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CRYPTOCURRENCIES – THE KEY TO THE FUTURE OF DIGITAL ECONOMY

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Abstract
Over the last decades, the money market has become more and more complex and diversified bringing about both greater opportunities and risks for investors. Thus, the investment environment has significantly changed lately, and technology has been playing a major role in this conversion. In time cryptocurrencies have been given greater and greater attention by investors and mass-media, due to the significant increase in their prices and their possibility of providing an alternative to traditional coins and investments. This has led to an increase in demand and interest for cryptocurrencies such as Bitcoin, Ethereum and Litecoin, and has made them be one of the most popular and innovating active financial assets at present. The key factors influencing global cryptocurrency market increase are the increasingly greater demand of expertise in business, limited cash-paying systems, increase in payment demand in developing countries, improvement of data security and increase in market size.

Keywords: *cryptocurrency; NFT; investment; cryptocurrency market; blockchain technology; recognition*

JEL Classification: *M41, M13, M14, F18*

I. INTRODUCTION

Along with the rise of Bitcoin, cryptocurrencies emerged in 2009 as a new financial paradigm distinct from traditional financial institutions and centralized middlemen. Blockchain technology, a distributed ledger that records transactions across multiple nodes, supports cryptocurrencies. This eliminates the need for a centralized authority, like banks or other financial middlemen, while also offering transparency and security. The fundamental characteristics of cryptocurrencies include the use of cryptographic techniques to verify active transfers, regulate the creation of supplementary units, and guarantee the integrity of transactions. In a short time, blockchain technology has spread and disrupted numerous industries (Sorici et al., 2021; Cosmulese, 2021).

Despite its fast increase, regulating authorities have not succeeded in catching up with this innovation in terms of understanding it, in providing appropiate juridical and regulating frameworks. Regulating authorities and political decision-makers have tried to understand and develop adequate regulating approaches to cryptocurrencies, tokens and distributed ledger technologies (Dragomir & Alexandrescu, 2017). Consequently, juridical and regulating incertainties have led to significant obstacles against blockchain innovation. The unique characteristics of cryptocurrencies and of blockchain technology require regulating approaches, especially in the European context, where the necessity of harmonizing regulations is palpable.

Cryptocurrencies exist in the digital world only. That is why, and due to its neutrally associated conotations, the term of " digital coin " is rather generally preferred over that of " virtual coin". Actually, "virtual" stands for negativity, as it means something that is "apparently real", when it refers to a coin which is stored in "digital" or "electronic" environment. Cryptocurrencies work within decentralized payment networks without being monitored by a central administrator or a supervisory authority. This is a completely new functioning of a monetary settlement system, totally independent from government intervention. The state does not have the power of influencing the cryptocurrency functioning system, as the latter one is being maintained by the users themselves, each one being equal and self-sufficient.

Cryptocurrency does not need the help or the license of a central bank, it does not depend on commercial banks, SWIFT payment system and, unlike stock exchanges, transactions and exchanges can be made non-stop, because the user needs only a client schedule which runs on personal computer or a smart phone (Dragomir et al., 2021). The term of cryptocurrency came into public use along with its Bitcoin emergence in 2008 – a protocol meant to allow a network of people connected between them by means of a peer-to-peer digital communication pattern to issue digital tokens and to exchange them, securing at the same time the cryptography process.

While the initial proposal did not use the term of cryptocurrency, Nakamoto presented the project as a peer-to-peer "coin" in a list of discussion regarding networks and cryptography. However, the term of "cryptocurrency" has gained fast ground in online debates and in the written press.

The root *crypto* of the word cryptocurrency might be considered a substitute for cryptography, but it could have also derived from the cypherpunk movement, which has identified "anonymous money and other undetectable payment systems" as an authorized element within a crypto-anarchy. Bitcoin's goal of using

