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GLOBAL DEVELOPMENT TRENDS OF DIGITAL PAYMENT TECHNOLOGIES

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Abstract

This article analyzes global trends in the development of digital payment technologies and their role in transforming payment systems under modern economic conditions. In particular, it highlights the growing share of cashless transactions, the expansion of mobile payments and electronic wallets, the development of QR payments and contactless technologies, as well as the increasing influence of large technology companies (BigTech) in shaping payment ecosystems. The study examines the impact of digital payments on reducing transaction costs, accelerating financial operations, increasing transparency in economic processes, and reducing the scale of the shadow economy. The findings suggest that the further development of digital payment technologies requires improvement of the institutional and regulatory framework, strengthening of cybersecurity, and enhancement of user trust in digital financial services.

Keywords: Digital payments, payment systems, BigTech, electronic wallets, QR payments, contactless payments, biometric technologies, financial inclusion, shadow economy, cybersecurity.



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Introduction

In recent years, the rapid development of the digital economy has led to profound changes in financial systems and settlement mechanisms. Cutting-edge payment technologies are actively replacing traditional cash transactions with digital instruments, including electronic money, internet banking, mobile applications, electronic wallets, QR payments, and contactless solutions. This transformation is driven by expanded internet access, increased smartphone usage, the growth of e-commerce, and the demand of businesses and consumers for fast, convenient, and secure payment methods. Digital payments are increasingly becoming an infrastructural foundation for improving the efficiency of financial operations, reducing costs, and accelerating capital circulation.

At the same time, the digitalization of payment systems has strengthened the role of non-bank organizations and technological platforms, creating a new competitive environment in financial services markets. Under conditions of transition to a cashless economy, analyzing the key trends and factors shaping the development of digital payment technologies has become an increasingly important task.

Literature Review

In academic literature, digital payment technologies are regarded as an important element of the institutional transformation of the economy. They have a significant impact on ensuring financial stability, expanding financial inclusion, and reducing the share of the shadow economy. According to data from the World Bank's *Global Findex Database*, expanding access to digital payment services contributes to increased financial inclusion and lowers barriers to participation in the formal economy. Reports particularly emphasize that mobile payments and



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electronic wallets accelerate the integration of citizens and small businesses into the financial system.

The International Monetary Fund (IMF) notes that the digitalization of the economy and the widespread adoption of digital payments lead to the formation of a “digital trace.” This, in turn, increases transaction transparency and can serve as an effective tool for reducing the shadow economy, strengthening fiscal discipline, and expanding the tax base.

OECD studies highlight that the development of digital payment infrastructure reduces transaction costs and contributes to increased productivity, particularly in the small and medium-sized enterprise (SME) sector. In particular, the role of digital payments in improving service quality, shortening settlement times, and expanding trade channels is emphasized.

Analytical materials published by the United Nations Development Programme (UNDP) assess digital payments as a factor of sustainable development, noting their contribution to expanding access to financial services, stimulating entrepreneurial activity, and strengthening socio-economic stability. In addition, academic studies (Suri & Jack, 2016; Demirgüç-Kunt et al., 2022) confirm the positive impact of mobile payments on household incomes, business sustainability, and long-term poverty reduction.



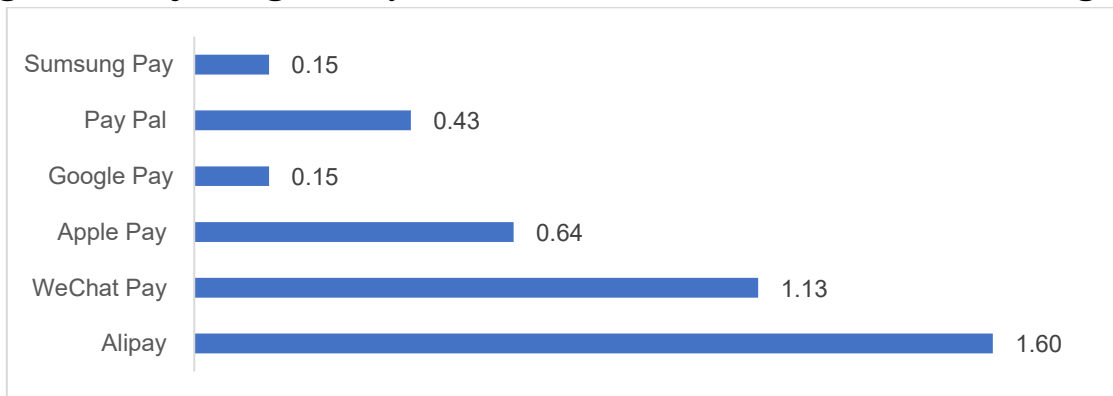
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BigTech: Major Digital Payment Platforms and Their Market Coverage



Among the most influential participants in the digital payments segment of BigTech are Apple, Google, Amazon, Alibaba, Tencent, and Meta (Facebook). These companies are actively developing their own payment solutions, electronic wallets, and transaction processing infrastructures.

