

EMERALDHANDBOOKS

# THE EMERALD HANDBOOK OF FINTECH

RESHAPING FINANCE

EDITED BY

H. KENT **BAKER**

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# **The Emerald Handbook of Fintech**

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# The Emerald Handbook of Fintech: Reshaping Finance

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INVESTOR IN PEOPLE

*We dedicate the book to Linda and Rory Baker, Judy, Janis, Aaron, Andrea, Kyle,  
and Grant Filbeck, and Melissa, Parker, and Patricia Black.*

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## Acknowledgments

In 1968, Paul McCartney wrote ‘The Long and Winding Road’, which appeared in the Beatles’ album *Let It Be*, in 1970. The lyrics of this reflective song talk about the journey of life and the memories created along the way. Thus, the long and winding road is a metaphor for a journey and the challenges encountered. Similarly, publishing this book has been a long and winding road with its twists and turns. This journey would not have been completed without the contributions of many people, each playing important but different roles. We want to recognize a few of these participants in this journey.

We relied on the chapter authors who took time from their busy schedules to share their knowledge and expertise on specific fintech topics. Being a chapter author requires much time, effort, and dedication. Without them, *The Emerald Handbook of Fintech: Reshaping Finance* would not have been possible. We are indebted to each chapter author. We are also grateful for all the highly talented professionals at Emerald Publishing who were involved with this book project. We especially thank Kirsty Woods (Books Commissioning Editor, Education), Lydia Cutmore (Content Development Editor), and Kousalya Thangarasu (Book Project Editor). Our respective institutions also provided support: Kogod School of Business at American University, the Black School of Business at Penn State Behrend, and the Isenberg School of Business at the University of Massachusetts, Amherst. Finally, our families also offered encouragement during the process.

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Section I

## **Introducing Fintech**

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## Chapter 1

# Fintech: An Overview

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### Abstract

Financial technology (fintech) refers to using new technology to improve and automate the delivery and use of financial services. This chapter provides a brief introduction to fintech. It also includes the book's purpose, distinguishing features, intended audience, and structure. A synopsis of Chapters 2 through 23 is offered. The chapter concludes that fintech is constantly evolving and is reshaping finance. Fintechs offer a new paradigm of growth.

*Keywords:* Financial technology; fintech; regulation; blockchain; cryptocurrencies; digital assets; artificial intelligence; machine learning; insurance; real estate; robo-advisors; online trading; big data; innovation; technology; payments; banking; lending

### Introduction

Financial technology (fintech) is transforming finance. The two words – finance and technology – combined “symbolize the best of both worlds – simple financial management with the help of technology” (Paysera, 2023, p. 1). This catch-all term refers to the technology and innovation intended to simplify, improve, and automate financial transactions for consumers and businesses alike. Although fintech companies have already affected the daily lives of billions of people worldwide, this impact will increase as fintechs introduce an array of new products and services. As such, the financial services industry will see an expansion of revolutionary change in the next decade. According to a report by [Boston Consulting Group and QED Investors \(2023\)](#), fintech is projected to become a \$1.5 trillion industry by 2030.

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As fintech companies have come of age, they have affected many segments of the economy. For example, technological advances have made artificial intelligence (AI) and machine learning (ML) accessible to practitioners without a programming background. New markets in cryptocurrencies and digital assets have made finance more global with lower transaction costs and faster transaction processing times. Robo-advisors and online trading have made financial markets more accessible to investors, even those younger or just making their first investments. Big data and alternative data are increasing the speed at which information is available on investments, allowing investors to predict corporate revenues before publicly traded companies disclose them. Regulation changes have provided new opportunities in crowdfunding and peer-to-peer (P2P) lending.

The future looks bright for fintech as it repositions for innovation. [Simons \(2023\)](#) points out that fintech is shifting from the competitive consumer markets into the enterprise or business-to-business services markets. AI is playing an increasingly important role in product capabilities and design. Fintechs are insulating themselves by partnering with more established financial institutions.

## About This Book

This section discusses the book's purpose, distinguishing features, intended audience, and structure.

### *Purpose*

The *Emerald Handbook on Fintech: Reshaping Finance* aims to provide insights into the rapidly changing world of fintech. It examines fintech's evolution, major segments and stakeholders, and obstacles and opportunities.

### *Distinguishing Features*

The following characteristics help to distinguish this book from other books in this field.

