for banks.

In *“How Peer to Peer (P2P) Lending and Crowdfunding drive the FinTech Revolution in the UK”* Chisti explains the role of P2P lending and P2P equity markets which in the UK is experiencing some of the highest growth rates in the world (Cambridge Judge Business School Report, 2015). Not only has P2P technology taken off in the UK but also in Asia, and in particular, China. The P2P sector in China has been growing exponentially, fueled by the credit gap for small and medium sized enterprises (SMEs). Barberis and Arner in the Chapter *“From Shadow Banking to P2P Lending”* emphasise the regulatory challenges of P2P lending in China, the country with the largest proliferation of P2P lending platforms in the world. The authors argue that, the Chinese government has a prime window of opportunity to regulate non-bank finance in China without impeding economic growth or risking a financial meltdown. This would allow China to effectively transform its last-mover advantage in the field of financial reform into a first-mover advantage. The authors conclude with their view of data-supported regulation known as RegTech (Ulieru 2016). RegTech revolves around the use of predictive coding, pattern analysis and big data techniques to strengthen current regulatory systems as well as more provide more cost effective regulatory solutions.

The book continues by describing the new world brought about by the principles of decentralisation and sharing enabled by P2P technology and by extension blockchain technology. The Blockchain ledger is described at its core to be a platform that allows people to come to agreement on virtually anything without intermediaries. Its universality enables it to be an asset registry, inventory, tracking, and exchange infrastructure, a universal registry, listing, and management system for any of the world's assets. Thus it is an infrastructure which provides society's public records repository, a representative and participatory legal and governance system.

Courtois in *“Features or Bugs: The Seven Sins of Current Bitcoin”*, argues that numerous features and properties which are presented as positives are in fact serious problems programmed in the DNA (source code) of cryptocurrencies including the most popular on the blockchain, Bitcoin. The “seven sins” discussed were The Gold Rush Syndrome, Weak Integrity Protection, Poor Speed and Instability, Bitcoin Monetary Policy, Misunderstanding the Threats, Dangers of Open Source and Bitcoin Elliptic Curve. Courtosis (2015) further argues that the current “monumental investment” in bitcoin does not improve bitcoin's security or robustness and as such it could still be broken or abused by powerful entities. He argues that its primarily due to the fact that mining is highly centralised in “miner pools” and that it is sufficient to hack pool

manager servers in order to command a substantial fraction of the bitcoin network (Courtosis 2014; Rosenfeld 2013).

In the Chapter *“Decentralized Banking: A Return to Technocracy In the Digital Age”*, Hayes however, makes the point that digital currencies could more securely and cheaply connect the world. The invention of the blockchain is opening up the possibility of a different kind of monetary order run by inviolate mathematics, rather than a person or committee. In fact he argues that a viable digital currency could function as “central bank” if: (1) has a potentially unlimited money supply, (2) it follows rules based on the rate of new money formation; (3) has a mechanism, to obtain feedback from the economy; (4) operates in a 100% reserve banking environment; (5) operates as a network where an appoint group of participants in the network are given the express authority to provide the validation of blocks of transactions, permissioned blockchain, with appropriate speed and capacity for all transactions in an economy. On the topic of monetary system benefits, the chapter *“Trustless Computing- The What Not The How”* details how FinTech provides more functionality than fiat currency, at a lower cost, with safety and security without the need for physical vaults or guards and guaranteeing stability through attractive finite issue limits, and by being both organizationally and jurisdictionally neutral.

The chapters *“Reinventing Money and Lending for the Digital Age”* on cryptocurrencies and *“The Opportunity for Non-Banks in Financial Inclusion and Remittance”* on mobile money provide insight on how FinTech can benefit underdeveloped and developing countries. The authors suggest that cryptocurrencies can aid in (1) providing excluded individuals from financial institutions with a decentralised global bank account simply by utilising an open source wallet, and (2) the facilitation of remittance at lower costs internationally.

The chapter *“Are Transaction Costs Drivers of Financial Institutions? Contracts Made in Heaven, Hell, and The Cloud in Between”* describes the socio-economic impacts of “smart contracts”. Smart contracts, “Blockchain 2.0” technology, are modules of computer code that run on blockchains and can be programmed to transfer tokens of value, enable access to resources or otherwise automate functions based on conditions. This innovation creates more transparent democracies, and develops services that dramatically reduce barriers for global commerce. Panayi (2016) in the chapter *“Understanding Modern Banking Ledgers through Blockchain Technologies: Future of Transaction Processing and Smart Contracts on the Internet of Money”* deepens this understanding by illustrating how smart contracts can ensure financial stability. The author hypothesized that as smart contracts improve, they can truly reduce the need for government, central authorities, or the influence from policymakers and corporate lobbying, thus opening the perspective of a fairer society with fair exchanges (Ulieru, 2014).

The book concludes with *“Blockchains and the Boundaries of Self-Organized Economies: Predictions for the Future of Banking”*. This chapter paints a picture of blockchain technology and its impact on the future of banking. The author envisions two scenarios of the economics of blockchain. The first is to view the economics of the adoption and diffusion of blockchain as a powerful new information and communications technology (ICT). Such a technology-based approach will be adopted differentially by some banks, leading to intense technological competition in the banking sector. The second vision focuses more on the governance. This is based on the economic reasoning of what type of technology is blockchain. The author describes it as fundamentally a technology of decentralisation and is therefore a new institutional technology coordinating persons, which competes with firms and markets. He predicts that in

this situation, banks will face fundamental shifts in their organizational boundaries, with many transactions currently governed through hierarchy, relational contracting or market transactions shifting to blockchain.

Overall, this book takes the reader on a journey through the developments of the FinTech industry while giving them a glimpse of the fourth industrial revolution through the keen eyes of industry experts and academia. It identifies benefits such as reducing remittance cost along with possible implementation procedures, an important aspect in developing countries. It gives policy makers and regulators insight on how FinTech can be utilised through RegTech and how its “neutrality” can benefit different aspect of the economy, including international trade. Contra other books, it discusses in-depth, the flaws associated with cryptocurrencies and the blockchain and possible solutions, thus providing the reader with an unbiased reading experience. It is articulated in such a manner that it can be placed in a policy maker’s toolkit while still being readable by the “average joe” for general knowledge, thus making it one of the more versatile books available.