DIGITAL SPASE

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# DIGITAL FINANCIAL SERVICES IN THE FACE OF CONTEMPORARY CHALLENGES

*The development of the digital financial services market in the context of the digital transformation of the economy has been studied, taking into account current challenges related to martial law, the needs of post-war recovery, and the deepening of Ukraine's European integration. The study is based on the hypothesis that Ukraine's digital financial services market has already formed a basic infrastructural and behavioural foundation for further growth; however, its strategic potential in post-war recovery and EU integration depends on the transition from the quantitative expansion of digital services to their qualitative, safe, inclusive, and regulatory-compatible development. The methodological basis of the study is formed by a systemic approach, comparative analysis, statistical methods for assessing macroeconomic, financial, and financial-infrastructural indicators, as well as structural-functional and cause-and-effect analysis.*

*The study systematized the key statistical trends in the development of digital financial services, analysed the segmental structure of digital payments, remote identification, and digital lending, and also conducted a comparison of Ukrainian indicators with relevant benchmarks of European Union countries. Particular attention was paid to the role of cashless payments, the BankID system, digital government services, FinTech solutions,*

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# ЦИФРОВІ ФІНАНСОВІ ПОСЛУГИ В УМОВАХ СУЧАСНИХ ВИКЛИКІВ

*Досліджено розвиток ринку цифрових фінансових послуг в умовах цифрової трансформації економіки з урахуванням сучасних викликів, пов'язаних із воєнним станом, потребами повоєнного відновлення та поглибленням європейської інтеграції України. Дослідження ґрунтується на гіпотезі, що ринок цифрових фінансових послуг України вже сформував базову інфраструктурну й поведінкову основу для подальшого зростання, однак його стратегічний потенціал у повоєнному відновленні та інтеграції до ЄС пов'язаний з переходом від кількісного поширення цифрових сервісів до їх якісного, безпечного, інклюзивного та регуляторно сумісного розвитку. Методологічну основу дослідження формують системний підхід, порівняльний аналіз, статистичні методи оцінювання макроекономічних, фінансових та фінансово-інфраструктурних показників, а також структурно-функціональний і причинно-наслідковий аналіз.*

*У ході дослідження систематизовано ключові статистичні тенденції розвитку цифрових фінансових послуг, проаналізовано сегментну структуру цифрових платежів, дистанційної ідентифікації та цифрового кредитування, а також здійснено порівняння українських показників з релевантними орієнтирами країн Європейського Союзу. Особливу увагу приділено ролі безготівкових платежів, системи BankID, цифрових державних сервісів,*

*and digital interaction tools between the state, businesses, and the population. It was determined that in 2020–2025, the Ukrainian market underwent a stage of rapid digital adaptation and formed a basic digital financial infrastructure; however, its further development requires a transition from quantitative growth to improving the quality, security, inclusiveness, and European compatibility of digital services.*

*The main barriers to market development remain regulatory fragmentation, insufficient completeness in the statistical measurement of certain segments, cyber risks, uneven access of the population to digital services, as well as the need to strengthen users trust in digital financial products. Practical directions for state policy and market actions have been proposed, including harmonization of regulation with EU requirements, development of open banking, improvement of digital identification, strengthening cyber resilience, formation of a reserved digital financial infrastructure, and support for comprehensive digital solutions for small and medium-sized enterprises, relocated businesses, and households. It has been established that digital financial services can become one of the important instruments of Ukraine's post-war economic recovery, provided that they are developed responsibly, securely, and in strategically coordinated manner.*

*Keywords:* digital financial services, digital economy, FinTech, cashless payments, remote identification, BankID, digital lending, financial inclusion, post-war recovery, European integration.

*FinTech-рішень та інструментів цифрової взаємодії між державою, бізнесом і населенням. Визначено, що у 2020–2025 рр. український ринок пройшов етап швидкої цифрової адаптації та сформував базову цифрову фінансову інфраструктуру, однак подальший його розвиток потребує переходу від кількісного зростання до підвищення якості, безпеки, інклюзивності та євросумісності цифрових сервісів. Головними бар'єрами розвитку ринку залишаються регуляторна фрагментарність, недостатня повнота статистичного вимірювання окремих сегментів, кіберризики, нерівномірність доступу населення до цифрових сервісів, а також потреба в посиленні довіри користувачів до цифрових фінансових продуктів. Запропоновано практичні напрями державної політики та ринкових дій, зокрема гармонізацію регулювання з вимогами ЄС, розвиток відкритого банкінгу, удосконалення цифрової ідентифікації, посилення кіберстійкості, формування резервованої цифрової фінансової інфраструктури та підтримку комплексних цифрових рішень для малого й середнього підприємництва, релокованого бізнесу та домогосподарств. Встановлено, що цифрові фінансові послуги можуть стати одним із важливих інструментів економіки України у повоєнний період за умови їх відповідального, безпечного та стратегічно скоординованого розвитку.*

*Ключові слова:* цифрові фінансові послуги, цифрова економіка, *FinTech*, безготівкові платежі, дистанційна ідентифікація, *BankID*, цифрове кредитування, фінансова інклюзія, повоєнне відновлення, європейська інтеграція.

