EXPANDING FINANCIAL INCLUSION THROUGH BLOCKCHAIN TECHNOLOGY

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Main objective

Analysis of the financial system in the Republic of Moldova, identification of the problems it faces and formulation of solutions to increase the efficiency of the financial system in the Republic of Moldova by applying blockchain technology.

Financial systems:

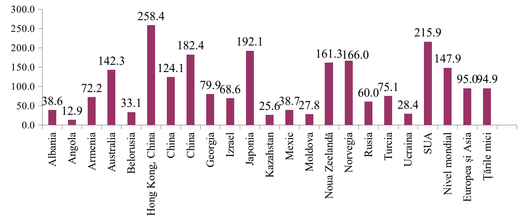
- provide and manage the payment system for the exchange of goods and services,
- offer the mechanism for collecting savings for the purpose of financing large-scale and indivisible investment projects,
- offer the means of transferring economic resources over time and between geographical regions and industries,
- offer the way to manage uncertainty and control risks,
- produce price information that helps to coordinate the decentralized decision-making process in various sectors of the economy,
- provide the way to work with asymmetric information.

The energy crisis, the pandemic effects and the military conflict in Ukraine have produced major changes on the global economy and financial systems.

Features of blockchain technology:

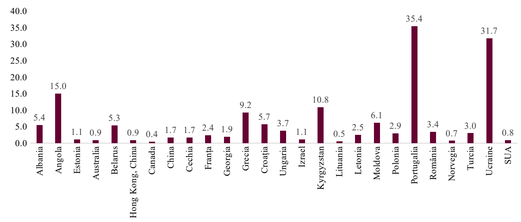
Decentralisation	The core feature of blockchain technology. Means that blockchain does not on a centralised node, data can be recorded, stored and updated in a distributed way. Each new block contains the hash of the previous block.
Transparency	Every data record in the blockchain network is transparent to each node and during data updates, what increases the level of trust.
Access	Public. Most blockchain systems are open to any user, the data record can be publicly verified, and any user can also utilize blockchain technology to create any application.
Autonomy	Thanks to consensus, each node in the blockchain system can send or update data securely, any changes being visible to other users.
Stability	All records will be kept forever and cannot be changed unless someone can take control of more than 51% of the node at the same time.
Anonymity	Blockchain technology solved the problem of trust between two nodes, therefore the transmission of data or even a transaction can be anonymous, only knowing the key of the person with whom the transactions are completed.

Analysis of the financial system from the perspective of blockchain technology



Domestic credit to the private sector as % of GDP, 2021

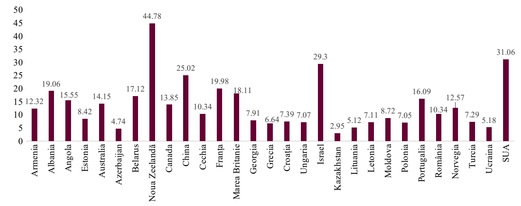
Share of non-performing loans in total loans, %, 2021



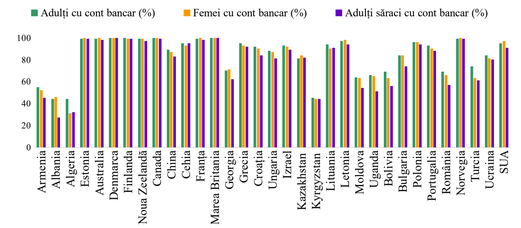
Dynamics of the share of non-performing loans in the total loan portfolio in the banking system of the Republic of Moldova, %

	2017	2018	2019	2020	2021	2022
Non-performing loans in the total loan portfolio	18,38	12,54	8,49	7,38	6,14	6,44

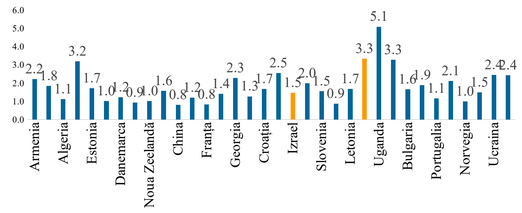
Bank Z-score, 2021



Financial inclusion measured by number of bank account holders, %, 2021



Ratio of general banking expenses to total assets, %, 2021



Arguments for modernisation of the financial services in the Republic of Moldova:

- user/consumer expectations drive digital innovation in any domain, especially in the financial system;
- outdated technology is the major challenge faced by companies specialized in financial services when implementing or developing digital money management tools;
- a respond to the declining use of physical cash, which can negatively affect accessibility, security and efficiency of the national payment system, is needed.

New financial services, based on blockchain technology, smart contracts and artificial intelligence, will allow users to benefit from:

- reduced transaction costs in terms of time, resources and associated administrative expenses;
- faster transactions;
- real transparency at every stage of the transaction;
- increased financial inclusion;
- improved transaction efficiency;
- risks minimisation through automation based on smart contracts (elimination of the potential human error);
- various facilities for cross-border or EU payments.

Priority for implementation of blockchain technology in segments of the financial system of the Republic of Moldova (5 – highest priority):

Sector	Implementation of blockchain technology in the nearest future (<3 years)	Implementation of blockchain technology in the near future (>3 years)
Banking activity	5	5
Accounting	2	4
Loans and credits	4	5
Trading of shares and hedge fund	4	5
Exchanges, crypto exchanges	2	3
Crowdfunding	5	5
Insurance	3	4
Wills and legacies	4	5
Charity	5	5

Conclusions and recommendations

In order to prove its usefulness and viability (its ability to develop over time) blockchain technology among the firsts, should offer new solutions for existing traditional services: management of trading accounts, both classic (bank accounts) and digital/electronic/cryptocurrency; payment services based on new blockchain technologies and artificial intelligence; savings accounts; investment services; credit services; insurance.

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