Mobile payments and electronic wallets are increasingly becoming the dominant means of consumer settlements. In particular, QR payments occupy a distinct position. Their rapid diffusion is explained by low implementation costs for businesses, the ability to operate without expensive POS terminals, ease of integration with mobile applications, and their convenience for small businesses and self-employed individuals. This trend is especially evident in countries with a high share of micro-entrepreneurship, as QR payments accelerate the digitalization of trade and service sectors.

The digitalization of payment transactions is widely regarded in global practice as one of the most effective instruments for increasing transparency in economic processes and reducing the scale of the shadow economy. This is primarily



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associated with the fact that digital payments generate a technologically recorded “**digital trace**,” which significantly limits opportunities for income concealment, informal cash circulation, and tax evasion.

The shadow economy typically develops under the following conditions:

- a high share of cash-based transactions;
- weak financial discipline and accounting practices;
- limited control over the movement of financial flows;
- insufficient levels of digital literacy;
- weak integration of businesses into the formal financial system.

Under such conditions, digital payment technologies emerge as an institutional mechanism that gradually transforms financial operations into a transparent and controllable format.

Channels Through Which Digital Payments Affect the Shadow Economy

Impact channel	What changes	Effect on the shadow economy
Digital trace	Each transaction is recorded	Reduced ability to conceal turnover
Income reporting	Revenues are automatically recorded	Increased tax revenues
Bank reporting	Transparency of fund flows increases	Stronger financial discipline
Reduction in cash usage	Cash transactions decline	Shrinking of ‘informal’ schemes
Integration with government platforms	Data exchange is enabled	Enhanced monitoring of operations

In countries actively developing digital payment systems, the share of cashless transactions often exceeds 60–70%. By contrast, in regions with low levels of digitalization, cash remains the primary means of payment. According to



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analysts' estimates, a 10% increase in the share of cashless transactions may lead to GDP growth of 0.5–1%, driven by improved economic transparency and reduced capital leakage.

Nevertheless, despite their high efficiency, digital payments cannot entirely eliminate the shadow economy. The main constraints include:

- low levels of digital literacy among the population;
- uneven access to the internet (particularly in rural and remote areas);
- high commission fees for small businesses;
- cybersecurity risks and lack of trust in digital security;
- the persistence of informal settlement networks.

These limitations indicate that digital payments are not a universal solution, but rather an important component of a comprehensive strategy aimed at reducing the shadow economy.

Conclusion

The analysis demonstrates that global trends in the development of digital payment technologies are characterized by a steady transition toward cashless transactions, alongside the expansion of mobile payments, electronic wallets, QR technologies, and contactless payment methods. Digital payments have become an essential infrastructural element in the modern economy, accelerating financial operations, reducing transaction costs, and enhancing convenience for both consumers and businesses.

One of the key trends is the growing role of large technology companies (BigTech) in shaping payment ecosystems and transforming traditional models of interaction between banks, fintech companies, and consumers. The extensive



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customer bases of BigTech firms and the integration of payment services into digital platforms enable rapid scaling of financial services. However, this development also intensifies market competition and simultaneously requires improvements in regulatory mechanisms, cybersecurity, and data protection systems.

Digital payments are also of particular importance as a tool for reducing the shadow economy. The formation of a “digital trace,” increased transparency of financial flows, and the automation of transaction recording create favorable conditions for strengthening tax discipline and expanding the formal sector of the economy. International studies confirm that an increasing share of digital payments can have a positive impact on macroeconomic indicators, including improved efficiency of economic circulation and enhanced financial system stability.

Therefore, the further development of digital payment technologies should be considered a strategic priority within economic policy and digital transformation agendas. This requires a comprehensive approach encompassing infrastructure development, support for innovation, enhancement of financial and digital literacy, and the strengthening of institutional and regulatory frameworks.

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