



Financial Innovation as a Determinant of Economic Growth

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Abstract. The rapid advancement of digital technology has transformed the financial sector, making digital finance a pivotal driver of global economic growth. This paper explores the role of digital finance in fostering economic development, emphasizing its potential to enhance financial inclusion, reduce transaction costs, and stimulate innovation. Also, the study highlights key mechanisms through which digital finance contributes to economic growth, including its ability to integrate underserved populations into formal financial systems, support small and medium enterprises (SMEs), and facilitate cross-border trade through technologies like blockchain and mobile payments. Additionally, the paper addresses challenges such as regulatory gaps, cybersecurity risks, and environmental concerns associated with energy-intensive technologies. Utilizing both current academic literature and case-based evidence, this paper provides a comprehensive analysis of digital finance's benefits and limitations, offering insights for policymakers and stakeholders to harness its potential for inclusive and sustainable economic progress. The findings underscore the need for balanced development, robust regulatory frameworks, and technological innovation to maximize the positive impact of digital finance on global economies.

Keywords: Digital Finance, Economic Growth, Mobile Payment

1 Introduction

In a recent statement, the OECD underscored the underutilized capabilities of the digital economy and the transformative impact of digitalization on economic and social development [1]. Playing a leading role in economic growth, digital financial provides essential support such as payments and financing. Thus, the significance of digital finance to economic growth is self-evident. Digital finance encompasses the overall digitalization process of the financial industry. This includes diverse electronic financial instruments and platforms like credit cards, chip-enabled cards, digital transaction networks, internet-based banking, remote financial services, and automated teller machines [2]. According to Fig.1, by 2023, global users of mobile payment services surpassed 2 billion, with forecasts suggesting the figure will climb to 2.5 billion by 2025[3]. According to Fig.2, in China, the scale of mobile payment market reached approximately 8.8

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trillion US dollars in 2022, and in 2023, the number of users of mobile payment services in the United States reached 110 million, and it is projected to increase to 125 million by 2025. All these indicate digital finance has become an indispensable factor in global economic growth, and the Fig.3 and Fig.4 are the data on the development of digital finance from 2019 to 2023, highlighting rising investment trends in financial technology, which fuels innovation and expansion in digital finance and improved access to financial services in developing regions, underscoring digital finance's role in inclusion.

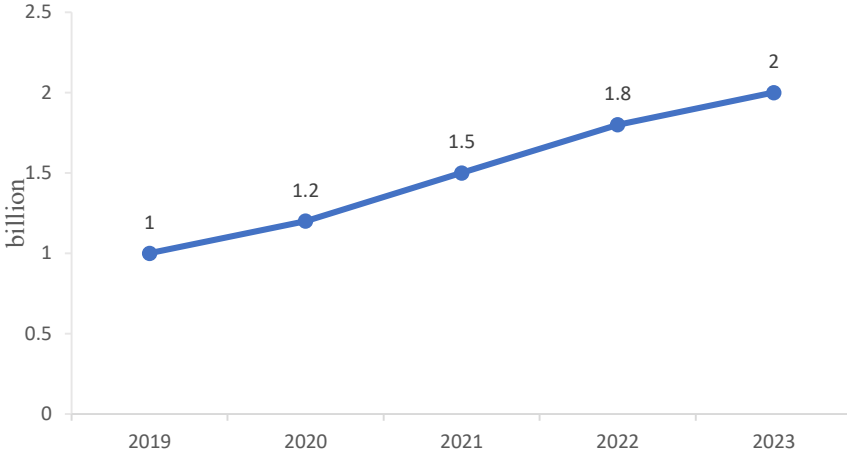


Fig.1. Global Digital Payment Volume (Data Source: McKinsey & Company, 2023)

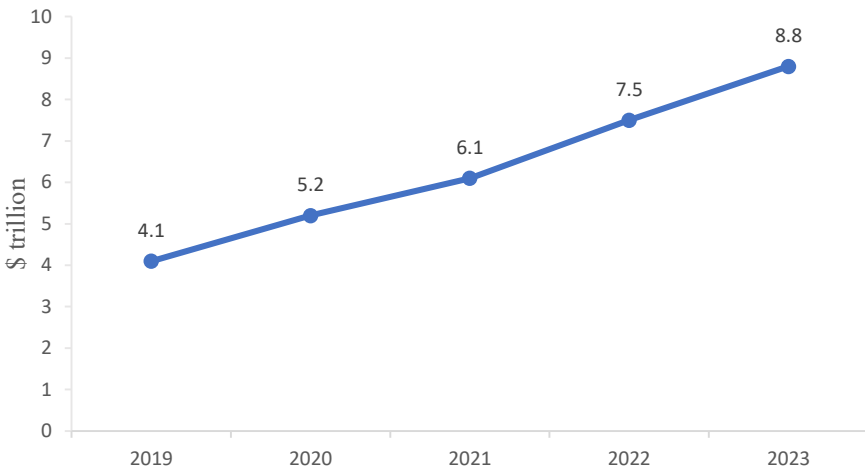


Fig.2. Global Mobile Payment Users (Data Source: Statista, 2023)