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cryptographic proof instead of trust" complies with the above-mentioned statement. Cryptocurrencies are digital assets based on cryptography and distributed ledger technology (DLT). This technology, especially the blockchain one, has the potential of revolutionizing the way in which financial assets are issued, accessed and shared in digital networks (a blockchain is a distributed ledger in which transaction data are stored in information blocks). A new information block is added to the already existing one by means of a computerized process which validates transactions. This technology has proved to be excellent in the storage of big databases, providing at the same time a wide access to and preventing badly intended attacks (Grosu et al., 2023). It involves the connecting of small investors with the financial system, which is an actually a concern issue for the regulating authorities, as in member states, the risks of uncontrolled development of virtual currencies are important both from macroeconomic and microeconomic point of view, because they have connection, on one hand, with consumers and investors, and on the other, political and financial monetary stability. The global finance stability may be affected as well as by their distribution in small investors' economies and by especially the inclusion of cryptocurrencies in the assets of investment funds. Having in view that autonomous private decision regarding the monetary offer can reduce the capacity of central banks of applying efficiently monetary policies, all cryptocurrencies are controlled by private persons, and therefore, the problem of influence on monetary system is becoming very important (Thakur, 2023).

In this context, this paper aims to analyze the role and growing relevance of cryptocurrencies within the global digital economy, focusing on their potential to revolutionize traditional financial systems, enhance cross-border transactions, and provide decentralized solutions for monetary exchange. The study will explore how cryptocurrencies, supported by blockchain technology, contribute to financial inclusion, reduce transaction costs, and increase transparency. Furthermore, it will examine the implications of integrating cryptocurrencies into mainstream financial ecosystems, considering their impact on regulatory frameworks, monetary policies, and the broader efforts toward building a resilient and sustainable digital economy.

Generally, the security of cryptocurrencies is based on cryptography, and not on people or trust either. For example, Bitcoin uses a method called "elliptic-curve cryptography" to make the Bitcoin transactions sure. Elliptic-curve cryptography is a kind of public-key cryptography based on mathematics to ensure the security of transactions. When somebody tries to evade the previously mentioned encryption scheme by brute force it takes a tenth of the universe's age to find a value which corresponds when trying 250 billion of possibilities every second.

The independence of cryptocurrencies is beneficial for legal entities and enterprises, as payments for goods and services are directly transferred in the virtual wallet of a company, thus avoiding the cash register and the bank. The authorities will not be able to cancel the transaction or block the wallet, and therefore the users always have got access to their funds.

II. LITERATURE REVIEW

The literature emphasizes the fact that blockchain, the basic technology of cryptocurrencies, is a immutable, transparent distributed ledger which provides transactions with security and validity (Nakamoto, 2008; Tapscott & Tapscott, 2016). This technology eliminates the necessity of some financial intermediaries, reducing thus the costs and risks associated with frauds.

EU is the first legal system which has set up a framework for cryptocurrencies – a comprehensive and timely legislative act despite the fact that it does not fully reach all its objectives. In most jurisdictions, cryptocurrencies do not belong to the applicable legal framework and in any case there are not specific dispositions. Cryptocurrencies are part of a global market which has no national or regional borders and whose users are often unknown. Cryptocurrencies' market is increasing more and more and it has become a global reality more and more similar to traditional financial ones. (Benson et al, 2024)

In the specialized literature, on this topic, Sharpe's work since the year 1964 is relevant as well, focusing on the concept of asset without risk (Sharpe, 1964).

Robert Merton in his paperwork "An Intertemporal Capital Asset Pricing Model" published in 1973 showed a model describing the way in which investors choose to allocate short-term and long-term capital depending on a series of factors including their expectations in terms of profitability and risk. According to Merton a stock's profitability depends both on its risk and on the way in which it matches to the investors' preferences to allocate the capital during different periods of time (Merton, 1973).

Cryptocurrencies are a threat to financial stability, but they are also highly risky speculative investments and as such they must be included in a regulating framework which should comply with the standards in force of the financial system. The treaty regarding the EU functioning (TFUE) allows the adopting of adequate dispositions on internal market establishment and running (article no 114 of TFUE), acknowledging that cryptocurrencies are one of the most important blockchain applications in the financial world. The aim of the European action is to create a regulating framework within which a cross border market can be developed by defining the legal tools applicable to the emission, transaction, compensation and regulation of financial instruments, mainly harmonized at the EU level (Thakur et al, 2023). The public's increased interest in investing in cryptocurrencies has determined the EU to bear responsibilities in terms of the risks of non-regulated virtual assets for investors and markets,

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including the risks of money laundering and terrorism financing. On the 29th of June 2022, EU adopted new regulations on the use of cryptocurrencies. The Council of the European Union and the European Parliament have reached a preliminary agreement on extending the application field of cryptocurrencies. On the 2nd of October 2020, The European Central Bank published a detailed report on the possible emission of a digital coin of central bank (CBDC), aproved by the Council of its governors (Donna et al, 2023).

