

***Economic Theory***

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**STABLECOINS AND SMART CONTRACTS
IN THE EUROPEAN ECONOMY AND INNOVATION
OPPORTUNITIES FOR COUNTRIES SEEKING
ACCESSION TO THE EUROPEAN UNION**

Abstract

This article examines the economic nature of stablecoins and smart contracts as key institutions of the European Union's digital financial architecture and as instruments for the transformation of the EU's monetary sovereignty. It highlights their role in the transformation of the European economy, the payment systems of Member States and candidate countries, modern financial intermediation, and innovative leadership. Stablecoins and smart contracts should be viewed not only as financial and technological innovations, but also as institutional mechanisms for shaping a new, modern digital architecture of the European economy, in which the programmability of digital payments and money, the tokenisation of assets and the algorithmisation of financial relations form the basis for innovative leadership and the transformation of the European economic space. A conceptual model is proposed for the integration of these instruments into the national economies of

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candidate countries, notably Ukraine, taking into account European regulatory approaches. Directions for the practical testing of stablecoins within the context of European integration for countries seeking accession to the European Union are substantiated. It is evidenced that, for Ukraine and other candidate countries, digital financial integration could become an additional tool for economic convergence and the acceleration of European integration, provided that national regulation is aligned with European standards.

Key Words:

digital economy, European economy, European integration, Eurozone, financial architecture, innovative leadership, quantum logic, smart contracts, stablecoins.

JEL: E42, E44, E52, G21, F15, O33.

4 formulas, 21 references.

Problem Statement and Literature Review

The era of global uncertainties in the European economy and the turbulence of the world order is shaping a new paradigm of economic relations within the European Economic Area, in which stablecoins and smart contracts serve not only as technological innovations but also as institutional mechanisms for transforming innovative leadership. Against a backdrop of macro-financial instability, geopolitical challenges and war, the issue of integrating such instruments for EU candidate countries is taking on strategic importance.

Eichengreen & Viswanath-Natraj (2022), Mazzucato (2018) and Perez (2002) have examined the conceptual and theoretical foundations of the nature of stablecoins and smart contracts. In particular, Eichengreen & Viswanath-Natraj (2022) explore the economic nature of stablecoins, along with the associated political and regulatory challenges. The theoretical foundation for the analysis of technological and financial transformations is provided by the works of Mazzucato (2018) and Perez (2002), which focus on the role of innovation, financial capital and technological revolutions in the structural transformation of the economy. Vanhoudt (2026), Bechtel et al. (2021), Krogstrup (2026), Martino et al. (2026) and Santner & Taudes (2025) analysed the difficulties of introducing stablecoins and the digital euro, together with the specific features of their regulatory frameworks.

The risks to the EU economy, the new model for the functioning of fintech, and adaptation to cyber threats in candidate countries are successfully outlined by Sébastien de Brouwer, Deputy Director-General of the EBF (Sulzhenko, 2026). The studies on asset tokenisation and digital payments by Philip Sandner, a German economist and one of Europe's most renowned researchers in the blockchain

economy, who developed the modern concept of a programmable European economy, are quite insightful (Sandner et al., 2022; Bechtel et al., 2021). The views of Krogstrup (2026), who studies the financial stability of the European economy, the role of stablecoins and the risks to the Eurozone's monetary policy, are also worthy of attention. We should mention the interesting and conceptually sound academic perspectives of Sharov (2026) on the development of a mechanism for Eurozone enlargement.

The aim of this article is to establish a theoretical and methodological framework for the application of non-linear matrix logic of innovative leadership in the field of European economic research, and to identify areas for its practical implementation in the context of European integration processes for candidate countries seeking accession to the European Union.