**JEL Classification:** G20, G21, G28, O33, E42.

## Introduction

In the current conditions of rapid development of the digital economy, digital financial services (DFS) are becoming one of the key drivers of economic growth, improving the efficiency of financial markets, and expanding public access to financial resources. The active implementation of financial technologies (FinTech), mobile banking, electronic payments, and digital platforms is transforming the traditional financial system, creating new opportunities for businesses and citizens.

For Ukraine, the issue of developing digital financial services is becoming increasingly relevant amid the digital transformation of the economy and integration into the global financial space. In recent years, there has been significant growth in the sector: the number of users of online banking, cashless payments, digital wallets is increasing, and the range of financial services available through digital channels is expanding. Between 2020

and 2025, the number of issued payment cards in Ukraine grew from 73.4 million to 148.5 million, active cards – from 40.4 million to 65.4 million, and the number of successful identifications through the NBU BankID – from 7.6 million to 109.4 million. Alongside this, the number of users of the Diia app increased from 2.5 million in 2020 to over 23 million by the end of 2025 (National Bank of Ukraine, 2021, 2026). In particular, digital finance is no longer an "additional service" but a basic infrastructure for access to payments, remote identification, lending, public disbursements, and citizens' interaction with the state and financial institutions. At the same time, the digitalization of the financial sector promotes increasing financial inclusion, especially in remote regions.

The development of digital financial services takes on particular significance in the context of Ukraine's post-war economic recovery. Digital tools ensure the transparency of financial flows, the effective distribution of state aid, support for small and medium-sized businesses, and also contribute to attracting investments. They also play an important role in enhancing the resilience of the financial system in the face of crisis challenges.

Despite the positive dynamics in the development of digital financial services in Ukraine, there are a number of problems that hinder their full implementation and effective use. Among the key challenges, it is worth highlighting the insufficient level of digital and financial literacy of the population, uneven access to digital infrastructure, as well as issues of cybersecurity and personal data protection.

In addition, there is a need to improve the regulatory and legal support for the functioning of digital financial services, to harmonize legislation with international standards, as well as to develop institutional support for innovations in the financial sector. It is also an important task to ensure users' trust in digital financial instruments, which is a critical determinant of their widespread adoption.

In the conditions of Ukraine's post-war reconstruction, the issue of integrating DFS into economic recovery mechanisms will require special attention, particularly to ensure the effective allocation of financial resources, support for entrepreneurship, and stimulation of economic activity. Therefore, there arises an objective necessity for a comprehensive study of current trends in the development of DFS, identification of key challenges, and justification of prospects for their further development in Ukraine, taking into account the needs of post-war economic recovery.

The issues of digital finance have been widely studied in recent years by both foreign and domestic scholars. In particular, the results of the study by Bontadini et al. (2024) are useful in terms of justifying the macroeconomic importance of digital finance, since the authors, based on new indicators of financial sector digitalization for 21 OECD countries for 1995–2018, prove that the digitalization of financial services has a direct positive connection

with productivity, eases credit constraints for SMEs and industries with a high share of intangible assets. The work of Anton and Afloarei Nucu (2024) presents the results of a study on how traditional and digital financial inclusion affect the stability of banks in a sample of 81 countries. The authors use quantile regression and show a nonlinear relationship: at lower levels, inclusion can increase risks, but beyond a certain threshold, it has a positive effect on banking stability. In turn, Xie and Wu (2024), analysing panel data of 30 provinces in China for 2011–2021, prove that the development of digital finance promotes the commercialization of R&D results. At the same time, the positive effect of digital finance depends on the effectiveness of financial regulation. The publication by Meng and Xiao (2025) is dedicated to the impact of digital finance on the development of cross-border e-commerce in China based on provincial data for 2013–2023. The authors found that digital finance significantly stimulates cross-border e-commerce, particularly through the growth of technology markets, internet penetration, and investments in innovation. In the work by Dias and Perera (2026), a systematic literature review using the PRISMA methodology is presented, which analysed 50 Scopus articles from 2013 to 2025. Therefore, the authors summarize that digital financial methods increase the accessibility, availability, and quality of financial services for marginalized groups, but their development is hindered by digital financial illiteracy, regulatory barriers, infrastructure limitations, and socio-economic inequality.

It is also worth noting the studies of the European Central Bank (ECB) (European Central Bank, 2024; 2025), which demonstrate how card payments, online payments, credit transfers, and cash coexist in mature European markets. The authors emphasize that digitalization in Europe is not limited to the "abandonment of cash", but involves changes in consumer habits and infrastructure. According to Eurostat (2025), official data on internet banking, e-governance, e-commerce, and digital skills have been systematized. The use of these data allows for comparing Ukraine's indicators with the European context of citizens' digital behaviour.

Among domestic scholars, the authors Bondaruk T. and Bondaruk O. (2025) can be noted, who prove that banks with higher digital efficiency demonstrate stronger competitive advantages, greater adaptability to market changes, improved risk management capabilities, and a higher level of economic security. The researchers conclude that digital banking products and technologies are a strategic tool for strengthening the economic security of banks, provided they are integrated into a comprehensive system of managerial and informational-analytical support. The study by Yefymenko and Dmytrenko (2025) is dedicated to digital currencies, CBDCs[1], e-hryvnias, stablecoins, cryptocurrencies, and virtual assets. The authors emphasize the need to develop the e-hryvnia project, legalize the

[1] CBDC (Central Bank Digital Currency) – central bank digital currency.

virtual assets market in accordance with FATF[2] standards, strengthen AML/CFT-procedures[3] and integrate digital assets with banking and payment infrastructure.