The questions about the way of taxing cryptocurrency transactions, of protecting investors and preventing the use of cryptocurrencies in illegal activities are only a few of the problems the authorities are being faced with. Moreover, the anonymity provided by cryptocurrency transactions can be taken advantage of illegally such as money laundering or terrorism financing. This possible scenario requires the creation of a legal framework in order to protect both the consumers' interests and the national security (Dragomir et al., 2019). Besides, the volatility of digital coins may lead to significant financial losses for investors and more than that the lack of knowledge on the blockchain technology may lead to abuses and frauds. Therefore, it is essential that there is a kind of balance between innovation promoting and protection of public interests (Muskaj, 2023).

Essentially, blockchain technology is information technology but at the same time it is a new computational paradigm due to its basic characteristic which is decentralization. Blockchain has become the economic substrate which the internet lacked, but at the same time it is a means of supporting and maintaining economic development. Blockchain is a globally decentralized distributed ledger which allows all data registering and transfer, providing a high organizing which might facilitate the knowledge progress in unforeseen ways (Swan, 2015).

Pethuru *et al* in the paper"Blockchain, Artificial Intelligence, and the Internet of Things. Possibilities and Opportunities" presents blockchain as a database which makes possible the keeping of significant information, a significant structure respectively which is believed to bring about great changes in the monetary area and in other numerous different fields (Pethuru et al, 2022).

At present, cryptocurrencies may be found also among the options of diversification of investment portfolios and they are independent digital currencies which use cryptography to secure transactions and to control the creation of new monetary units (Usman, 2022). These new financial instruments have generated a new market which is developing in a fast way. Cryptocurrencies and the blockchain technology are relatively new and they present great risks for investors such as price volatility and security risk (D'Amato, 2022).

III. RESEARCH METHODOLOGY

The research methodology is based on a strict analysis of cryptocurrencies' issuing and transactions.

In the ecosystem of cryptocurrencies, their issuing is the introduction of a new digital asset. This is the process of putting into circulation of a new coin or of a new token that can be transitioned and used within the ecosystem. In many ways, issuing is similar to mining; still there are a few essential differences.

Proof of Stake Systems (PoS) issue new coins in circulation. These systems use validators or stakers to check transactions and to introduce new blocks in the blockchain. Instead, mining is based on the Proof of Work mechanism (PoW). In this situation, miners use specific equipment to solve complex cryptographic problems and generate blocks. Mining is an energo-intensive procedure but its result is beneficial for the environment. Mining goes on as long as the blockchain works on, providing the continuous checking of transactions and increasing its safety (Benson et al, 2024).

Issuing is not an important process only for the creation of traditional cryptocurrency units but also for the production of non-fungible tokens (NFT). NFT issuing consists usually in the following stages:

- Fulfillment of a cryptographic wallet by the crypto coin in case.
- Possibility of being registered in NFT exchange account.
- Possibility of connecting the wallet to web site.
- Transfer of digital files or art works that are about to be converted into NFTs.
- Issuing of NFTs.

The significance of the term *crypto-issues' rate*, also known as issue curve or issue program, refers to the rhythm in which new currencies are created and put into circulation. Issue rates are determined by the consensus mechanism protocol written in the software which is used by the blockchain. Different cryptocurrencies have different issuing rates depending on the consensus mechanism design. Some cryptocurrencies such as Bitcoin, have a limited offer and an issuing rate which decreases in time, with halving events. Others, especially those using PoS, have more consistent issue rates. The comprehension of cryptocurrencies' issuing rate is essential for the investors who want to assess the potential long-term value and scarcity of cryptocurrencies. They have a decreasing issuing rate such as Bitcoin, they can be more attractive for the investors who appreciate the rarity and potential of a deflationist offer in order to sustain prices (Panda, 2024).

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Bitcoin Issue. Mining is the mechanism on which the decentralized compensation center is based on, through which transactions are being validated and compensated, Mining is one of the inventions which makes Bitcoin special, a decentralized consensus mechanism standing at the base of P2P digital cash. Mining secures Bitcoin system and permits to reach a consensus at the level of the whole network, without a central authority (Panda, 2024).