Methodology

The methodological framework of the study is based on the following approaches: a systems approach – for analysing stablecoins and smart contracts as elements of a unified EU digital financial ecosystem; an institutional approach – for examining the transformation of financial institutions, trust and financial intermediation; neo-Schumpeterian – to substantiate the role of digital financial innovations in shaping innovative leadership. Furthermore, a comparative regulatory analysis was applied to compare the models of the EU and candidate countries, including Ukraine, Moldova, Albania and Serbia. In the field of FinTech, econometric modelling was utilized, whilst scenario analysis was employed to assess the impact of stablecoins on the economic system and financial stability, as well as the variability of European integration processes for Ukraine.

Research Results

Historically, every country's economic system has served not only as a reflection of that country's technological development, but also as a key driver of it. Each technological paradigm has shaped its own economic model: from the bank credit of the industrial era to the financial markets and digital platforms of the sixth technological paradigm. In the current climate, the signs of a transition to the seventh technological paradigm are becoming increasingly evident, questioning the fundamental tenets of classical economic theory. The quantum technological leap into the seventh paradigm shifts the economic segment from the primary driver, handing the lead to "talentism" – the innovative probabilistic modelling and making of unconventional decisions in the face of the uncertainty of the modern world.

Elon Musk, Larry Ellison and John McCarthy are the three most prominent figures representing the quantum leap into the seventh technological paradigm. Although it is not yet fully formed but rather in its infancy, it is represented not by individual sectors but by the core of breakthrough technologies, corporations and research centres that are already utilising them. The seventh technological paradigm

is taking shape within states that possess a strong scientific, financial and institutional base. These include the US, China and the Republic of Korea. Their role lies both in providing public funding for research and in fostering a regulatory environment conducive to experimental technologies.

It is a pity that the countries of the European Union, guided by the linear theories of liberalism and neoclassicism (where the consent of all 27 member states, without exception, is required to lay the foundations for unconventional, modern, innovative experiments), have become stuck between the fifth and sixth technological paradigms.

The institutional and scientific basis of the seventh technological paradigm is currently being shaped by narrow yet extremely powerful cutting-edge technological systems that combine quantum, cognitive and biotechnological innovations. These include quantum logic and quantum computers, a new type of artificial intelligence (AGI), biotech, fintech, quantum algorithms and the quantum internet, innovative public-private partnerships, neurotech, neuroscience, robotics, human-machine systems, nanotechnology, advanced materials and the energy systems of the future. Consequently, this paradigm is still in the formation stage and does not yet have a fully defined sectoral structure. Corporations – and, by extension, the countries that provide them with the fundamental conditions – which are the first to integrate these technologies into transnational manufacturing, finance and public administration will gain long-term competitive advantages in the global economy.

Modern economic theory increasingly encounters a paradox whereby classical models, based on deterministic assumptions, are unable to adequately describe the non-linearity and uncertainty of government decisions. In this context, the quantum paradigm of thinking – which originated in physics but is rapidly gaining ground in the fields of economics and finance – is becoming increasingly relevant (Haven & Khrennikov, 2017).

In modern scientific discourse, growing attention is being paid to the integration of the principles of quantum logic into socio-economic systems. Traditional economic science is based on classical macroeconomic determinants that assume linearity, cause-and-effect certainty and the stability of parameters. However, in today's world, characterised by high uncertainty, dynamic crises and global economic fluctuations, such logic proves insufficient. Within this context, there is a need to utilise quantum logic as a new cognitive-analytical paradigm, enabling us to understand the nature and form of the European economy through the prism of non-linear, stochastic and interrelated phenomena and processes.

Over the past decade, quantum technologies in the European Union have moved beyond being a niche field exclusively for physicists and have become part of policies on digital sovereignty, cognitive fintech and technological competition. The key document defining the EU's current direction in the quantum field is the Quantum Europe Strategy, presented by the European Commission in July 2025. Its objective is to make the European Union a global player in the field of quantum technologies by 2030 (European Commission, 2025).

The quantum logic of innovative leadership crystallises a methodological framework for modern economic systems, capable of accounting for the complexity, uncertainty and interconnections of global economic and political transformations,

hybrid warfare and the contemporary European economy. The use of quantum paradigms enables the creation of dynamic, probabilistic models of economic policy for EU countries, which significantly exceed the capabilities of classical deterministic methods and open up new prospects for scientifically grounded European integration processes for Ukraine.

