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CONVERGENCE TECHNOLOGIES IN THE FINANCIAL SECTOR: IMPLICATIONS FOR TRADE FINANCE AND INTERNATIONAL INTEGRATION

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ABSTRACT

Convergence technologies such as blockchain, artificial intelligence (AI), digital payments, crowdfunding, and peer-to-peer (P2P) lending are transforming the global financial sector. These innovations accelerate trade finance, reduce risks, and promote financial inclusion by offering new tools for import–export operations. This paper examines the role of these technologies in global trade finance, highlights international experiences from the United States, China, the United Kingdom, and Japan, and analyzes Uzbekistan's position. The study also explores the challenges Uzbekistan faces in adopting such innovations, including limited access to export credit insurance, underdeveloped FinTech infrastructure, and currency risks. Using recent global data and trade figures, policy recommendations are proposed to enhance Uzbekistan's competitiveness in the international market.

KEYWORDS

Introduction

The financial sector is undergoing rapid digital transformation. Convergence technologies—defined as the integration of blockchain, AI, the Internet of Things (IoT), cloud computing, and digital financial platforms—are increasingly central to financial modernization. Collectively, these technologies reduce transaction costs, expand access to finance, and create transparent mechanisms for cross-border trade. For developing economies such as Uzbekistan, trade finance plays a pivotal role in supporting growth and global integration. Yet reliance on conventional banking instruments often results in delays, high costs, and limited access to credit for small and medium-sized enterprises (SMEs). Convergence technologies provide alternative pathways to overcome these barriers by enabling faster payments, facilitating digital credit, and introducing secure mechanisms for international trade operations.

As shown in Figure 1, the global market for crowdfunding and P2P financing illustrates the scale of this transformation. The global P2P financing market alone is projected to rise from approximately USD 300 billion in 2023 to over USD 1 trillion by 2028, while the crowdfunding market is expected to more than double in the same period. These trends underscore the urgency for developing economies to adopt such tools in order to remain competitive in global trade.

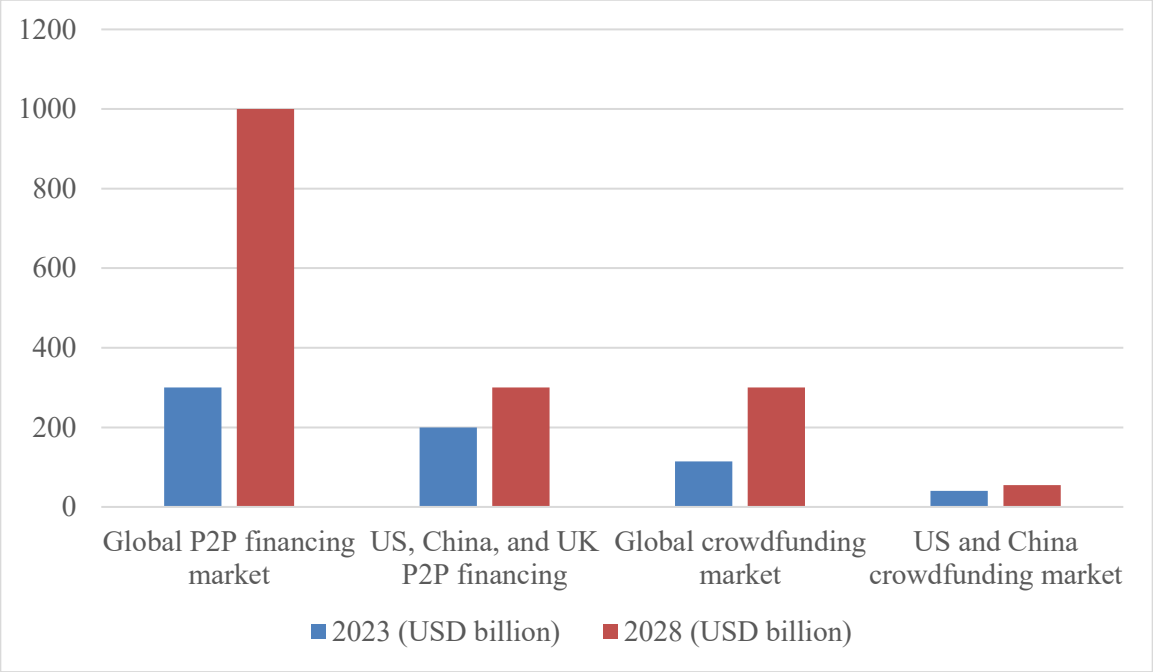

Figure 1. Global, US and China Crowdfunding and P2P financing market size (USD billions)

2. Blockchain and Smart Contracts in Trade Finance

A primary obstacle in international trade finance is the lack of transparency and trust in transactions. Blockchain directly addresses this challenge by providing a distributed ledger system that ensures immutability, transparency, and security. In practice, blockchain enables digital rather than paper-based documentation, while smart contracts—self-executing agreements embedded in the blockchain—automatically enforce terms once pre-set conditions such as shipment confirmation or customs clearance are met.

