

**THE REAL EFFECTS OF FINTECH ON THE GLOBAL FINANCIAL SYSTEM**

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ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p><b>Received</b> 27 January 2023</p> <p><b>Accepted</b> 20 March 2023</p>	<p><b>Purpose:</b> Financial technology (FinTech) entails radical changes for every facet of financial services, and has increasing significance for the global economy. The purpose of this paper is to present a birds' eye view of salient effects of Fintech on the global financial system.</p>
<p><b>Keywords:</b></p> <p>Block Chain; Cryptocurrencies; Digital Economy; Fintech; Financial Bubbles.</p>	<p><b>Design/methodology/approach:</b> A literature review approach is adopted, with analysis revealing that the absence of institutional support for new financial technologies is the most significant reason for the destabilization of the financial industry, and the formation of financial bubbles in various market segments. The current implications and future directions are explored based on theoretical and empirical analyses.</p> <p><b>Findings:</b> This study contributes to the advancement of knowledge by summarising current practices, providing new insights, and monitoring emerging trends in financial technologies, as well as shedding light on a variety of topics of interest to policymakers and academics by proposing future research topics.</p> <p><b>Practical implications:</b> This study emphasises the current status of research in the field of financial technology, which can assist policymakers and institutions in selecting their future actions.</p> <p><b>Originality/value:</b> Very few studies have conducted an exhaustive literature assessment on Fintech and its impacts on the global financial system.</p>
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**OS EFEITOS REAIS DA FINTECH SOBRE O SISTEMA FINANCEIRO GLOBAL**

**RESUMO**

**Objetivo:** A tecnologia financeira (FinTech) implica mudanças radicais para todas as facetas dos serviços financeiros e tem uma importância crescente para a economia global. O objetivo deste trabalho é apresentar uma visão geral dos efeitos salientes da Fintech sobre o sistema financeiro global.

**Design/metodologia/abordagem:** É adotada uma abordagem de revisão de literatura, com análise que revela que a ausência de apoio institucional para novas tecnologias financeiras é a razão mais significativa para a desestabilização da indústria financeira e a formação de bolhas financeiras em vários segmentos de mercado. As implicações atuais e as direções futuras são exploradas com base em análises teóricas e empíricas.

**Descobertas:** Este estudo contribui para o avanço do conhecimento através da síntese das práticas atuais, fornecendo novos insights e monitorando as tendências emergentes nas tecnologias financeiras, bem como lançando luz sobre uma variedade de tópicos de interesse para os formuladores de políticas e acadêmicos, propondo tópicos de pesquisa futura.

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**Implicações práticas:** Este estudo enfatiza a situação atual da pesquisa no campo da tecnologia financeira, que pode auxiliar os formuladores de políticas e instituições na seleção de suas ações futuras.

**Originalidade/valor:** Muito poucos estudos conduziram uma avaliação exaustiva da literatura sobre a Fintech e seus impactos no sistema financeiro global.

**Palavras-chave:** Cadeia de Blocos, Moedas Criptográficas, Economia Digital, Fintech, Bolhas Financeiras.

## LOS EFECTOS REALES DE FINTECH EN EL SISTEMA FINANCIERO MUNDIAL

### RESUMEN

**Objetivo:** La tecnología financiera (FinTech) implica cambios radicales en todas las facetas de los servicios financieros y tiene una importancia cada vez mayor para la economía mundial. El objetivo de este artículo es presentar a pájaro los efectos más destacados de las FinTech en el sistema financiero mundial.

**Diseño/metodología/enfoque:** Se adopta un enfoque de revisión de la literatura, con un análisis que revela que la ausencia de apoyo institucional a las nuevas tecnologías financieras es la razón más significativa de la desestabilización de la industria financiera, y la formación de burbujas financieras en varios segmentos del mercado. A partir de análisis teóricos y empíricos se exploran las implicaciones actuales y las orientaciones futuras.

**Conclusiones:** Este estudio contribuye al avance del conocimiento resumiendo las prácticas actuales, aportando nuevas perspectivas y haciendo un seguimiento de las tendencias emergentes en las tecnologías financieras, además de arrojar luz sobre diversos temas de interés para los responsables políticos y los académicos proponiendo futuros temas de investigación.

**Implicaciones prácticas:** Este estudio pone de relieve el estado actual de la investigación en el campo de la tecnología financiera, lo que puede ayudar a los responsables políticos y a las instituciones a seleccionar sus futuras actuaciones.

**Originalidad/valor:** Muy pocos estudios han realizado una evaluación exhaustiva de la literatura sobre Fintech y sus impactos en el sistema financiero mundial.