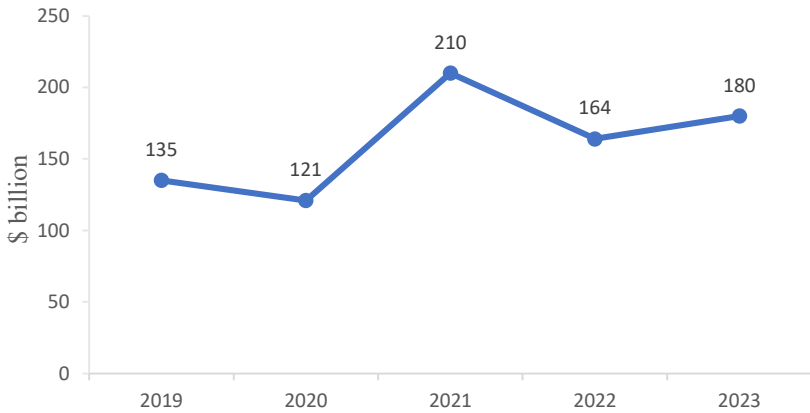


Fig.3. Global FinTech Investment (Data Source: KPMG, 2023)

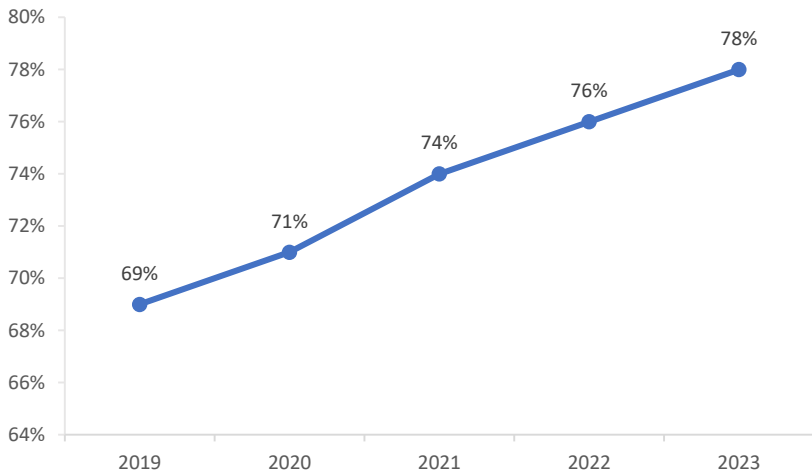


Fig.4. Global Financial Inclusion Index (Data Source: World Bank, 2023)

It is widely acknowledged that promoting economic expansion remains a key concern for global policymakers, with advances in the financial sector playing a crucial role in driving that progress. As an emerging form of finance, the mechanisms and effects of digital finance on economic growth warrant in-depth exploration. Because of the support of government policies and continual occurrence and innovation of technologies, digital finance has developed quickly in China and digital finance is able to boost the quality of China's economic growth in the long term; when digital finance development enhances by per unit, the quality of economic growth will enhance by 0.0013%, and the influence is more significant in less developed regions [4]. This essay will focus on the intersection of technology and finance, exploring the role of digital finance in economic growth, encompassing innovations such as mobile payments, peer-to-peer lending, and blockchain technology.

2 Digital Finance and Economics Growth

2.1 The Definition of Digital Finance

According to Durai and Stella, digital finance can be understood as the provision of financial services via digital platforms such as mobile devices, computers, the internet, or card-based systems connected to secure payment networks [5]. This form of finance offers a more accessible, cost-effective, and reliable way for individuals to engage with banking services. Moreover, the term "digital finance" reflects the transformative impact of emerging technologies on the financial industry. It includes a wide spectrum of innovations-ranging from digital products and applications to new business models and operational processes-that have reshaped traditional approaches to delivering financial services.