The research by Kornivska (2025) is useful in terms of revealing the social risks of financial digitalization. The author considers digital finance not only as a technological or economic phenomenon but also as a factor of social, psychological, and institutional changes. The impact of digital financial technologies and digital credit on consumer behaviour, financial discipline, responsibility, and an individual's economic freedom is also analysed. In the work by Hniezdovskyi et al. (2024), the role of the digital financial space in ensuring Ukraine's economic growth is substantiated. In particular, a SWOT analysis and a time series analysis regarding cashless transactions and GDP were applied. The authors argue that the growth of cashless transactions has a moderate positive impact on GDP, and digital finance has the potential to stimulate economic growth. The article by Hlushchenko and Veriutin (2025) is dedicated to the development of digital financial services in Ukraine, as well as the analysis of current trends, risks, and regulatory issues.

At the same time, the issue of post-war use of digital finance as a tool for recovery, especially in terms of digital lending to SMEs and households, remains studied fragmentarily.

Overall, based on the results of the analysis of available scientific publications, it can be concluded that the digital financial services market is growing faster than its institutional bottlenecks are being eliminated. Ukraine demonstrates a very rapid digitalization of payments, identification, and government services, but at the same time it faces a deficit of harmonized statistics for certain segments, high concentration of certain markets, increasing cyber risks and fraud, uneven digital and financial literacy, as well as the need to align regulation with European rules. Therefore, the main scientific and practical question is not only how fast the market is growing, but also whether this growth is transforming into a sustainable, safe, and inclusive model of financial digitalization.

The purpose of the article is, based on official and authoritative sources, to assess the dynamics, structure, problems, and prospects of the digital financial services market in Ukraine over the past years and to identify areas that have the greatest potential for post-war economic recovery and European integration.

The study put forward the hypothesis that the market for digital financial services in Ukraine has already formed a basic infrastructural and

[2] FATF (Financial Action Task Force) – an international organization that sets standards for combating money laundering, terrorist financing, and other financial crimes. In the context of digital finance, FATF develops recommendations for regulating cryptocurrencies, virtual asset exchanges, and other financial intermediaries.
[3] AML (Anti-Money Laundering) – anti-money laundering; CFT (Countering the Financing of Terrorism) – countering the financing of terrorism.

behavioural foundation for further growth; however, its strategic potential in post-war recovery and integration into the EU depends on the transition from the quantitative spread of digital services to their qualitative, safe, inclusive, and regulatory compatible development. In particular, the greatest effect for the economy can be achieved by combining digital payments, remote identification, digital lending, insurance, and government services into unified client-oriented ecosystems.

The structure of the main part of the article consists of four interrelated sections: the first one systematizes the key statistical trends of the Ukrainian DFS market, assesses the segmental structure of payments, remote identification, and digital lending; the second section compares Ukrainian DFS market indicators with relevant benchmarks of EU countries. The third section is devoted to identifying regulatory, infrastructural, and behavioural barriers to market development, and the fourth – outlines scenarios for the development of the DFS market and summarizes recommendations for state policy and the market.

## 1. The state of the digital financial services market in Ukraine

Since 2020, the development of the Ukrainian DFS market has had a wave-like character, but overall it has demonstrated an upward dynamic. The pre-war period of 2020–2021 was a phase of rapid expansion of the card market, active migration of payments online, and explosive growth of BankID and Diia. 2022 has become a test of resilience: the terminal network has shrunk, but cashless payments and remote identification have not stopped. 2023–2025 showed not just recovery, but a transition to a qualitatively higher level, which consisted of growth in the share of NFC payments, a sharp increase in BankID, the restoration of the terminal network above the pre-war level, and a further shift in consumer demand towards online and mobile channels (*Table 1*).

*Table 1*

The state of the digital payment transactions market in Ukraine

| Year | Issued cards, million | Active cards, million | POS-terminals in the commercial and service network | Cashless transac-tions, million | Cashless transac-tions, billion UAH | Successful BankID NBU identifica-tions, million | Users of "Diia", million people |
|---|---|---|---|---|---|---|---|
| 2020 | 73.4 | 40.4 | 375.0 | 5211.2 | 2208.7 | 7.6 | 2.5 |
| 2021 | 89.1 | 46.3 | 426.5 | 7039.7 | 3090.9 | 30.2 | 12.0 |
| 2022 | 109.8 | 46.3 | 359.2 | 6997.4 | 2996.3 | 32.8 | 18.5 |
| 2023 | 115.1 | 52.1 | 449.5 | 7397.2 | 3980.0 | 42.9 | 20.0 |
| 2024 | 132.0 | 58.8 | 496.6 | 8184.8 | 4243.5 | 87.7 | 21.0 |
| 2025 | 145.8 | 65.4 | 558.6 | 9184.9 | 4684.8 | 109.4 | 23.0 |

*Source*: National Bank of Ukraine (2021, March 3), official announcements of the Ministry of Digital Transformation and the "Diia" portal.