Classical economic theory regards the European economy as a historically determined form of organisation of inter-state public authority, the material basis of which is the economic partnership between the countries of the European Union. Consequently, any fundamental change to the economic structure of the European economic area (such as Brexit or the stance of European countries that have not joined the eurozone) inevitably creates tension between the old form of this economy and the new conditions for the creation or reproduction of value in individual countries.

The sixth and seventh technological levels, within which the progressive segment of the global corporate sector currently operates – including the Netherlands – signify a mismatch between the institutional form of the national economy and the actual dynamics of the global and transnational economy.

In the digital, service-based and networked economy, value is fragmented, transactions are instantaneous, and sources of income are virtually dispersed. This creates a structural disconnect between the national economies of the Eurozone and the corporate sector of the trans-European economy – which is a key symptom of the current crisis facing the European economy.

In countries applying for EU membership, as well as in the Netherlands, the classical economy encounters a variety of challenges:

- turbulence in the global order and hybrid wars, which are accelerating the modernisation of the military economy;
- the emergence of technology corporations;
- uneven distribution of generated added value;
- disruption of value production chains;
- high levels of virtualisation and the shadow economy;
- institutional distrust of public authorities;
- a fragmented fiscal culture.

The experience of the Netherlands demonstrates that candidate countries do not find themselves in a phase of global deficit, but rather in a phase where the old form of their national economic foundation is being exhausted.

In light of European integration and the transition to the seventh technological level, we believe it is advisable to recognise that the public economic space of candidate countries, including Ukraine, will either be transformed through financial and economic innovation or degenerate into a repressive mechanism for the centralised extraction of a portion of the national product's value, falling far behind corporate finance and modern global corporate fintech.

Global trends in the European economy and the opportunities for European integration available to those seeking EU membership now require concrete action from these states. Nowadays, the focus is not on what the European Union will offer us, but on what we, as Ukraine for example, could offer EU member states to accelerate our accession to the European political and economic community.

Option one is the introduction of the euro in candidate countries and drawing on Estonia's experience to accelerate accession to the European Union. This is a relatively swift and groundbreaking option. Considerable work is already underway in Ukraine towards joining the Single Euro Payments Area (SEPA) (Verkhovna Rada of Ukraine, 2026). Many academics are debating the feasibility and practicality of both Ukraine and other candidate countries joining SEPA, as well as the transition of all EU member states and candidate countries to the euro (Sharov, 2026). However, in our view, such steps would significantly restrict national governments' ability to use fiscal and monetary instruments to accelerate GDP growth. This raises the question: would Poland, for instance, have managed to join the ranks of the world's 20 largest economies had it abandoned the zloty and adopted the euro in 2010? In other words, this option is more suitable for smaller European states, in particular Moldova and Albania.

Option two is to pursue the country's own national path to European integration and build a cutting-edge, modern, innovative economy at the seventh technological level, which would prompt the European Union to invite us to act as drivers for the conservative European economy, which is stuck between the fifth and sixth levels. And it is precisely the introduction of stablecoins and smart contracts as contemporary elements of innovative leadership that could act as a multiplier for the seventh-level economies of candidate countries. Indeed, the present situation shows that even in the midst of war, Ukraine's national digital platform 'Diia' and its military drone developments are unrivalled anywhere in the world.

The European economy remains resilient, yet it operates in conditions that are often more fragmented, complex and burdensome than those faced by some major international competitors. That is precisely why the debate is no longer confined to efficiency, security and stability as such, but centres on whether the regulatory and supervisory framework allows EU countries to fund Europe's priorities to a sufficient extent and with the necessary speed.