The benefits are evident: faster settlement of transactions, lower administrative costs, and reduced exposure to fraud. Internationally, banks and state institutions are already piloting blockchain to secure data storage, facilitate customs, and authenticate trade flows. Importantly, blockchain's utility is not limited to cryptocurrency. Its broader role is as a decentralized digital registry where financial and logistical data can be securely stored and accessed.

For Uzbekistan, blockchain adoption could transform customs clearance and export documentation, two areas where inefficiencies and informal practices remain entrenched. By introducing blockchain-based platforms, exporters could receive faster payments, reduce disputes, and integrate more seamlessly into global supply chains.

Yet while blockchain strengthens **trust and efficiency**, it does not directly provide firms with the **capital** needed to expand exports. For this, broader FinTech services become essential.

3. FinTech Services and Digital Payments

Where blockchain primarily enhances transparency and reliability, FinTech extends access to finance itself. Broadly defined as the application of digital technologies in financial services, FinTech is now one of the fastest-growing global industries, generating USD 310 billion in revenue in 2023 with projections surpassing USD 500 billion by 2025.

FinTech services include mobile wallets, instant payments, digital lending, robo-advisors, and AI-driven risk assessment. Their transformative potential lies in **financial inclusion**: by reducing reliance on brick-and-mortar banking, they enable SMEs and individuals previously excluded from formal finance to participate in both domestic and international markets. Governments benefit as well, through digital tax systems, e-government platforms, and faster customs payments.

Table 1 highlight five categories—payments, lending, investment and savings, InsurTech, and RegTech—that together form the backbone of modern digital finance.

Table 1. Main Types of FinTech Services

Category	Description
Payment and Money Transfers	Provides the ability to make fast and low-cost payments and money transfers through mobile applications and online platforms.
Lending Platforms	Offers opportunities to obtain and provide loans through online platforms beyond traditional banks.
Investment and Savings Services	Allows investment, savings management, and financial planning through digital platforms.
Insurance Technologies (InsurTech)	Digitalizes and automates insurance services, creating convenience for customers.
Regulatory Technologies (RegTech)	Provides digital solutions to help financial institutions comply with legal and regulatory requirements.

Uzbekistan has begun to lay the groundwork for FinTech expansion. By 2022, more than half of government services were available online via my.gov.uz, serving over 1.3 million citizens. Internet penetration reached 27.2 million users in early 2023, a foundation for rapid adoption of digital platforms. Nevertheless, cross-border trade finance solutions remain scarce, and integration with global payment systems is incomplete.

FinTech thus builds upon blockchain's foundation of **trust** by expanding **access**, but SMEs still require direct **financing channels** to overcome credit shortages. This is where crowdfunding and P2P platforms play a complementary role.

4. Crowdfunding and Peer-to-Peer Financing

Crowdfunding and P2P financing represent alternative models that bypass traditional banks. Crowdfunding mobilizes small contributions from a large number of individuals, while P2P directly connects borrowers and lenders via digital platforms. These models are particularly valuable for SMEs and startups that often struggle to access credit from conventional banks.

Globally, the crowdfunding market reached USD 114 billion in 2023, while P2P lending exceeded USD 300 billion. Both markets are projected to expand dramatically by 2028, as shown in **Figure 1**. The United States, China, and the United Kingdom dominate this sector, offering practical models of how digital platforms can channel private capital into productive trade activities.

For Uzbekistan, these tools could provide SMEs with a vital bridge to international investors. By leveraging crowdfunding and P2P lending, firms can bypass domestic credit shortages and access global capital pools. This complements the transparency of blockchain and the accessibility of FinTech, together forming a **convergence ecosystem** that reshapes trade finance. To better understand how these elements interact, it is useful to examine international experiences.

5. International Experiences

The experience of leading economies demonstrates that the successful modernization of trade finance requires a combination of technological innovation and strong institutional support. In the United States, the Export–Import Bank (Ex-Im) plays a central role by providing credit, guarantees, and political risk insurance. In 2023 alone, Ex-Im issued USD 20 billion in export credits and insured an additional USD 15 billion in transactions, thereby reducing risk exposure for small and medium-sized enterprises (SMEs) and complementing private-sector digital finance solutions.

China's approach reflects a hybrid model in which state-backed loans, subsidies, and export credit insurance are integrated with a dynamic ecosystem of peer-to-peer (P2P) financing platforms. This synergy between public support and private innovation has enabled rapid expansion of Chinese firms into global markets and underscores how government intervention can accelerate private-sector participation in international trade.