Over six years, the number of issued cards has practically doubled, while active ones have increased by almost 62%. This means not just an increase in the number of payment instruments, but a deeper inclusion of the population into the digital payment ecosystem. An even more pronounced growth is observed in the NBU's BankID: from 7.6 million successful identifications in 2020 to 109.4 million in 2025, which is approximately 14 times more. The number of Diia users over the same period increased from 2.5 million to over 23 million people, making it a key platform for digital interaction between citizens and the state and, indirectly, with financial services.

The analysis results of the Ukrainian DFS market by segments demonstrate that it has already passed the phase when the main digital driver was P2P-transfers. In 2020–2022, card-to-card transfers dominated in terms of cashless transaction amounts, but from 2024, the leadership by both volume and amount has shifted to payments in trade and service networks. That is, this trend is in the "maturity" stage. Digital finance increasingly serves not only "money transfers" but also everyday consumption, retail payments, and integrated services. Online payments remain a consistently important segment, although their share by volume has decreased compared to 2020 due to the faster growth of POS/NFC-payments[4] (*Table 2*).

*Table 2*

Structure of the Ukrainian digital services market

| Year | Retail network | | Internet | | P2P | |
|---|---|---|---|---|---|---|
| | % of quantity | % of the amount | % of quantity | % of the amount | % of quantity | % of the amount |
| 2020 | 49.8 | 26.9 | 36.5 | 29.1 | 12.6 | 42.8 |
| 2021 | 52.4 | 28.4 | 25.9 | 23.3 | 12.7 | 43.6 |
| 2022* | 52.0 | 23.1 | 27.0 | 15.6 | 15.6 | 58.3 |
| 2023 | 66.9 | 40.4 | 17.9 | 16.2 | 10.1 | 37.1 |
| 2024 | 73.4 | 46.8 | 13.6 | 14.7 | 8.2 | 31.1 |
| 2025 | 74.3 | 50.9 | 13.9 | 16.4 | 7.3 | 26.3 |

** for 2022, NBU published these shares in the format "May–December 2022"*

*Source*: National Bank of Ukraine (2021, March 3, 2026, February 16).

The most difficult segment to assess is digital lending, because Ukraine's official statistics still do not provide a complete annual series of "all digital loans in the economy". However, available indirect data indicate a clear increase. In 2023, more than 4 million identifications for financial services were carried out through the NBU's BankID; in 2024 – over 5 million; and in 2025, the number of commercial identifications exceeded 6 million (*Figure 1*). At the same time, the NBU notes that in 2024, the volume of retail loans provided by financial companies increased by

[4] POS/NFC-payments — this is a contactless method of paying for goods or services, in which data is transmitted from a device (smartphone, watch) to a terminal via technology Near Field Communication (NFC).

a quarter compared to 2023. Therefore, the non-bank segment, integrated with remote identification and scoring models, remains the main driver of digital lending (National Bank of Ukraine, 2026, February 3).

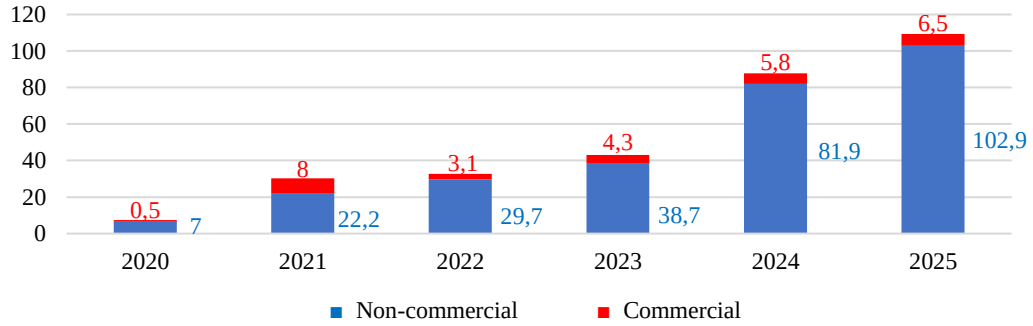


Figure 1. Dynamics of identifications in the BankID NBU system, million units

*Source*: National Bank of Ukraine (2026, February 3).

It is also important to note that in 2024–2025, new commercial participants of the NBU BankID continued to join the system specifically with online lending services. This does not provide an exact measurement of the volume of digital loans, but it confirms that remote identification and digital credit onboarding remain one of the most dynamic segments of the market (BankID, 2025).

Overall, in Ukraine, compared to other European countries, the FinTech market is developing more slowly, has certain legislative restrictions, is weakly capitalized, and is concentrated in narrow niches – mainly payment services and online lending.