Quantum logic, digitalisation and innovation – which today are prerequisites for innovative leadership – require the European economy to undergo modern transformations in the face of the uncertainties and turbulence of the global order. These include artificial intelligence, tokenisation, stablecoins, instant payments and the digital euro. The opportunities here are immense: faster production and supply chains, lower costs, a better customer experience, programmable finance, more efficient settlement and clearing, and the overall strengthening of Europe's strategic autonomy in the field of payments. However, innovation also raises concerns about governance, cybersecurity, interoperability and financial stability. The ECB has taken the digital euro project to the next stage, whilst at the same time defining a broader strategy in the field of payments, where it has begun to exhibit a growing interest in tokenised financial markets and settlements in central bank money. Meanwhile, the European Commission explicitly regards digitalisation, tokenisation and the emergence of stablecoins as key factors in its efforts to enhance the competitiveness of the European economy (European Commission, 2020).

Reflecting on the experience of the Netherlands, we may conclude that the introduction of stablecoins and smart contracts into the economic landscape depends on the structure of the economic system and the level of digitalisation of the economy. After all, the Netherlands is demonstrating a cautious European approach, focused

on integration with the digital euro, in contrast to Singapore, which is establishing itself as a global fintech hub where stablecoins and the tokenisation of assets play a key role. In candidate countries, it is precisely the combination of these models that may, in the long run, shape a new architecture for digital finance in the public sphere.

The role of stablecoins in payments, cross-border trade and blockchain finance is “expanding”, despite their as yet limited market share. Existing payment systems in both the European Union and the US, which incorporate stablecoins and smart contracts, are already “fast, cheap and reliable”. In the short term, EU and US regulations prohibiting stablecoins from generating income mean that they are unlikely to replace traditional domestic deposits on a large scale. For the banking sector, the risk of significant changes appears limited at this stage. The impact of innovative fintech and stablecoins within the country’s financial landscape on the banking sector currently appears to be “limited” at this stage of their implementation. Meanwhile, the traditional banking sector may face increased competition and a gradual loss of market share as the stablecoin and tokenised real-world assets (RWA) sector increases its market capitalisation.

Innovative leadership undoubtedly implies a rise in the popularity of stablecoins and tokenised RWAs – that is, traditional or physical financial assets represented on the blockchain in the form of tokens. This could put “pressure” on the banking sector and may lead to a withdrawal of deposits, alongside a reduction in banks’ lending capacity. The issue of whether to regulate stablecoins has become one of the most pressing for both the crypto industry and the banking sector. Concerns that yield-bearing stablecoins could erode banks’ market share have become a major obstacle to the passage of the CLARITY Bill in the US Congress (Krause, 2026).

The CLARITY Act (Digital Asset Market Clarity Act) is one of the key contemporary US bills aimed at the systematic regulation of the crypto-asset market. It can be described as an attempt to create a comprehensive “financial architecture” for digital assets, similar to that of traditional financial markets (TraFi). The main idea is to eliminate the legal uncertainty that has held back the development of the crypto market for years, as well as to implement a modern reform which, at present, will be the most significant reform of the global financial market since the regulation of derivatives and fintech.

The CLARITY Act represents an effort to «integrate the crypto economy into the traditional financial system» by creating a hybrid regulatory model that strikes a balance between innovation and oversight. However, some representatives of the crypto industry and market analysts warn that if the CLARITY Act is not passed, it could pave the way for stricter regulatory restrictions from politicians and officials hostile to the crypto market in the future, and create unnecessary chaos in the innovative fintech sector.

Euro-backed stablecoins account for only a fraction of the total market. Although the global supply of stablecoins stands at nearly \$300 billion, euro-denominated stablecoins accounted for just \$620 million, according to data published by the Bank of Italy in May 2026; in other words, dollar-pegged tokens significantly dominate the market (Angelini, 2026).

A consortium of nine European banks, including heavyweights ING (INGA. AS) and UniCredit (CRDI.MI), announced in May 2025 the creation of a new

company to launch a euro-denominated stablecoin – a move they hope will help counter US dominance in the digital market. “This initiative will provide a genuine European alternative to the US-dominated stablecoin market, promoting Europe’s strategic autonomy in payments,” said representatives of the banks. The Amsterdam-based company is a sign of the banking sector’s growing openness to digital markets. Although the ECB remains sceptical about stablecoins, citing policy and stability risks, the new company is expected to launch its stablecoin in the second half of next year.