The retribution of new-born bitcoins and transaction tax are a stimulating scheme which aligns the mining actions with the network security, implementing at the same time the monetary offer. Mining is one of the mechanism by means of which the security of Bitcoin consensus is decentralized. Miners register the new transactions in the global blockchain. A new block which contains the last block transactions is being mined every 10 minutes on average, thus adding these transactions to the blockchain. The transactions that become part of a block and are added to the blockchain are considered as confirmed thus allowing the new owners of bitcoins to know that an irrevocable effort was made to ensure the bitcoins' security that they received by means of those transactions. Moreover, blockchain transactions have got a topological order defined by their position in the blockchain. In the Bitcoin protocol, a transaction is valid only if it spends the results of the transactions emerged earlier in the blockchain (either they are earlier in the same block, or in a previous block) and if only no previous transaction spent the same results. Within a single blockchain, the application of topological order provides the fact that it is not possible to have two valid transactions which spend the same results, thus eliminating the problem of double expense. In some protocols built on Bitcoin, the toplogical order of Bitcoin transactions is also used to set an event sequence (see Figure 1). Miners recieve two types of reward in exchange of the security provided by mining: new created bitcoins by each new block (named subvention) and transaction tax deriving from all transactions included in the block. To earn this reward, miners compete to satisfy a challenge based on a cryptographic hash algorithm (Antonopoulos et al, 2023).

Figure 1. Price of Bitcoin Cryptocoin on scripture date
Source: www.coinmarketcap.com

Ethereum Issue. Ethereum is a decentralized open-source blockchain platform which uses its own coin Ether (ETH), use to pay transitioning commission payments – named "gas" (Poon et al, 2016).

This platform can do anything, from moving non-convertible coins and tokens (NFT), being any type of asset, to fulfilling some complex tasks by means of "smart contracts". Programmers can use the Ethereum network to execute applications of decentralized type (dApps) and to issue new cryptographic assets under the name of ERC-20 tokens. The Ether network incorporates some of the concepts introduced for the first time by Bitcoin to create a strong open-source blockchain platform for smart contracts that can be used to transfer and stock values similarly to Bitcoin, but more interesting, the network being capable of acting as a new decentralized internet with its own applications. It is about the Ether key-innovation, the possibility of implementing smart contracts on blockchain and of increasing the present advantages of this technology. In Gavin Wood's words, the Ether blockchain was initially designed "to become the computer of the whole planet".

Theoretically, by running on a globally distributed system of public nodes, Ethereum can render any application more reliable, more resistant to censure and safer. A transaction is a single cryptographically signed order. Depending on the product, there are two types of transactions (one leading to a message request and the other to the creation of a new account). A transaction is defined as being a signed data package, sent by an external account. Every transaction consists in a signature identifying the recipient of the message, the sender, the amount of ether to be about to be sent, optional data fields, STARTGAS and GASPRICE. The fields STARTGAS and GASPRICE are necessary to ensure protection against the attacks in the network. "Gas" is the basic unit of

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calculation. Every process requires a certain amount of calculation, and STARGAS field indicates the maximum number of calculations stages a process can use. The usual value is of a gas for each step of calculation, plus a supplementary fix value of five gases for each byte of data field, but this value cannot be higher and it is specified in GASPRICE field. Extractors are paid more for the processing of higher GASPRICE value transactions so that expeditors must choose very carefully GASPRICE values if they want their transactions to be processed. However, the bank must understand that any GASPRICE lower than this one wil lead to the refuse of processing the transaction (Dejan et al, 2018).

The transition function of Ethereum state which changes the expeditor's and sender's state during the execution of a transaction first checks if the transaction is correct (if the signature is valid and if the nonce corresponds with the expeditor's nonce). In the case when it finds a match, the final value of the transaction is calculated as STARTGAS*GASPRICE, which is being deduced from the expeditor's account sold, and the expeditor's nonce is increased. If this value is real, a fee is charged for each transaction byte, and the sum requested is transferred to the recipient in ether. In the case when the recipient's account does not exist, this one is being generated, and if there is a contract, then the contract code is executed. In the case when the sender does not have sufficient ether for the transaction or all the gas has disappeared in the moment of code execution, the state transition function cancels all the state changes, except for the payment of withdrawal fee (Asif et al, 2023).