Although there is no official statistics in Ukraine on the volumes of P2P loans for business, an analysis of indirect indicators allows us to assert that the market scale is currently small. In 2016, at the initial stage of the segment's development, the National Bank estimated the total volume of P2P loans at approximately UAH 5 billion (Interfax, 2016, December 15). This is a very modest amount for Ukraine's economy – experts emphasized that it is significantly lower than the funding needs of SMEs. Subsequently, from 2018 to 2021, the P2P market in Ukraine developed slowly. In 2022, the impact of the war became a significant shock to it: investors sharply reduced their activity due to increased risks, and many business borrowers ceased operations. In that same year, the volumes of new crowdlending practically froze. Only in 2023–2025, along with the stabilization of the economy, there was some revival, but even by the end of 2025, the volumes of P2P loans for SMEs remain minimal compared to bank lending or government support programs. For example, in 2022, only 20% of Ukrainian SMEs had access to favourable lending (Medko, 2025), and the P2P sector has had little impact on this situation so far.

According to the Ukrainian Association of FinTech and Innovative Companies (UAFIC), in 2025 there were 257 FinTech companies operating

in the market (in 2024 – 260), 38% of which operate in the international market, and 78% are based in Kyiv. As of 2024, the total market valuation amounted to USD 1.5 billion.

As noted by the Deputy Governor of the NBU, O. Shaban, in 2025 another key trend was clearly outlined – the active implementation of artificial intelligence (AI) in financial services. AI is gradually being integrated into financial processes, opening up new opportunities for automation and improving the level of customer service, increasing the accuracy of creditworthiness assessments, enhancing compliance and risk monitoring processes, combating fraud, and increasing the efficiency of the operational activities of financial institutions. The National Bank considers AI not as a one-time initiative, but as an infrastructural innovation that should support the effectiveness of the regulator's functions and the innovative development of Ukraine's financial ecosystem as a whole (UAFIC, n. d.).

If we consider the structure of the *FinTech* market in 2025 compared to the previous year, some changes can be observed (*Figure 2*).

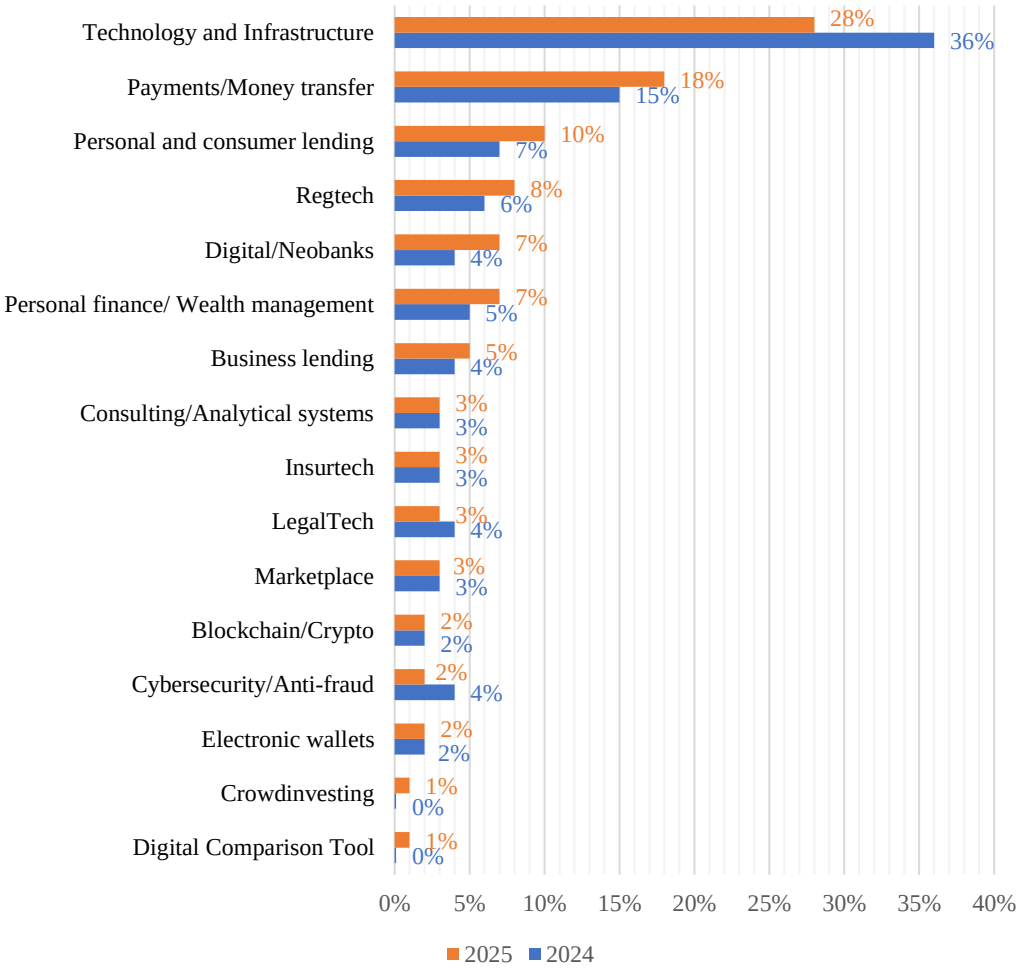


Figure 2. Distribution of FinTech companies by areas of activity in 2024–2025

*Source:* created by the author based on data from UAFIC (n. d.).