- *The Emerald Handbook on Fintech: Reshaping Finance* offers a detailed examination of fintech from leading scholars and practitioners globally. Rather than purely technical or theoretical topics, it focuses on real-world challenges and opportunities.
- The handbook skillfully blends the contributions of experts into a practical handbook reviewing critical topics and issues about fintech. The contributors' varied backgrounds ensure different perspectives and a rich interplay of ideas. The book also reflects the latest trends and research.
- It has a clear and accessible style suitable for readers, with most chapters requiring little technological background.
- This work presents the results of empirical studies so a wide array of readers with different backgrounds can understand them.

- The end of each chapter contains four to six discussion questions reinforcing key concepts. The handbook provides guideline answers for each question at the end of the handbook. This feature should be helpful to faculty and students using the book in courses.
- The volume defines fintech and related terms and shows them in italics.

### ***Intended Audience***

This handbook should appeal to readers who want to understand fintech and its various applications. Academics may find the handbook helps in finding ideas for further research or topics to share with their students. Innovative companies can review the state of the industry in a way that may allow them to envision their role or niche in this fast-growing, ever-evolving industry. Most importantly, incumbent firms can view the pace of change and plan to keep pace with these innovations to profit from change. Regulators may also find this book useful in learning more about fintechs and assessing the trade-offs of future regulations and their potential impact on economic growth.

Other fintech books often focus on a specific area of the industry, such as cryptocurrencies or AI and ML. In providing a broad overview of the fintech industry, this handbook gives readers a comprehensive view of the technologies and products reshaping the industry, all in one volume. Given the interplay between rapidly evolving regulations, technologies, and products, readers should view fintech's risks and potential opportunities from this holistic view.

### ***Book's Structure***

The remainder of this book contains 22 chapters divided into 8 sections. Highlights of each section and chapter follow.

### ***Section I Introducing Fintech***

Besides the current chapter, this section contains three other chapters. Chapter 2 provides a bibliometric analysis of fintech. Chapter 3 provides specific situations in which a fintech product or service could be used. Chapter 4 deals with regulatory technology (regtech), which applies emerging technology to improve how businesses manage regulatory compliance.

### ***Chapter 2 The Fintech Landscape: A Bibliometric Analysis (Debidutta Pattnaik)***

This chapter uses data from the Scopus database to present a comprehensive bibliometric analysis of fintech research, focusing on publication trends, citation patterns, and thematic clusters within the field. The analysis reveals notable trends, including influential publications, prolific authors, and their affiliations. It identifies and explores publications categorized into 23 distinct themes,

representing key areas of inquiry in fintech, such as technological advancements, financial inclusion, innovation, data analytics, sustainability, and regulatory compliance. The study also identifies research gaps, indicating areas within fintech that have received limited scholarly attention. These findings provide valuable insights for researchers, policymakers, and industry practitioners. Researchers can better understand the fintech landscape, identify research gaps, and guide future inquiries. Policymakers can develop effective regulations and policies based on identified trends and challenges. Industry practitioners can leverage fintech developments to enhance their strategies and operations.

### ***Chapter 3 Use Cases in Fintech (Fan Liu and Angela C. Lyons)***

This chapter examines three common fintech use cases transforming the financial industry. First, the chapter introduces fintech's role in enhancing financial services and promoting financial inclusion, especially through digital platforms. Second, it examines fintech applications that support financial institution management by harnessing the power of AI and ML. Finally, the chapter explores fintech use cases related to the regulatory environment, including regulatory technology (regtech), blockchain technology, and cryptocurrencies. The insights presented in this chapter cater to researchers and practitioners keen on exploring fintech's diverse applications in the ever-evolving financial industry landscape.

### ***Chapter 4 Regtech Frontiers: Innovations, Trends, and Insights Redefining Compliance (Dimitrios Salampasis and Georgios Samakovitis)***

This chapter discusses the contributions and challenges involving regulatory technology (regtech) in financial services. It explores the salient areas where regtech can and should focus, observing existing and forthcoming industry, technology, and legal developments. The chapter outlines regtech use cases to clarify the shaping of that industry sector. It draws on developments in industry and academia, where significant research sets the tone and direction of technological solutions and regulatory drivers. A brief critical account of the benefits and challenges in regtech is offered. The chapter presents potential future directions, focusing on the salient areas of environmental, social, and governance (ESG), cryptocurrency, and decentralized compliance.

## ***Section II Reinventing the Banking and Payments Industry***

This section contains two chapters focused on the evolution of banking and the payments industry. Chapter 5 discusses fintech's impact on the banking industry and financial services. Chapter 6 covers the evolution of alternative payment systems, including mobile payments and digital banking services.