**Palabras clave:** Cadena de Bloques, Criptomonedas, Economía Digital, Fintech, Burbujas Financieras.

## INTRODUCTION

Financial technology (FinTech) has developed rapidly over recent years, with the emergence of novel solutions such as Google Pay, a peer-to-peer payment service that lets people send and receive money from their smartphones or computers for free. In 2012 Coinbase was launched as a platform for trading cryptocurrencies, providing exchange services between cryptocurrencies and fiat currencies, as well as storing and managing digital assets. Apple Pay was introduced as a mobile payment service in 2014. Similarly, blockchain technology developed in 2014, examining its possibilities for other financial and inter-organizational transactions, now untethered from currency (Schackmann-Fallis, 2014). In 2015, the innovative blockchain technology that enables the development of decentralised smart contracts and applications was used to generate the Ethereum cryptocurrency. In the same year, the United Nations Environment Program published a paper entitled “The Financial System We Need”, with the explicit purpose of developing FinTech as a green and sustainable solution (Abad-Segura et al., 2020). The Frankfurt School of Finance and Administration established the first FinTech bachelor’s degree program in 2016 (the Digital Innovation and FinTech Bachelor of Business Administration) (Guo & Bouwman, 2016). Google Ventures made its first FinTech

investment in 2018, signalling the massive financial prospects for FinTech at the current juncture (Dospinescu et al., 2019).

Technological improvements make it simpler to manage funds, offer alternate payment methods, and improve access to funding. FinTech has piqued the interest of not just practitioners, investors, and regulators, but also consultants and academics interested in how these innovative technology and innovations affect companies and the financial system as a whole, offering greater prospects for the growth of the financial system itself (CHuang et al., 2019), as well as supporting other industries (Stanko et al., 2017; Yu et al., 2017). However, the increasing complexity of FinTech and associated systems entails a need for more synchronization between different components and stakeholder, relating to nonlinear connections, unforeseen repercussions, and the build-up of national and international economic imbalances (Al-kasasbeh et al., 2022; Hendri et al., 2022).

After the 2008 financial crisis, the financial sector actively began to apply a variety of digitally innovative strategies, laying the groundwork for modern FinTech with a raft of technical innovations in the financial services industry. This often involved adopting FinTech solutions developed by non-financial and start-up companies, mainly in the technological sector, including those pertaining to Big Data, artificial intelligence (AI), smart technologies and the Internet of Things (IoT), robo-advisors, lending systems, encryption systems, chatbots, and blockchain, etc. All FinTech undertakings seek to exploit the latest technological innovations to deliver improved financial services (Danisewicz & Elard, 2018).

The efficiency, speed of information processing, and relevance and customization of information offered by emergent FinTech solutions compelled the traditional participants of the global financial system to aggressively update their operations in order to maintain competitiveness. Financial technologies boost the profitability of the financial sector, but they also alter the structure of the financial system, resulting in a potentially unstable and extremely unpredictable environment (Keister & Sanches, 2021) The employment of numerous financial innovations within the scope of FinTech can foment a potentially unstable environment defined by a high degree of unpredictability. FinTech poses a danger to the sustainability of the whole global system, since its implementation renders the established functional linkages inert, while new institutions and interdependencies may be warped and potentially destabilising, with the potential for numerous unpredictable impacts (Hendri et al., 2022).

The inability of domestic and international regulators to resist new challenges contributes to the instability and unpredictability of the emerging digital financial system. As the effect of FinTech on the evolution of the financial system might result in unanticipated

outcomes, it is crucial to examine the patterns of these transformations from both the scientific and practical perspectives.

## **THEORETICAL REVIEW**

Recent years have seen a significant increase in the number of studies on the application of modern FinTech (He et al., 2017; Shkodina et al., 2018); however, not enough attention has been devoted to the influence of FinTech on financial system transformation (He, 2018), the threats and hazards associated with FinTech deployment, and the role and tasks of regulatory agencies (Hasan et al., 2020; Popelo et al., 2021). Representatives of the IMF continuously observe the characteristics and risks of FinTech and its implementation. Azarenkova et al. (2018) analysed the positive and adverse impacts of FinTech for China's banking sector system and developed a method of ring-fencing to prevent dangers. Abadi and Brunnermeier (2018) highlighted the competitive advantage of the blockchain, but they fear it may lead to improper and instability participant coordination.

Economists from Sydney and Stockholm concluded that the cryptocurrency market is one of the least regulated marketplaces in the world (Foley et al., 2019). As a result, the black e-commerce sector is estimated to be worth up to USD 72 billion, which is equal to the illegal markets in the North America and Europe. The Deputy Director of the IMF's Department of Currency and Stock Markets believes that the future introduction of cryptocurrencies may reduce the demand for fiat currencies regulated by central banks, thereby altering the paradigm of government currencies and the preeminent role of central banks within the financial system (Azarenkova et al., 2018). Barrdear and Kumhof (2016) investigated the role of government institutions in the regulation of emerging FinTech, and opined that the introduction of new FinTech exacerbates cyber risks, which are becoming a significant danger to financial stability.