The largest market share in 2025 was held by technology infrastructure, indicating a stable demand for IT solutions for financial institutions. Payment services and money transfers remained in second place, with a 3% growth compared to 2024. The analysis based on NBU data showed that the growth of user trust in cashless payments and the increasing popularity of contactless payments stimulate the creation of innovative solutions in this area. The third place, with a slight growth rate, was occupied by the consumer lending segment.

RegTech[5] demonstrates steady growth, which may be associated with strengthening regulatory requirements and the need to automate compliance processes. Neobanks and personal finance management companies have also shown growth. The areas of LegalTech, InsurTech, marketplaces, and blockchain/cryptocurrencies remain at a stable level. Cybersecurity and fraud prevention remain relevant, although their share has decreased. Taking into account the increasing cyber threats, this area is relevant and requires attention. New areas have emerged, such as crowdinvesting and digital comparison tools, each of which has a minimal market share. This indicates a search for new financing models and increased transparency of financial services.

## 2. Comparison of the DFS market in Ukraine with European countries

To understand the current state of the digital financial services (DFS) market in Ukraine and identify gaps in its development, it is worth comparing the indicators of internet banking usage by the population, the maturity of digital payment behaviour, and institutional readiness for remote interaction with EU countries: Germany, Lithuania, and Romania. The expediency of choosing these particular countries is explained by the fact that Germany has a large, mature DFS market and serves as a benchmark for large-scale digital banking. Lithuania is one of the most digitally developed small markets in the EU and is close to Ukraine in terms of eID/fintech-first logic. Romania is a convergent country with a lower level of digital penetration than Western European countries, which makes it a useful reference for Ukraine.

As of 2025, the level of internet banking usage in the European Union remains one of the highest in the world and continues to grow, remaining significantly higher than in Ukraine (*Table 3*). In EU countries in 2025, 68.7% of the population aged 16–74 used internet banking (Eurostat, 2025, March); among internet users, this indicator was 80–90%. According to Eurostat, in Germany, the internet banking usage rate in 2024 was about 80.7%, while in Romania it was about 47.1%. In the Baltic countries,

[5] RegTech (Regulatory Technology, regulatory technologies) — is a set of tools and software solutions based on the latest technologies (artificial intelligence, Big Data, blockchain, cloud computing) that help financial institutions and companies fulfil regulatory requirements faster, more efficiently, and more cheaply.

particularly in Lithuania, most regions also showed high indicators – at least 80%. Therefore, this means that the EU already has a clearly defined "digital corridor" of mature online banking markets. Ukraine does not yet have a direct Eurostat-compatible estimate of this indicator, but its indirect data, in particular 95.2% of cashless card transactions by number in 2025, a high number of identifications through BankID, and over 23 million users of Diia, indicate a very high actual digital activity in payment and identification services.

*Table 3*

Comparison of the DFS market in Ukraine and some EU countries

| Indicator | Ukraine | Germany | Lithuania | Romania |
|---|---|---|---|---|
| Market volumes / scale of digital payments | UAH 7.157 trillion (9.512 billion card transactions) | USD 2.12 trillion (mobile payments) | EUR 166 billion (EMI/PI[6]payments) | USD 38.31 billion (digital payments) |
| Share of the population aged 16–74 who used internet banking in 2025, % | 61.00 | 70.71 | 79.28 | 30.97 |
| Cashless card operations, 2025 | 9.512 billion transactions worth UAH 7.157 trillion; share – 65.4% by amount | 15.55 billion – payment transactions; 45.34% – share of card payments; 7.23 billion – number of card transactions | 2.285 billion – number of payment transactions; 72.84% – share of card payments; 1.66 billion – number of card transactions | 1.986 billion – number of payment transactions; 76.31% – share of card payments; 1.516 billion – number of card transactions |
| Remote digital identification | 109.4 million electronic identifications – NBU BankID, over 23 million Diia users | eID – functions of the ID-card / e-residence permit and the AusweisApp application, effective since 2017 | 1.36 million Smart-ID users | National SSO-solution – ROeID; issuance of the digital ID-card CEI started on March 20, 2025, and nationwide implementation – from June 2, 2025 |

*Source*: compiled by the author based on data from the NBU and other open sources (Eurostat, 2025; Zholobetskyi, February 16, 2026; MordorIntelligence, February 9, 2026; Invest Lithuania, n. d.; Vorniceanu, 2025, April 4; ECB, n. d.; 2026, January 29; AusweisApp, n. d.; Roeid, n. d.).

According to *Table 3*, Ukraine demonstrates a very high level of digital banking usage among card users and rapid growth of BankID/"Diia". Lithuania stands out among the compared EU countries with the highest share of internet banking and developed digital identification. Germany has the largest absolute scale of digital/mobile payments, but the share of card payments is lower than in Lithuania. Romania is growing rapidly; however,

[6] EMI (Electronic Money Institution) – electronic money institution; PI (Payment Institution) – payment institution

in terms of internet banking and digital identification, it still noticeably lags behind Germany and Lithuania. Thus, Ukraine has already achieved a high degree of digital intensity in payments and remote identification, but it lacks harmonized statistics and full-fledged regulatory and institutional frameworks at the EU level. That is, technologically Ukraine is moving very quickly in certain areas, but for full integration into the European financial space, a deepening of security standards, open banking, eIDAS compatibility (European regulation), and consumer protection is needed.