The United Kingdom has positioned itself as a leader in digital platforms and electronic documentation. By 2023, more than 80 percent of payments in the UK were conducted digitally, and over one billion trade-related documents were exchanged electronically. As illustrated in Figure 3, bilateral trade between the UK and Uzbekistan has followed an upward trajectory, suggesting that the adoption of UK-style digital trade platforms and e-documentation systems could provide significant benefits for Uzbekistan's exporters.

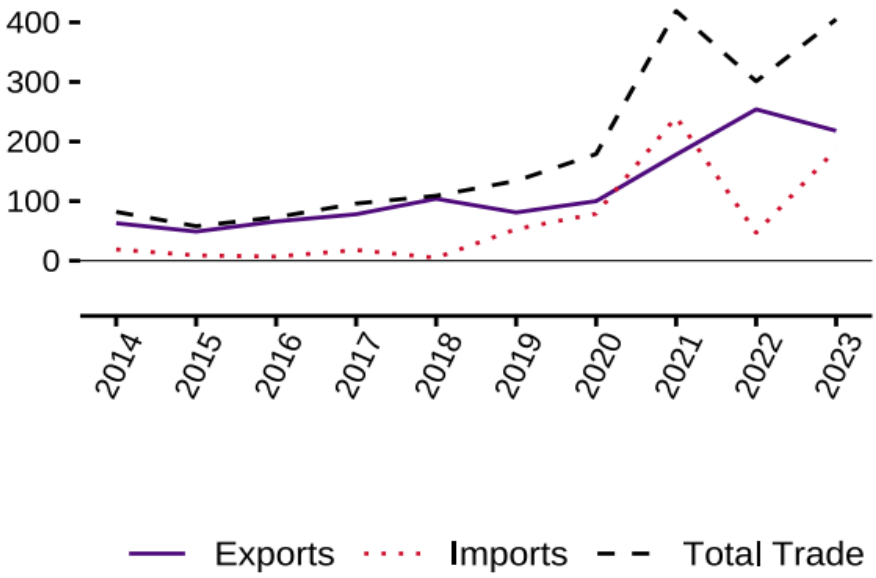

Figure 2. UK–Uzbekistan External Trade

Source: ONS, UK Trade in Goods and Services, Q2 2024

Japan emphasizes stability and long-term security in its trade finance architecture. Through the Japan Bank for International Cooperation (JBIC) and the Nippon Export and Investment Insurance (NEXI), more than USD 100 billion worth of exports were insured in 2023. These mechanisms provide exporters with predictable financial environments, even in periods of global volatility, and highlight the importance of risk management tools in sustaining international competitiveness.

Taken together, these cases illustrate that convergence technologies alone cannot deliver systemic change unless they are embedded within comprehensive institutional frameworks such as insurance systems, guarantees, and regulatory oversight. For Uzbekistan, these international practices provide both benchmarks and practical lessons for designing an effective trade finance strategy.

6. Uzbekistan's Challenges

In contrast to these global leaders, Uzbekistan continues to face several systemic barriers that limit its ability to fully benefit from convergence technologies. As shown in Figure 3, the main constraints include the absence of export credit insurance and guarantee mechanisms, weak interbank competition, currency-related risks, and underdeveloped digital financing infrastructure. These challenges highlight the structural reforms required for Uzbekistan to transition from fragmented practices to a modern, technology-enabled trade finance system.

Figure 3 – Main problems in Uzbekistan's trade finance.

Building on international experience and local realities, Uzbekistan could pursue the following strategies:

1. Uzbekistan should establish a dedicated Ex-Im Bank that provides loans, guarantees, and export credit insurance. This would protect exporters from political and commercial risks while expanding access to financing for small and medium-sized enterprises.
2. Building on global best practices, Uzbekistan should introduce digital systems for payments, customs clearance, and trade documentation. Expanding FinTech solutions would lower costs, reduce delays, and make international trade more accessible.
3. To reduce currency risks and financial instability, banks should offer hedging tools and risk management services. At the same time, Uzbekistan should deepen cooperation with international organizations such as the World Bank, IMF, and ADB to secure technical expertise and funding for modernization.

Conclusion

Convergence technologies are not just reshaping global finance; they are creating new opportunities for trade-dependent economies like Uzbekistan. Blockchain, AI, FinTech platforms, crowdfunding, and P2P lending can collectively enhance transparency, efficiency, and financial inclusion. While challenges remain—particularly in export credit insurance, currency risk, and digital infrastructure—international experiences provide practical lessons. By adopting these tools and strategies, Uzbekistan can boost exports, integrate more deeply into global value chains, and accelerate its transition into a digital economy.

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