Ethereum live price is of 3.548,69 $ per (ETH / USD), with a present market value of 426.40 billion USA dollars. The 24 h transaction volume is of 14.82B USD. ETH price in relation to USD is updated in real time (see Figure 2a and Figure 2b).

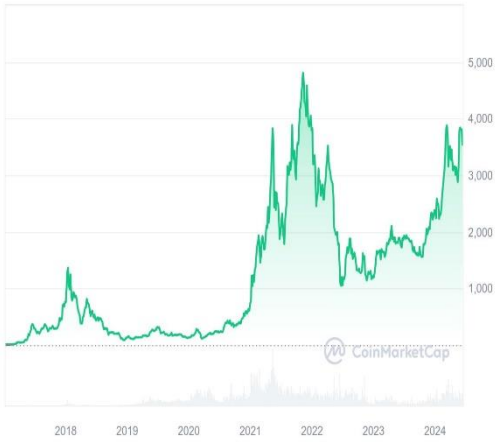

Figure 2a. Price of Ethereum cryptocoin on scripture date

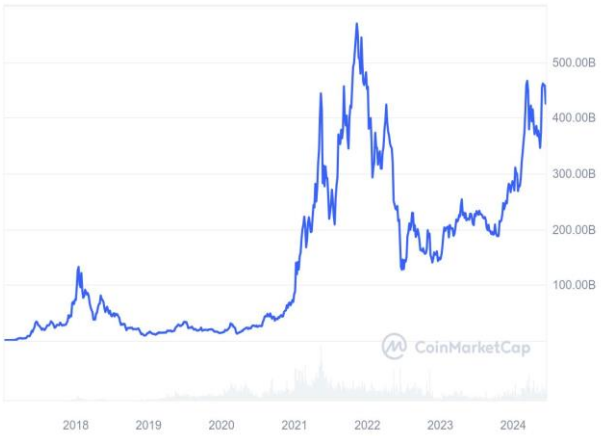

Figure 2b. Market Capitalization of Ethereum cryptocoin on scripture date

Source: www.coinmarketcap.com

XRP Issue. XRP is a Ripple cryptocurrency, namely the payment system developed by the Ripple Labs. Ripple is " a digital resource to make payments at world level" conceived to compete with traditional transfers by means of bank system which may be of interest for private clients and banks as XRP allows the making of very cheap transfers, the biggest Ripple advantage is very low cost of transactions. When it comes about international transaction processing, Ripple provides a cheaper and more performing solution than SWIFT. This is owed to "Internet of Value". "Internet of Value" is the generic term for XRP products: Ripple Ledger, RippleNet, RippleX and RippleCairn XRP. RippleNet is an international network used by financial institutions to make cheaper and faster money transfers as compared with traditional systems (Turnas et al, 2023).

RippleNet provides also order liquidities which mean that international transactions must not be pre-financed. Practically, RippleNet works as a middleman who ensures brokerage between two counterparts, standardizing intercurrency liquidity. Thus, if a European trader's payments are not accepted in American dollars or vice versa, ODL uses RippleNet as a middleman for such kind of transactions. Leisure XRP is the open-source blockchain of XRP, with Ripple as entity (Aysan et al, 2023).

XRP Ledger uses consensus protocols, a much simpler, more centralized and more efficient method, which shortens the transactioning times and expenses. With XRP Ledger, transactions are fast made, within seconds, faster than the 10 minute processing time of traditional systems (see Figure 3).

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Figure 3. Price of XRP cryptocoin on scripture date
Source: www.coinmarketcap.com

XRP price is of 0.47868416. Recent price action in relation to XRP has left the tokens' market capitalization of 26.54 billion dollars. Up to present, this year XRP has had a variation of -21.95%.

XRP Ledger (XRPL) is an open-source distribution ledger created by Ripple Inc. The native cryptocoin of XRP Ledger is XRP. Unlike Bitcoin (BTC), which uses a decentralized blockchain, XRP transactions are made by the network of XRP Ledger verifiers and protected by proof-of work mining.

Ripple transactions are registered publicly on distributed open-source consensus ledger which has a data structure of blockchain type; each block of successive data contains the hash value of the previous block. However, its consensus mechanism is different from that of Bitcoin and Ethereum. As it is not based on proof-of-work (PoW), XRP does not require mining. Still, XRP is based on a consensus protocol named Ripple Protocol Consensus Algorithm. All the transactions are approved by a supermajority of these trust nodes for these to reach a consensus and be included in XRP ledger (see Figure 4).