In the first half of 2018, around USD 731 million in cryptocurrency was stolen, prompting Bouveret (2019) to develop a model to estimate cyber-risk in the financial industry. His research indicated that 10-30% of the financial sector's net income is lost due to cybercrime. Given that FinTech drives the formation of financial bubbles in numerous financial market segments, the study of the essence of financial bubbles is highly pertinent. Such studies situate FinTech in the context of "financial euphoria", a term coined by John Kenneth Galbraith to describe the primary characteristics of financial bubbles (e.g., the creation of a short financial memory, new financial instruments, speculative euphoria, and mass psychology effects, etc.) (Guerlain, 1994). There have been numerous notable recent contributions studying FinTech risks and related issues that have remarked on the unprecedented and potentially bubble-

inducing features of the new technologies and products (Goh et al., 2020; Huang et al., 2020; Tang et al., 2020; Li et al., 2020; Okoli, 2020; Ryu & Ko, 2020).

Razzaque et al. (2020) assessed consumer willingness to adopt FinTech services based on their perceived advantages and risks and found that perceived benefits had a greater impact on customer decisions than perceived hazards. The 2008 financial collapse also undermined confidence in traditional financial products, and led to the subsequent surge in popularity of the crypto market. Despite the exponential growth of new FinTech, little is known about the impact of its introduction on the transformation of the financial system, how development uncertainty may increase, or what the role and responsibilities of regulatory institutions will be during times of fast institutional change in the financial sector.

The goal of this research is to examine the impact of FinTech on the stability of the financial system. To fulfil the goal of the examination, a variety of general scientific and specialised research techniques were employed in this review, including a systematic approach to confirm the most important patterns in the global financial system's evolution as a result of transformation and the introduction of FinTech. A synthesis is undertaken to determine the impact of FinTech on financial institutions' ability to carry out their functions, and expert estimation to develop strategies for enhancing the performance of financial institutions.

## **RESULTS**

Since the success of transactions is largely contingent on how quickly information can be sent and received, the financial markets are often the first to embrace new technologies. Trading in financial markets has moved into the digital sphere as a direct consequence of the advent and development of Internet technology and alternative trading systems (ATS) have been evolving since the late 1990s. From a formal legal viewpoint, these systems cannot be considered exchanges, since they do not execute securities listing tasks; rather, they provide market participants with an alternate, electronic means of trading stocks. In addition, they are not required to supply traders with information on the best pricing, they do not set rules governing traders' conduct, and they are not self-regulating (Petrescu & Wedow, 2017).

Due to their lack of informational openness, ATS are commonly referred to as "dark pools". Currently, algorithmic trading is utilised for transactions in dark pools, more than 80 of which were registered in the US alone in 2017. The monthly trade volume of European dark pools is estimated to be about EUR 80 billion (Shkodina et al., 2018). The biggest commercial banks in the world use their own dark pools to make more money. With trillions of dollars in deposits at their disposal and no way to regulate these "quasi-exchanges", banks reduce the

transparency of financial markets, change the way prices are set, and make the whole financial system more speculative and risky. Because there are more and more transactions in dark pools, and it is becoming increasingly difficult or unattractive to trade on open and regulated stock exchanges, the traditional financial markets are increasingly ineffective in bringing together people who want to buy and sell capital, or turn savings into investments. They are losing things that make them like traditional markets, and are facing fundamental challenges and changing environments.

There has been substantial investment in new technologies, including undersea cables, wireless networks, and fibre-optic lines to connect global financial centres. A lot of money has been put into developing AI by the financial sector, and Google and Schwab have been making digital avatars and robo-advisory products that look at all of an investors' important information to offer smart solutions. The developers who make such products think that these avatars will not only do what their owners say, but also act autonomously when they know what the owner wants (Anshari et al., 2020).

Because of the unexpected success of cryptocurrencies made possible by blockchain technology, hundreds of new businesses have been started to offer services like mobile payments and international money transfers. Since Nakamoto (2008) created Bitcoin, investors, regulators, and the media have paid a lot of attention to cryptocurrencies (Böhme et al., 2015; Cheah & Fry, 2015; Foley et al., 2019). Transparency Market Research, an analysis company, says that by 2024, the global market for blockchain technology will be worth USD 20 billion, growing at a rate of 59% per year (Kim, 2020).