A host of leading US financial firms are preparing to launch their own dollar-backed cryptocurrencies, following President Donald Trump’s signing of a bill regulating stablecoins, a move that could further cement US hegemony.

The use of this type of cryptocurrency – designed to maintain a stable value and backed by traditional currencies – has surged in recent years, particularly amongst crypto traders who are moving funds into and out of more volatile tokens. Furthermore, they are also used for mainstream digital payments and cross-border transactions.

Let us return to the initiative launched by nine European banks. According to them, the aim is to create a token that can be used for fast and low-cost payments and settlements, even though the European Central Bank has expressed scepticism regarding stablecoins. Moreover, some commercial banks are opposed to the introduction of a digital euro, fearing that it will drain their vaults as customers transfer cash from banks to a secure wallet guaranteed by the ECB.

Besides ING and UniCredit, other banks participating in the new company include Banca Sella (BSEL.HT), KBC (KBC.BR), DekaBank, Danske Bank (DANSKE.CO), SEB (SEBa.ST), Caixabank (CABK.MC) and Raiffeisen Bank International (RBIV.VI). They have stated that others may join the initiative, and the company’s chief executive will be appointed shortly.

A recent report by Deutsche Bank highlighted that developing market countries, in particular, are introducing US dollar-backed stablecoins to replace local deposits and cash. «This has created a global monetary dilemma, where countries must adopt stablecoins or risk being left behind. Europe is under significant pressure,» the report states (Laboure & Siazon, 2026).

SG-FORGE, the cryptocurrency division of Societe Generale (SOGN.PA), launched a euro-backed stablecoin in 2023, although it has not gained widespread adoption and, according to its website, only 56.2 million euros (66 million US dollars) are in circulation. One of the French banks also launched a US dollar-pegged stablecoin earlier this year, with a circulation of just \$32.25 million (Howcroft, 2025). However, in reality, few banks have launched this type of cryptocurrency. The sector remains dominated by non-bank players such as Tether.

The EU’s technology policy is not limited to fostering and regulating the conditions for the seventh technological level and the latest fintech. It also involves building a European framework for secure communications in the digital space with a «quantum security layer». To this end, the European Quantum Communication Infrastructure (EuroQCI) initiative was launched (European Commission, n.d.). This is a framework document for the integration of stablecoins, the digital euro and smart contracts into the European economy, as it requires a transition from classical cryptographic algorithms for information security to post-quantum cryptography (PQC).

At the end of June 2026, the European Parliament's Committee on Economic and Monetary Affairs approved a package of measures concerning the single currency, which provides for the creation of a digital euro (CBDC). This development represents a significant step for the global financial market, particularly given that the US is currently actively implementing bans on the use of national digital currencies. The digital euro is a new electronic means of payment, which is planned to be free of charge and accessible to every citizen. Like traditional cash, this currency will be valid throughout the Eurozone, ensuring a high level of security and confidentiality. The project forms part of a series of measures aimed at strengthening Europe's strategic autonomy. The CBDC will function as a digital form of central bank money, issued and maintained by the ECB. In this regard, the new currency is intended to complement, rather than completely replace, existing banking services and paper money, as this instrument is being created as an additional alternative for users. The digital euro will operate alongside cash, which will retain its status as legal tender and continue to co-exist with both the official cryptocurrency and private electronic payment systems.

The digital euro will become the single payment solution for the whole of Europe, simplifying transactions between sellers and buyers. It will further reduce dependence on foreign payment systems, boost competition in the market and help businesses cut the cost of payment services.

Provided there are no objections at the plenary session, lawmakers are set to begin negotiations with the European Council and the European Commission in 2026, with a goal of finalising the package of measures by the end of this year. In addition, the European Central Bank intends to launch a 12-month pilot project for the digital euro in the second half of 2027, with a planned full-scale launch in 2029, and is also awaiting the Parliament's adoption of its final position.