## 3. Problems and challenges of the development of the digital financial services market in Ukraine

A thorough analysis of the current state of the DFS market in Ukraine has made it possible to identify the main problems and challenges that hinder the full development of the market and integration into the digital financial space of Europe.

The most systemic problem is *regulatory*. The digital financial services market in Ukraine is developing rapidly, but unevenly: standards for payments, open banking, remote identification, electronic money, and non-bank lending are advancing at different speeds. The National Bank of Ukraine (NBU) already explicitly sets the task of integrating into the EU financial services market and developing modern financial services, and the preliminary assessment of NBU's BankID for compliance with eIDAS requirements is an important step; however, the very fact of such an assessment shows that the harmonization process is not yet completed.

The second problem is *infrastructure resilience*. The war has shown that digital finance depends not only on banks and payment companies but also on electricity, communication, cloud resilience, cybersecurity, and the ability to quickly restore the network of terminals. In 2022, the number of payment terminals decreased to 359.2 thousand, but then the market recovered to 496.6 thousand in 2024 and 558.6 thousand in 2025. This to some extent demonstrated the resilience of the terminal system, however, it does not eliminate the risk of local disruptions, especially for frontline, rural, and de-occupied territories (National Bank of Ukraine, 2023, March 3).

Another important issue is *cybersecurity and fraud*. According to the NBU, the amount of losses from fraudulent card transactions in 2024 increased by 37% – to UAH 1.1 billion, and in 2025 it increased further by 24% – to UAH 1.4 billion. At the same time, the number of incidents decreased in 2025, but the average amount of a single fraudulent transaction increased to UAH 5,536 (National Bank of Ukraine, 2026, April 17). That is, the risks are becoming not so much more widespread as more costly for users and the system as a whole.

We should also note another set of issues in the form of *inclusion, trust, and competence*. A 2021 study by the NBU and USAID showed that the financial literacy index of Ukrainians was 12.3 out of 21 points – below

the basic OECD benchmark of 14 points. This means that the rapid growth of digital services is occurring against the backdrop of insufficient readiness of a significant part of the population to make informed product choices, manage risks, protect personal data, and understand the cost of credit. That is why the NBU has identified digital financial literacy and payment security as separate priorities in the strategy until 2030. (USAID, 2021).

Another problem can be singled out, which significantly complicates the task of researching such a rapidly developing digital services sector – *the insufficient transparency of certain segments of public statistics*. For payments, cards, and infrastructure, the NBU publishes detailed and high-quality series. In contrast, for digital lending, it is necessary to combine materials from annual reports, quarterly reviews of the non-banking sector, BankID statistics, and appendices to xlsx reviews. For academic research and the development of evidence-based policy, this is a significant limitation.

## 4. Prospects and development scenarios of the Ukrainian DFS market

The analysis of the current state of the digital financial services market in Ukraine, its comparison with the practices of EU countries, as well as the identification of key problems and challenges, indicate the presence of significant potential for further digital transformation of the financial sector, provided that institutional capacity, regulatory coherence, and technological resilience are strengthened. In this context, the *development of scenarios and the determination of the prospects* for the development of the DFS market acquire particular scientific and practical significance, as they make it possible to outline possible trajectories of its evolution, assess risks and opportunities, and form strategic guidelines for Ukraine's integration into the European digital financial space.

Based on the conducted analysis, it has been established that Ukraine has the greatest potential in five segments.

*The first* is digital payments for everyday consumption: POS/NFC payments already prevail in number and amount, and the share of tokenized cards has increased to 16.5 million in 2024 and 20.7 million in 2025, meaning that the digital wallet has effectively become a mass tool.

*The second* is remote identification as an "infrastructure linking" for all other financial services.

*The third* is digital lending to the population and small businesses, primarily at the intersection of non-bank financial companies, scoring, and remote onboarding.

*The fourth* is embedded financial services, that is, the integration of payments, lending, insurance, instalments, account opening, or other financial services directly into non-financial digital platforms (embedded finance) at the intersection of government services, marketplaces, telecom channels, and banking APIs.

*The fifth* is convergence with European eIDAS frameworks and the future open banking (National Bank of Ukraine, 2023, August 10).

In the context of post-war recovery, the rapid development of these segments can become a significant driver of growth for Ukraine's economy. The logic of the impact of digital financial services (DFS) on socio-economic development should be considered through the prism of the sequential deployment of digital interaction between the consumer and the financial system: from remote identification and digital onboarding to accessing payment, credit, insurance, and investment services. As summarized in *Figure 3*, it is precisely the combination of the availability of digital channels, reduced transaction costs, expanded financial inclusion, and simplified access to financing that creates a multiplicative effect, which promotes the activation of economic activity and creates prerequisites for the restoration of economic dynamics.