Figure 4. Market Capitalization of XRP cryptocoin on scripture date
Source: www.coinmarketcap.com

XRPL uses a different set of rules named Ripple Consensus Protocol Algorithm (RCPA). RCPA defines the way in which XRPL is managed by a network of independent Ripple validating nodes. Every transaction in Ripple must be confirmed by at least 80% in the network nodes, and anyone can be a confirmer (Mohsin et al, 2021). However, Ripple keeps a specific set of authentication data which might be useful. The list of trusting nodes is called Unique Nodes List (UNL). If Alice wants to send 1.000 of Japanese yens to her cousin in India, Alice could send that sum of money to participating financial institutions. JPY will be exchanged into XRP and will be validated by the network servers. Bob could withdraw the money in Indian rupees after validation. The delivery can be done within seconds.

IV. CONCLUSION

Bitcoin and Ethereum are most popular and valuable crypto coins at present. These are based on blockchain technology to sustain the trust mechanism in a peer-to –peer network based on all node majority consensuses.

The regulations of crypto coin economy which is in a continuous change are not definitely easy and according to some crypto coin and blockchain experts could be not feasible because of the inherent decentralized

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nature of blockchain technology wherein there is no authority controlling the transactions. Clearly, the simple imposition of legal obligations on the traditional financial markets is not a viable option or regulating decentralized crypto coins which are conceived to resist censure and are in contradiction with the present day financial regulating structures. In addition, the great diversity and heterogeneity of crypto coins and of company's strategies going round crypto coins (wallet providers, strike pools, stock exchanges etc) cannot be approached properly by uniform measures.

The regulating of crypto coins requires deep understanding of the stakers involved, types of activities done, types of transactions using crypto coins which must be reported and all the particularities characterizing crypto coin world. The present day attempts of regulating this field seem to be hindered by serious deficiencies in this regard. Taking into consideration the ambiguity of complying with the EU general Regulations regarding data protection (GDPR) by means of immutable blockchain, efficient regulating of crypto coins seems to be a difficult and complex task. But above all the prohibition or active regulation of crypto coins bring about only the risk of leading the users in the darkness of virtual world.