Overall, for ordinary users, the introduction of the digital euro will not bring about any radical changes, as this instrument will simply be another currency alternative, which some may find more convenient. However, for crypto investors, the situation is less clear-cut. The new asset may take a certain share of the market, particularly from stablecoins, as some users may switch to a centralised, state-regulated initiative. Nonetheless, a significant outflow of liquidity remains doubtful, as the crypto sector and stablecoins have been around for a long time and have already established a firm foothold in the market.

The key point in this process is not direct competition between the digital euro and stablecoins, but rather the different niches they cover. The digital euro is being developed primarily as a retail payment instrument for everyday transactions within the Eurozone, serving as an equivalent to a bank card or cash, rather than as a means for crypto trading, the DeFi sector or large-scale international transfers.

In early 2026, the DAC8 Directive came into force in the EU, introducing the automatic exchange of information on crypto-assets between Member States. The new regulatory rules cover the activities of crypto exchanges, crypto wallet providers, and companies providing services to EU residents. Furthermore, the ECB has supported an initiative to transfer supervisory functions for the crypto market to the European Securities and Markets Authority (ESMA), which involves the creation of a single supervisory body to replace national regulators.

The full-scale introduction of the digital euro is a long-term prospect, spanning several years, during which the financial system may undergo significant changes. The

main focus of this initiative is shifting towards state regulation, where the integration of CBDCs serves as a tool for enhanced control over users' transactions. On the one hand, this ensures full compliance with legislative standards and transparency; on the other, it imposes serious restrictions on investors who prioritise the privacy of their financial flows.

The launch of the digital euro represents an attempt by the traditional banking system to seize the initiative from fintech companies and preserve its sovereignty. For investors, this means the market is being clearly divided into two segments. The first is a fully state-controlled space for payments; the second is a decentralised crypto market for capital management and protection against inflationary risks.

Increased monitoring via CBDCs, alongside the implementation of the DAC8 and MiCA directives, definitively reinforces the European regulators' commitment to eliminating anonymity. The main question is whether the ECB will be able to offer businesses and users genuine economic incentives beyond regulatory requirements, as the project's success will depend on the practical convenience of the interfaces and the speed of transactions in everyday life. Given the experience of testing digital currencies in other regions, the European regulator will have to strike a balance between strict financial oversight and maintaining the appeal of the new instrument for the average citizen.

The digitalisation of Europe's financial systems is shaping a new paradigm of economic relations, within which the digital euro, stablecoins and smart contracts act not only as technological innovations but also as institutional mechanisms for market transformation. Given the macro-financial instability, geopolitical challenges and the war, the issue of integrating such instruments takes on strategic importance for candidate countries, including Ukraine.

A promising area for further research is modelling the impact of digital assets on the financial stability of candidate countries and developing hybrid models of interaction between traditional finance and DeFi. The EU has not yet established its own fully-fledged stablecoin ecosystem, which highlights its dependence on dollar-denominated assets. Stablecoins in Europe currently serve as infrastructure for financial markets rather than for the real economy. The ECB explicitly states that they could siphon off bank deposits and become a new channel for financing EU sovereign debt, particularly in the event of large-scale adoption. However, stablecoins and smart contracts already constitute the "invisible infrastructure" of financial flows in Europe. This is confirmed by the market's dynamic growth from \$1 billion (2018) to approximately \$250–300 billion (2025). According to forecasts by a newly formed consortium of banks, the volume of smart contracts and stablecoins will grow to \$2 trillion by 2028. This represents a potential tenfold increase over 3–4 years (RWA.io, 2025).