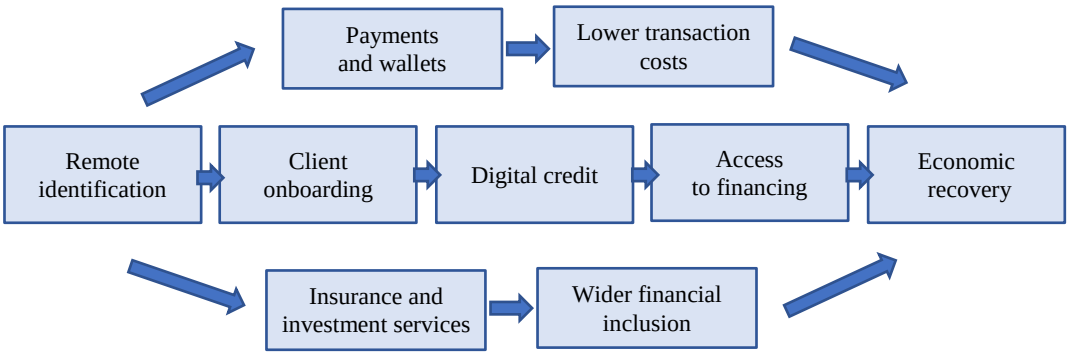


Figure 3. Mechanism of the impact of digital financial services on the recovery of Ukraine's economy

*Source*: created by the author.

In terms of the impact on economic growth in the future, several scenarios for the development of the DFS market in Ukraine can be considered.

*The inertial scenario* foresees the preservation of positive dynamics in digital payments and the further expansion of the use of remote identification systems, in particular BankID, but without a qualitative breakthrough in the field of digital lending, open banking, and full integration with the European financial space. Under such conditions, the main drivers of market development will remain payment services, state digital platforms, and consumer FinTech, while the potential of more complex financial products will be realized slowly and fragmentarily.

*The scenario of accelerated integration* can be implemented provided that the national regulatory environment actively aligns with EU requirements, open banking standards are introduced, the level of cyber resilience of the financial infrastructure is increased, and the quality statistical base for monitoring digital financial services is expanded. In this case, Ukraine will

have the opportunity to transition from a market model of fast and predominantly applied digital services to the formation of a full-fledged ecosystem of standardized, safe, and interoperable European-style digital finance.

*The reconstruction leap scenario* is associated with post-war economic recovery, within which digital financial channels can become a key infrastructure for carrying out social and compensation payments, microloans, insurance of war and property risks, reimbursement for damaged property, as well as financial support for small and medium-sized enterprises. This conclusion is based on the already formed role of "Diia", BankID, and digital payments during the war period as tools for ensuring the continuity of financial interaction between the state, businesses, and the population.

Regarding the development of effective steps in state policy, the following priority areas can be identified. *Firstly*, introduce a separate public statistical series on digital lending – by sales channel, type of product, groups of borrowers, and loan value. *Secondly*, accelerate the harmonization of BankID, the payment market, and future open banking with European standards. *Thirdly*, make payment security and digital financial literacy part of mass recovery programs, not just educational initiatives. *Fourthly*, to develop and maintain infrastructural *redundancy* – backup, duplicate, or alternative elements of digital financial infrastructure that ensure the continuity of payment, banking, identification, and other financial services in case of technical failures, cyberattacks, system overloads, or physical damage to the infrastructure, namely: backup power, communication, terminal networks, cloud resilience – as an element of financial security.

## Conclusions

The conducted study provides grounds to assert that in 2020–2025, the Ukrainian digital financial services market underwent a stage of intensive digital adaptation and gradually moved towards the formation of a basic digital financial infrastructure. During this period, cashless payments established themselves as the dominant form of card transactions, remote identification acquired the characteristics of a mass tool for access to financial and state services, and digital platforms, primarily Diia, became an important element of the everyday financial behaviour of the population. This overall confirms the proposed hypothesis regarding the presence of a basic infrastructural and behavioural foundation for the further development of the digital financial services market.

At the same time, the study confirmed that the mere fact of the widespread use of digital services is not a sufficient condition for realizing their strategic potential in post-war economic recovery and Ukraine’s European integration. For the further development of the DFS market, the priority should be not only expanding the client base but also moving towards responsible design of digital financial products. This involves the implementation by banks and FinTech companies of more understandable and

accessible interfaces, more transparent disclosure of the full cost of credit products, strengthening anti-fraud mechanisms (tools and procedures that help detect, prevent, and minimize fraud in digital financial services), the application of personalized risk limits, as well as wider use of digital identification tools and data to reduce the cost of onboarding and subsequent customer service.

A particularly promising direction is the development of comprehensive digital solutions that combine lending, insurance, and government services for the needs of small and medium-sized enterprises, relocated businesses, as well as households that are restoring housing, property, or sources of income. In this format, digital financial services can perform not only a service, but also a restorative function, providing faster access to financial resources, reducing administrative barriers, and increasing the targeting of government and market support.

The author connects the prospects for further research primarily with the development of a unified methodology for measuring digital lending in Ukraine, which would be suitable for international comparisons and would allow for an accurate assessment of the scale, structure, and risks of this segment. Equally important as a scientific task is the formation of approaches to assessing the contribution of digital financial services not only to increasing payment convenience but also to the growth of productivity, investment activity of SMEs, the speed of community recovery, and long-term financial inclusion. Solving these research issues will make it possible to move from merely recording the high dynamics of the market to a more complete, systemic, and internationally comparable measurement.

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