REFERENCES

1. Antonopoulos, De A., & Harding, D.A, (2023). Mastering Bitcoin, O'Reilly Media,Vol.1, https://books.google.ro/.
2. Asif, Ra., Syed, R., & Syed, H. (2023). Shaping the future of Ethereum: exploring energy consumption in Proof-of-Work and Proof-of-Stake consensus, School of Computing Sciences, University of East Anglia, Norwich, United Kingdom, 31 August 2023 https://www.frontiersin.org/journals/blockchain/articles/10.3389/fbloc.2023.1151724/full
3. Aysan, A. F., Khan, A., Isac, N., Drammeh, O., & Ozcan, R. (2023). Threat of intervention in cryptocurrency market: West Side story of bitcoin and ripple. Economic Computation and Economic Cybernetics Studies and Research, pp. 42-43, https://doi.org/10.24818/18423264/57.4.23.03.
4. Benson, V., Adamyk, B., Chinnaswamy, A., & Adamyk, O. (2024). *Harmonising cryptocurrency regulation in Europe:opportunities for preventing illicit transactions*, European Journal of Law and Economics, pag.37, 49-50, https://link.springer.com/content/pdf/10.1007/s10657-024-09797-w.pdf.
5. Cosmulese, C.G. (2021). Cryptocurrency As An Investment Or Disruptive Technology: Theoretical Insighs. European Journal of Accounting, Finance & Business 9 (2), 73-80
6. D'Amato, V., Levantesi, S., & Piscopo, G. (2022). Deep learning in predicting cryptocurrency volatility. Physica A: Statistical Mechanics and its Applications, 596, 127158.
7. Vujičić, D., Jagodić, D., & Ranđić, S. (2018, March). Blockchain technology, bitcoin, and Ethereum: A brief overview. In 2018 17th international symposium infoteh-jahorina (infoteh) (pp. 1-6). IEEE.
8. Donna, M., & Vella, F.M. (2023), Blockchain & Cryptocurrency Laws and Regulations. Italy. Global Legal Insights. Retrieved 3 May 2024 from: https://www.globallegalinsights.com/practice-areas/blockchain-laws-and-regul ations/italy
9. Dragomir, F. L., & Alexandrescu, G. (2017). Aplicaţii ale inteligenţei artificiale în fundamentarea deciziei. Buletinul Universităţii Naţionale de Apărare „Carol I", 4(2), 56-61. Retrieved 3 May 2024 from: https://revista.unap.ro/index.php/revista/article/view/342
10. Dragomir, F. L., Alexandrescu, G., & Postolache, F. (2019). Tools for Hierarchical Security Modeling. eLearning & Software for Education, 4. 34. Retrieved 3 May 2024 from: https://proceedings.elseconference.eu/index.php?paper=0aef59d60bc72e184c9bac848aa6b9bc
11. Dragomir, F. L., Dumitriu, C. Ş., & Bărbulescu, A. (2021, October). Recommendation systems-modeling abusive clauses in e-commerce. In 2021 International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME) (pp. 1-4). IEEE. . Retrieved 3 May 2024 from:https://ieeexplore.ieee.org/abstract/document/9590828
12. Grosu, V., Cosmulese, C. G., Socoliuc, M., Ciubotariu, M. S., & Mihaila, S. (2023). Testing accountants' perceptions of the digitization of the profession and profiling the future professional. *Technological Forecasting and Social Change*, *193*, 122630. https://www.indianjournals.com/ijor.aspx?target=ijor:ijemr&volume=13&issue=3&article=014.
13. Merton, R. C. (1973). An intertemporal capital asset pricing model. Econometrica: Journal of the Econometric Society, 867-887.
14. Mohsin, M., Naseem, S., Ivaşcu, L., Cioca, L. I., Sarfraz, M., & Stănică, N. C. (2021). Gauging the effect of investor sentiment on Cryptocurrency market: an analysis of Bitcoin currency. Romanian Journal of Economic Forecasting, 24(4), 87.
15. Muskaj, B. (2023). The Cryptocurrency Market and The Regulatory Framework of EU Legislation. European Journal of Multidisciplinary Studies, 8(2), 188-193.
16. Nakamoto, S. (2008). Bitcoin: A Peer-to-Peer Electronic Cash System. Retrieved 13 May 2024 from: https://static.upbitcare.com/931b8bfc-f0e0-4588-be6e-b98a27991df1.pdf
17. Panda, S. K., Sathya, A. R., & Das, S. (2023). Bitcoin: Beginning of the cryptocurrency era. In Recent Advances in Blockchain Technology: Real-World Applications (pp. 25-58). Cham: Springer International Publishing.
18. Pethuru, R., Kumar, A.D., Kumar, A. (2022). Pramod Singh Rathore (eds.). Blockchain, Artificial Intelligence, and the Internet of Things. Possibilities and Opportunities, Cham: Springer International Publishing.
19. Poon, J., Dryja, T. (2016). The bitcoin lightning netwiork: scalable off-chain instant payments. Retrieved 3 May 2024 from: https://lightning.network/lightning-network-paper.pdf.
20. Sharpe, W.F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk, The Journal of Finance 19(3), 425-442.
21. Sorici, M. L., Grosu, V., Cosmulese, C. G., & Socoliuc, M. (2021). Adjusting Financial Reporting in the Perspective of Transferring Financial Transactions to the Cryptocurrency Market. *LUMEN Proceedings*, *17*, 597-610.
22. Swan, M. (2015). Blockchain. Blueprint for a New Economy, O'Reilly. Sebastopol, California.
23. Thakur, K., Satsangi, P., Kumar, D., & Saxena, U. (2023). The future of cryptocurrency. International Journal Of Engineering And Management Research, 13(3), 104-115.
24. Usman W., Cryptocurrencies: A Brief Thematic Review (January 8, 2022). Retreved 3 January, 2024 from: SSRN: https://ssrn.com/abstract=3024330 or http://dx.doi.org/10.2139/ssrn.3024330
25. Tumas, V., Rivera, S., Magoni, D., & State, R. (2023, March). Topology Analysis of the XRP Ledger. In Proceedings of the 38th ACM/SIGAPP Symposium on Applied Computing (pp. 1277-1284).

DOI: 10.4316/EJAFB.2024.12115