We propose implications for innovative leadership for countries applying for membership of the European Union, taking Ukraine as an example. If European ratios are extrapolated to candidate countries, even a 10 per cent digitalisation of the financial sector in such economies would create a new financial channel comparable in scale to a portion of the government bond market or international aid. To assess the potential impact of stablecoins on Ukraine's banking system, an econometric approach was applied, based on modelling functional relationships between key macro-financial variables. The empirical basis consists of aggregated monetary and

credit statistics from the National Bank of Ukraine. The model was constructed based on the following assumptions:

- stablecoins act as a partial substitute for bank deposits;
- their introduction affects the credit multiplier;
- there is a direct relationship between the deposit base and the financing of public debt.

Indicative aggregates for Ukraine based on data from the National Bank of Ukraine:

- money supply (M3): ≈ 3.3 trillion UAH;
- household and business deposits: ≈ 2.4 trillion UAH;
- banks' loan portfolio: ≈ 1.1 trillion UAH;
- volume of government bonds held by banks: ≈ 0.9 trillion UAH;
- key policy rate: 13–15% (variable).

The specification of the basic econometric model, which allows us to simulate the extent to which stablecoins can act as a partial substitute for bank deposits, is structured as follows.

The functional relationship for deposits in the Deposit Substitution Model is defined as:

$$D_t = \beta_0 + \beta_1 Y_t + \beta_2 r_t + \beta_3 S_t + \varepsilon_t \quad (1)$$

where D_t – volume of deposits in the banking system; Y_t – real income (proxy – GDP); r_t – interest rate; S_t – volume of stablecoins in the economy; $\beta_3 < 0$ – the substitution effect parameter.

In order to adapt the model to Ukraine's conditions, the parameter has been calibrated on the basis of international estimates, enabling us to formulate three scenarios: conservative, moderate and stress. Based on European and BIS estimates, we calibrate the coefficients as follows:

- $\beta_3 = -0.25$ – conservative scenario;
- $\beta_3 = -0.45$ – moderate;
- $\beta_3 = -0.70$ – aggressive, or stress.

The scenario analysis of the impact of stablecoins boils down to:

– Scenario 1: low adoption rate (5%). The volume of stablecoins amounts to approximately 120 billion UAH. Deposit losses are estimated at between 30 and 84 billion UAH, corresponding to 1–3 per cent of the deposit base. This level does not pose systemic risks and can be regarded as an experimental phase in the digitalisation of the financial and banking sector.

– Scenario 2: moderate adoption rate (10%). The volume of stablecoins reaches 240 billion UAH. The reduction in deposits amounts to 60–168 billion UAH, or 5–7 per cent of banking resources. At this stage, restrictions on lending arise, along with increased competition for liquidity and structural changes in banks' balance sheets.

– Scenario 3: stress scenario, or aggressive scenario – high level of adoption (25%). The volume of stablecoins stands at 600 billion UAH. Deposit losses amount to up to 420 billion UAH, corresponding to approximately 17 per cent of the deposit base. This indicates a systemic impact on the banking sector, the need for banks to change their business models, and the potential risk of financial destabilisation without regulatory intervention.

Let us now examine the impact of stablecoins and smart contracts on the credit channel of the economy, that is, how they affect the credit multiplier. The relationship between lending and the deposit base is described by the following function:

$$L_t = \gamma_0 + \gamma_1 D_t \quad (2)$$

where $\gamma_1 \approx 0.45$ reflects the resource transformation ratio.

In a moderate 10 per cent implementation scenario: a reduction in deposits of 108 billion UAH leads to a decrease in the loan portfolio of approximately 48 billion UAH, or 4–5 per cent of the lending market.

Banks play a key role in financing the state through the government bond market; consequently, there is a direct correlation between the deposit base and the financing of public debt. This correlation is described by the formula:

$$B_t = \delta_0 + \delta_1 D_t \quad (3)$$

where $\delta_1 \approx 0.35$.

In the event of a loss of 108 billion UAH in deposits, demand for government bonds would fall by approximately 38 billion UAH. This could lead to a rise in yields on government bonds, an increase in the cost of public debt and a rise in the fiscal burden. Taking into account the positive and negative consequences of expanding the scope of stablecoins, we propose the introduction of compensatory measures, which are presented in the integrated model below.