***Chapter 5 Fintech's Impact on the Banking Industry and Financial Services (Efthymios Rizopoulos and Markos T. Zachariadis)***

For over a decade, fintech has challenged traditional business models and processes in the financial services industry. The ongoing disruption has necessitated the digital transformation of financial institutions (FIs) to remain an integral part of the financial system. This paradigm shift is not merely a technological update. Still, it signifies a cultural and operational rebirth, compelling FIs to embrace innovation, adaptability, and a customer-centric approach in the digital era. Independent of the business model, FIs must become digitally ambidextrous, offer tailored and dynamic customer experiences, support financial inclusion, and promote an ESG agenda while leveraging data and remaining compliant. From digitalization to fintegration, the financial services industry's future is deemed to be an exciting and productive one.

***Chapter 6 Mobile Payments and Digital Banking Services (Ardi de Ridder and David A. Burnie)***

This chapter examines mobile payments and digital banking services. The past decade has seen a rapid increase in the use of alternative payment systems, away from cash to electronic payments. The digitalization of payments includes business-to-business (B2B), customer-to-business (C2B), and government-to-business and consumers (G2B/C), whether the payments are by computer, wire transfers, and point of sale (POS) systems. POS systems have become a standard in many retail outlets. Mobile payments use a smart device for contactless pay. Consumers see the increasing prevalence of payment systems when they go to the retail checkout or service counter. Worldwide, mobile payments are approaching 50% of digital. Digitalized payment systems are becoming more secure, decreasing concerns over mistaken payments, fraud, and errors. Consumers' confidence in value and usage decreases with age. Most fraud is due to scams and not hacking. Greater access to improved infrastructure and affordable smart devices will expand the usage of digitalized payment systems worldwide.

***Section III Raising Funds With Fintech: Digital Lending***

The three chapters in this section discuss capital formation, including equity crowdfunding and marketplace lending, as well as risk management. Chapter 7 introduces marketplace lending, formerly known as peer-to-peer lending. Chapter 8 emphasizes the importance of risk management in the digital age, which includes special attention to cybersecurity risks. Chapter 9 discusses how fintech affects capital formation and capital markets regulation in areas including equity crowdfunding and Initial Coin Offerings.

***Chapter 7 Marketplace Lending Platforms for Borrowers and Investors (Manuel Stagars and Ioannis Akkizidis)***

Marketplace lending has substantially changed since the first peer-to-peer lending platforms emerged in 2006. The industry is now an alternative to bank lending,

predicted to total \$70 billion for consumer and business loans worldwide by 2030. Marketplace lending is often deemed less safe than bank loans, mainly due to these portfolios' high degree of hidden information. These include needing more information on borrowers and potential correlations between them, which might lead to higher risk than is apparent at first glance. Deterministic processes cannot capture tail risk appropriately, so platforms and lenders should employ stochastic processes. This chapter introduces a Monte Carlo simulation and ML process to evaluate and monitor portfolios. For marketplace lending to become a viable and sustainable alternative to bank lending platforms, they must better evaluate, monitor, and manage tail risk in marketplace loans and develop tools to monitor and manage financial risk losses.

### ***Chapter 8 Risk Management in Fintech (Ayan Tyagi)***

This chapter examines the world of risk management within fintech. It initiates by emphasizing the crucial role of technology and risk assessment in shaping the fintech landscape. It discusses various risk categories prevalent in fintech operations, elucidating the nuances of technology, operational, compliance, strategic, and reputational risks. A comparative analysis across different fintech subsectors unveils their distinct risk profiles. The narrative extends to proactive risk management frameworks, contrasting prominent models like the COSO ERM, FAIR Risk Quantification, and NIST Cybersecurity Frameworks. Integral defense measures are scrutinized, encompassing data encryption, access controls, vulnerability assessments, and incident response plans. The chapter underscores the significance of building operational resilience through robust technology infrastructure, regular system updates, disaster recovery planning, and business continuity measures. Ultimately, the chapter culminates in a comprehensive summary, offering pragmatic recommendations to fortify technology risk management in fintech.

### ***Chapter 9 Capital Formation and Crowdfunding (Keith Black)***

Each company, large or small, starts with a dream and an idea for a new product or service. Companies can succeed or fail for a wide variety of reasons, including inexperienced managers, failure to build or sell the desired product, launching products into highly competitive environments, and a lack of capital. This chapter reviews the traditional methods of capital formation, including funding by angel investors and venture capital firms. These funding methods are only available to relatively large firms, leaving millions of small firms without reliable debt and equity funding sources to scale their business. The growth of the internet, blockchain technology, and fintech firms has introduced innovative funding methods, such as crowdfunding and Initial Coin Offerings (ICOs). While these structures have been successful in raising capital for smaller firms, changes in the regulatory environment, such as the JOBS Act, are needed for these new forms of capital formation to reach their full potential.