2.2 The Development Process of Digital Finance

The evolution of digital finance has accelerated in recent decades, shaped by rapid technological progress and evolving user expectations. The late 20th century saw the introduction of the internet, which brought about e-commerce and later e-payments, laying the groundwork for digital finance [6]. After entering the 21st century to 2010, the development of internet technology led to the rise of online financial platforms such as PayPal and P2P, transforming traditional financial services and improving efficiency, and technologies such as AI and big data began to play significant roles in risk management, customer profiling, and investment decision-making [7]. In the stage from 2010 to 2020, digital finance emerged because of the integration of big data, AI, blockchain, and cloud computing with traditional finance. During this period, innovative financial products like Robo-Advisors and transaction models such as BNPL emerged, enhancing how financial resources are distributed, for instance, by relieving funding limitations and improving how credit is assigned [8]. Since 2020, the financial technology (FinTech) industry has experienced swift growth, which has been fueled by developments in the collaborative economy, evolving regulatory frameworks, and advancements in digital technologies [9]. Fintech offerings cover areas such as financing, digital payment platforms, online service aggregators, electronic trading, digital insurance, and virtual currencies. The global shift toward digitalization was significantly hastened by the COVID-19 outbreak, turning digital finance into an essential component and unlocking new possibilities. However, it also posed new challenges and risks, necessitating continuous updates to regulations, and the concept of "green digital finance" emerged, integrating technology with green finance initiatives to promote sustainable development. Meanwhile, in the future, digital finance will still develop rapidly, promoting economic development while promoting technological progress.

2.3 The Role of Digital Finance

Digital finance is a rapidly evolving field with a wide range of applications across various sectors. And this paragraph will discuss four application fields of digital finance.

Firstly, digital finance can enhance financial services accessibility and financial inclusion. These services include lending, payments, insurance, and personal finance management, accessible via digital platforms, examples include digital lending platforms, crowdfunding, peer-to-peer (P2P) lending, digital payments, mobile wallets, and app-based lending [10]. And the popularity of Alipay is a good instance of digital finance in terms of financial inclusion of the people in need. Moreover, blockchain and Fintech, according to Zhou, Digital finance heavily relies on cutting-edge technologies such as blockchain, fintech, and digital currencies and these technologies are crucial for developing new financial products and services, enhancing security, and reducing transaction costs[11].

Secondly, Digital finance enables sustainable growth through tech. Digital finance fosters economic growth by incorporating advanced technologies such as AI, IoT, large-scale data analytics, and cloud infrastructure. These technologies facilitate the development of smart cities, digital healthcare, and personalized education, contributing to a sustainable economy [12].

Lastly, digital finance has the potential to increase enterprise value. Digital finance can reduce costs and improve efficiency, innovation and competitiveness, studies by Gomber et al., the integration of digital finance in enterprises helps in reducing financing costs and improving operational efficiency, this is particularly beneficial for small-scale firms and those in less marketized regions [13]. And digital finance drives innovation within enterprises, enabling them to stay competitive in the global market by adopting new business models and financial strategies. In summary, digital finance is transforming various sectors by enhancing financial inclusion, supporting economic development, integrating advanced technologies, and improving enterprise value.

2.4 The Ways Digital Finance Promotes Economic Growth

Digital finance is not just a technological advancement, it is a fundamental enabler of economic transformation. By increasing financial inclusion, reducing transaction costs, improving capital allocation, and fostering business innovation, digital finance creates a more efficient, transparent, and accessible financial ecosystem. Through these ways, digital finance has promoted rapid economic growth globally. Both developed and developing economies are rapidly adopting digital finance solutions to leverage these benefits. And this paragraph will introduce in detail how digital finance promotes economic development.

Enhancing Financial Inclusion and Expanding Economic Activity. In numerous emerging economies, a large percentage of individuals are unable to utilize banking services, often because they lack credit histories or the presence of physical bank branches. However, compared to traditional banking, digital financial services offer greater convenience and cost-effectiveness, allowing low-income and underprivileged individuals in developing nations to participate in formal financial systems-facilitating

savings, credit access, and financial returns [14] For instance, the M-PESA in Kenya, according to Omwansa, in March 2007, after M-PESA launched eight months, M-PESA has announced it served 900,000 users nationwide with a network of 1,200 agents, during that period, a total of 4 billion Kenyan shillings (approximately \$57 million) were transferred through the platform[15]. Therefore, digital finance can enable more people to participate in economic activities, promote the development of small and micro enterprises, and promote the growth of GDP.

Reducing Transaction Costs and Improving Efficiency. The financial services sector is projected to reach a market value of \$28.5 trillion by 2024 [16]. Nevertheless, factors such as high costs for stakeholders, frequent disruptions, an overload of paperwork, and concerns over privacy appear to be the primary reasons for the substantial annual losses in the financial services sector. However, blockchain technology could offer solutions to the issues within the financial system. According to Nguyen, studies on the effects of blockchain indicate that, over time, it has the potential to reduce costs and revolutionize the financial industry [17]. According to Vukovic et al., blockchain is basically a distributed, shareable ledger used to track all transactions in a peer-to-peer (P2P) network and the proper implementation of blockchain could save banks billions of dollars in various scenarios. Meanwhile, in developing countries, blockchain can regulate the housing market and eliminate the “shadow economy” [18]. To put it simply, traditional financial transactions often require intermediaries like banks and clearing houses, leading to higher costs and slower processing times while blockchain enables direct transactions, reducing costs and improving transparency. Thus, the advantages of blockchain can boost economic growth significantly.