Should stablecoins be integrated into the banking system, a new source of profit emerges:

$$P = P_{trad} + P_{digital} \quad (4)$$

where P – total profit, P_{trad} – traditional profit, $P_{digital}$ – revenue from digital financial services.

Empirically, new digital revenue streams are estimated to be capable of offsetting 30–50% of the losses in the deposit margin. The results obtained allow us to draw the following conclusions to summarise the modelling findings:

1. The introduction of stablecoins up to a level of 10% is macro-financially manageable.
2. A threshold of 20–25% represents an aggressive environment and creates the conditions for a systemic transformation of the banking sector.
3. The most effective approach is an integration model in which banks act as active, innovative participants in the digital financial and banking ecosystem and are prepared to implement the compensatory measures set out in the integration model.

To minimise risks and maximise benefits, it is advisable for countries applying for EU membership to introduce a national stablecoin (denominated in the applicant country's currency), integrate banks into the fintech ecosystem as operators and custodians to maximise compensatory effects, ensure real-time regulatory oversight, and align policy with European standards.

Econometric analysis demonstrates that stablecoins can act as both a risk factor and a driver of innovative development within the banking systems of candidate

countries as they prepare for accession to the European Union. Their impact is determined not so much by the scale of their adoption as by the nature of their integration into Europe's financial and banking system. Given the right institutional framework, they have the potential to act as a catalyst for the innovative modernisation of the financial sector and to accelerate European integration for candidate countries.

Conclusions

The study has shown that the current digital transformation of the European economy is entering a new phase of development, in which innovation is no longer focused on individual financial products or payment technologies, but on the very institutional nature of economic relations. Within this scope, stablecoins and smart contracts serve as catalysts for the transition from the digitalisation of financial processes to the emergence of a programmable economy, where financial flows, property rights, contractual relationships and regulatory mechanisms are integrated into a single algorithmic environment. It is precisely this transformation that defines a new stage in the evolution of the European economic model.

A theoretical analysis of these processes allows us to formulate the statement about the emergence of a new type of economic coordination, based not on administrative or market regulation in their classical sense, but on digital-institutional governance, implemented through programme code, algorithms and decentralised trust mechanisms. Under these conditions, the smart contract takes on the characteristics not only of a technological tool but also of a new form of economic institution that ensures the automated enforcement of economic rules, whilst the stablecoin transforms from a digital payment asset into a functional element of a new monetary infrastructure.

Simultaneously, the research findings indicate that the European Union's strategic advantage lies not so much in the speed of implementing digital financial technologies as in its ability to integrate them into a coherent regulatory ecosystem that strikes a balance between innovation, financial stability, the protection of economic sovereignty and the unity of the internal market. It is precisely this combination of technological innovation and forward-looking regulatory frameworks that shapes the competitive model of European digital development, which is increasingly becoming a global standard.

For countries seeking accession to the European Union, this signifies a fundamental shift in the logic of integration processes. Whereas economic convergence was previously largely equated with the harmonisation of legislation and macroeconomic parameters, institutional compatibility of digital economic systems is now becoming the defining criterion. Consequently, the success of European integration will increasingly depend on states' ability to develop their own digital financial infrastructure in line with the European Union's architecture, ensuring the interoperability of payment platforms, digital identification, tokenised assets, programmable financial services and automated mechanisms for enforcing legal regulations.

In this context, candidate countries, including Ukraine, have a unique "window of opportunity". The absence of the inertia associated with outdated digital solutions, coupled with the simultaneous reform of the financial system, creates the conditions

for building a model of what is known as an institutional digital quantum leap, where the latest financial technologies are introduced not through the gradual modernisation of existing mechanisms, but through the creation of a fundamentally new architecture for digital finance, aligned with European standards. Using this approach, stablecoins and smart contracts for candidate countries may become less of an alternative to the traditional financial system and more of its next stage of development, integrated into public administration, financial intermediation, the investment process, and, most importantly, acting as a catalyst for European integration.

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