Today, the cryptocurrency market is where blockchain is used the most. More investors and businesses are starting to accept cryptocurrencies as a way to pay. It makes people who run exchanges for cryptocurrencies more interested, and increased demand drives up the prices of cryptocurrencies themselves. Nearly 90% of all bitcoin transactions take place in Asia. Cryptocurrencies have been given legal status (as legal tender) in Japan, in compliance with government laws. Investors have started to see cryptocurrency as a reliable financial asset that is worth putting money into. This has led to a rapid rise in the profitability of cryptocurrency (Hua et al., 2019). The analytical report "State of Blockchain - Q4 2014 -Q1 2021" by SMART VALOR provides proof that the investment in digital assets is much more than that in conventional assets. Figure 1 displays relative prices of various cryptocurrencies from September 2014 to April 2021.

Figure 1: Relative prices of major cryptocurrencies in USD, 2014-2021



Sources: Yahoo Finance and FRED

The profitability of cryptocurrencies has soared as more investors chance the immense risks involved for the massive lucrative gains (e.g., Bitcoin surged in value from USD 1,000 to USD 20,000 in 2017). Robert Shiller (2015), a Nobel laureate in economics, believes that Bitcoin is the finest contemporary illustration of a speculative bubble. In addition, criminals frequently exploit the cryptocurrency market for illicit purposes, including money laundering, tax evasion, financial fraud, theft, and funding terrorism, because it is harder to regulate than more conventional financial markets. In 2017, cybercriminals stole around USD 1.2 billion worth of cryptocurrencies, according to the Anti-Phishing Working Group (APWG) (Foley et al., 2019). As a result, state regulatory agencies have started looking into whether or not bitcoin businesses violate any laws. Dozens of investigations against digital tokens have been opened by the US Securities and Exchange Commission (SEC) because of concerns about fraud.

As the number of people involved in this market grows, so do the potential threats to the stability of the whole financial system. The future of cryptocurrencies is now quite uncertain. Some investors place their faith in the idea that bitcoin is the best financial asset available. The fact that Bitcoin's returns have skyrocketed above those of more conventional financial instruments is proof of this, but it remains highly volatile, as seen in two surges and crashes during 2021; while its value continued to fall through to the present, it remains above its price in Q4 2020. The traditional investing icon Warrant Buffet describes it as "rat poison

squared". Other mainstream financial experts see it as analogous to the stock market in the 1990s, when new technology like computerised trading platforms were first introduced. Similar to the present state of the bitcoin market, there were no standard rules of trade in place on these sites, allowing for price manipulation and fraud to occur (Ryu & Ko, 2019).

As a result, there may be times when avoiding the blockchain's transactional risks is impossible. When asked about cryptocurrency's future, most people would say it is currently extremely hard to foresee, but it does seem indelibly similar to the dynamics of historical financial bubbles, suggesting that the cryptocurrency market will ultimately crash. Cash inflows into the market usually lead to volatile pricing. If investors pay heed to basic economic indicators, the cryptocurrency market and all other markets for financial assets will decline. Even a little occurrence might be the final straw that sends the market tumbling. This technology is currently being used at a breakneck pace, making it imperative that strict supervision be introduced by the regulatory authorities with new financial innovation instruments.

## CONCLUSION

This study examines diverse emerging digital technologies, including blockchain and cryptocurrency. Financial market participants are actively using FinTech, which is changing the way the institutions of the financial system are set up. Both good and bad things happen because of these changes. Innovative FinTech needs to be used in better ways, and the regulatory experiences of different countries need to be brought together. Depending on how quickly and widely new FinTech and public policies are adopted, institutional changes in the financial system will be evolutionary, or outcomes could be severe for the whole global economy (and not just cryptocurrencies themselves). Institutionalizing and regulating the quality of new FinTech will make the financial system more transparent and boost trust in FinTech, which will be a key part of making the future less unpredictable.

It is vital to improve collaboration between government agencies and FinTech businesses in order to build formal norms and processes to ensure the stability and security of the financial sector in order to prevent the negative consequences of financial innovations. It is essential to increase trust and cultivate an innovative culture that assists financial market participants in adapting to a fast-changing financial environment. Given that the process of the system's transformation occurs spontaneously and, in turn, determines human behaviour, it is not always feasible to predict the effects of such a change with precision.

## SUGGESTIONS FOR FUTURE RESEARCH

The impact of FinTech on the transformative potential of financial markets has been neglected. If we are to be prepared to avoid and resolve issues that may develop as a result of this transformation, we must be aware of this effect. It is anticipated that the legal and regulatory communities will address these growing concerns and take steps to better prepare for future FinTech advancements. Regulators must collaborate closely with entrepreneurs and start-ups to comprehend new FinTech advancements and impending difficulties, and to assist the financial industries in addressing these issues. While the literature indicates that many classical monetary theories and business models remain relevant today, little attention has been paid to their adaptations to the rapidly evolving FinTech scene. What theoretical and practical consequences does cryptocurrency have? What variables will define their business applications and procedures for producing value? How has the emergence of FinTech influenced regulatory changes? All of these inquiries remain to be investigated in the future.

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