Supporting business development and promoting consumption. As mentioned above, mobile payment is an important application field of digital finance. By easing liquidity constraints and improving payment convenience, mobile payments have increased rural household consumption by 29.8-52.3% [19]. This is because mobile payments have significantly enhanced financial inclusion and broadened people’s payment channels, making consumption more convenient and easier. Additionally, mobile payment systems have had a significant impact on small and medium-sized businesses (SMBs). According to a study by Li, these payment solutions have revolutionized how SMBs manage their finances and conduct operations, playing a crucial role in driving economic development [20]. By streamlining everyday transactions, mobile payments not only improve financial management efficiency but also offer valuable insights that help businesses make informed strategic decisions. In Somalia's small and medium enterprises, Mohamed found that a 1% rise in mobile money adoption results in an 11.14% boost in business performance. This emphasizes the substantial influence of mobile money on the success of SMEs. Mobile financial services can enhance SMEs performance by improving access to funds, driving business expansion, fostering innovation in product offerings, and reducing operational risks. Mobile payments reduce transaction costs, enhance convenience, and boost consumer spending. They also provide small and medium enterprises with fast settlements, digital credit access, and broader customer reach, improving cash flow and operational efficiency. This drives business growth, strengthens market competitiveness, and contributes to overall economic prosperity.

Facilitating Global Economic Integration and Cross-Border Trade. Traditional international transactions typically suffer from extended processing durations and significant fee structures, while digital finance could simplify the process by reducing cross-border transaction costs and time delays and expanding market access for businesses and consumers. First, according to Qi et al., cross-border e-commerce platforms help reduce various transaction costs, such as information, negotiation, and middlemen costs, by providing direct access to international markets. Second, digital finance can enhance market opportunities [22]. Studies by Meltzer, Digital finance facilitates global reach by enabling businesses to manage global supply chains, communicate with customers, and access IT services in the cloud, thus expanding market access [23]. In conclusion, digital finance plays a crucial role in reducing cross-border transaction costs and time delays while expanding market access for businesses and consumers. By leveraging digital payment systems, and supportive e-commerce platforms, international trade can become more efficient, secure, and inclusive.

Digital finance is a key driver of economic growth by enhancing financial inclusion, reducing costs, and fostering innovation. It enables underserved populations in developing countries to access financial services through mobile platforms, boosting economic participation and GDP growth. Blockchain technology minimizes transaction costs and improves efficiency by eliminating intermediaries, benefiting both developed and developing economies. Mobile payments increase household consumption and support SMEs by streamlining transactions and providing digital credit. Additionally, digital finance simplifies cross-border trade by lowering costs and expanding market access through e-commerce platforms. Overall, it creates a more efficient, transparent, and inclusive financial ecosystem, driving global economic prosperity.

3 Conclusion

Digital finance has emerged as a key driver in the global economy, driving growth through enhanced financial inclusion, reduced transaction costs, and improved efficiency. As discussed, it enables residents of developing countries to access financial services, exemplified by platforms such as M-PESA in Kenya and Alipay in China, thereby fostering economic participation and GDP growth. Technologies such as blockchain and mobile payments further streamline transactions, support SMEs, and facilitate cross-border trade, contributing to a more integrated and dynamic global economy. Empirical evidence from China underscores its long-term positive impact, particularly in less developed regions.

However, digital finance is not without limitations and risks. Regulatory challenges remain a significant concern, as rapid technological advancements often outpace policy frameworks, leading to potential gaps in consumer protection and financial stability. Cybersecurity threats, such as data breaches and fraud, pose risks to users and institutions alike. Additionally, the digital divide may exacerbate inequalities, as marginalized groups with limited access to technology could be left further behind. Environmental concerns related to energy-intensive technologies like blockchain also warrant attention.

Looking ahead, the future of digital finance is promising but requires balanced development. Strengthening regulatory frameworks, investing in cybersecurity, and promoting digital literacy will be crucial to mitigating risks. Innovations in green digital finance and sustainable technologies offer opportunities to align financial growth with environmental goals. As digital finance continues to evolve, its potential to drive inclusive and sustainable economic growth will depend on collaborative efforts among governments, industries, and communities worldwide.

In summary, while digital finance presents challenges, its transformative potential makes it a cornerstone of future economic progress. Addressing its risks proactively will ensure that its benefits are realized equitably and sustainably.

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