

## ETHEREUM – MAINSTREAM PROFILE OF THE CRYPTOCURRENCY

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**Abstract.** *The development of technology and the increasing spread of Internet services are a prerequisite for the evolutionary rise of the monetary system, which logically led to the advent of blockchain technology. Blockchain-based evolutionary form of money is emerging, which aims to become an evolutionary alternative to fiat money, the so-called cryptocurrencies. Among the most discussed types of digital money is Ethereum. The subject of this study is the cryptocurrency Ethereum, and the aim is to analyze the essential profile of this new way of payment and trade between economic entities.*

**Keywords:** *Ethereum, blockchain, cryptocurrency, digital money, mainstream profile, variety of cryptocurrency.*

**JEL CLASSIFICATION:** *A10, F15, M21, G23*

There are many cryptocurrencies worldwide, each of which offers a variety of functions in order to attract new economic entities and financial resources. The subject of this research is one of the most discussed cryptocurrencies - Ethereum, which like Bitcoin (the first decentralized cryptocurrency) is a means of payment made by confirming transactions. What is specific about this cryptocurrency is that it is open source, which works through public software and is associated with "smart contracts" or the so-called. scripts. In fact, the very name of the digital currency is Ether, and the blockchain is powered and generated by the Ethereum digital platform. The innovative thing about its essential characteristics is that through the so-called "Smart contracts" consumers can not only own Ethereum, but also compile investment portfolios from other digital currencies. [Hoffman, 2018]

Analyzing of the mainstream profile of Ethereum shows protection of depositors from errors and fraud, cryptocurrency portfolio uses the so-called. public and private key. The comparison of the two keys indicates that transactions are made through the private key, and ethers are received through the public key, as the condition is that the other party - sender, knows the public key. Accounts are anonymous, in most cases invalid usernames are used. Exploring the difference between Ethereum and many other cryptocurrencies, incl. Bitcoin shows that the available amount of ether by 2018 amounts to 100 million units and there is no limit on the amount offered. [Varshney, 2018] In fact, Ethereum is specific with its virtual machine, where the so-called "Smart contracts". However, prospective users often ask questions related to the security of cryptocurrency.

Ethereum develops in four main stages [EtherBasics] known as: Frontier, Homestead, Metropolis, Serenity. The first stage is related to the launch of cryptocurrency, when there are many dangers of cyberattacks. With it, users are at greater risk, as investors themselves launch a specific version of the software in order to perform weekly updates, which can cause errors and problems. The main goal, which is an advantage of Ethereum, is related to the elimination of bureaucracy and ensuring the protection of economic agents in transactions, which is facilitated by the so-called. "Smart contracts".

Based on the author's analysis of the essential profile of Ethereum (ether), it can be argued that this cryptocurrency operates in a decentralized environment, which revolutionizes the entire IT industry. The creators of Ether have launched a platform that pursues fundamental cryptocurrency goals related to improving the technological crypto system Bitcoin. Although there is a partial similarity between them, there are a number of conceptual differences between Bitcoin and Ethereum. Despite the lack of mass information, it is assumed that the cryptogram boom in the period 2016-2017 is also related to the promotion of Ethereum as a new and alternative way of payment and trading. This cryptocurrency creates preconditions for increasing the potential of the blockchains, for more massive undertakings in the field of technological sciences and research of new projects, which attracts significant financial and investment resources at national and supranational level. Based on its market capitalization, Ethereum is the second most popular encryption currency in the world, after Bitcoin, but also very revolutionary. In addition, the

platform for creating and managing decentralized applications and the blockchain information base function through the creation and use of technology contracts.

Ethereum, like other cryptocurrencies, has a software platform that uses a decentralized Internet and a decentralized app store. It is logical that a system created on this principle needs currency to pay for computing resources when launching an application or program. In fact, this is where "Ether" comes into play. Analytical considerations define Ether as a digital asset that does not require a third party to process the payment. It not only works as a digital currency, but acts as a "fuel" for decentralized network applications. If the user wants to change something in one of the applications within Ethereum, he has to pay a transaction fee so that the network can process the change. Transaction fees are calculated automatically, based on the amount of "gas" required for a given action, the amount of computing power required and the technological time to carry out transfer operations.

For the specificity of the functions of Ethereum and for the influence on society, its properties and differences from the standard approaches are analyzed. One of the main features of cryptocurrencies and Ethereum is the use of a decentralized system, which means that it is not controlled by any governing entity at the macro and micro political and economic levels. Nowadays, there are many online services, business structures and enterprises built on the principle of a centralized management system. Ethereum, as a decentralized system, is completely autonomous and uncontrolled by others. It has no focal point of failure, it is run by thousands of voluntary computers scattered around the world. Users' personal information remains positioned on their own computers, while content that includes multiple applications, videos, etc., remains under the full control of the creators, without the need to comply with rules imposed by hosting services such as the App Store and YouTube. The freedom that Ethereum offers as part of the world of cryptocurrencies is a preferred asset for financial and investment operations by economic agents.

It is important to understand that despite constant attempts to compare the two cryptocurrencies, Ethereum and Bitcoin are two completely different projects, with completely different goals. Bitcoin is the first encrypted currency and money transfer system built and maintained by an advanced public accounting technology called the blockchain. Ethereum further develops the technology used by Bitcoin and significantly expands its capabilities. It is a complete network, with its own internet browser, coding language and payment system. Most importantly, it allows users to create decentralized applications on the Ethereum blockchain.

The whole system of Ethereum is supported by a global system of so-called "Nodes". The term 'nodes' can be thought of as a network of volunteers who download the entire Ethereum blockchain to their personal computers, applying all the consensus rules of the system, maintaining the network and receiving remuneration in return. [Rosic, 2016] Consensus rules and other aspects of the network are dictated by "smart contracts" designed to automatically carry out transactions and other specific actions within the network with countries that are not necessarily trusted. The conditions for fulfillment of both parties are pre-programmed in the contract and upon completion of these conditions transactions or other specific actions are triggered. Intelligent contracts are considered to be the future and they are gradually replacing other contractual agreements, with security provided that goes beyond traditional contract law, with reduced transaction costs, when concluding contracts and building trust between the two parties.

In addition to the core profile of this digital currency, it can be stated that the system also provides its users with the Ethereum Virtual Machine (EVM), which essentially serves as a execution environment for smart Ethereum-based contracts. It provides users with security when executing incorrect code and at the same time ensures that there will be no confusion between the two programs. EVM is completely isolated from Ethereum's core network, making it an ideal tool for researching and improving the structure of smart contracts. The platform provides an encrypted banknote called "Ether" and creates new opportunities for decentralized projects and start-ups based on blockades and smart contracts. One of the start-ups is "The DAO" [Chohan, 2017], which is a platform for finding investment projects built on smart contracts.

The launch of Ethereum has a beneficial effect on a macro level, reviving the world of cryptograms through the method of accentuation and flexibility of the blockade. Ethereum is defined as a suitable platform for the execution of smart contracts: applications that work exactly as programmed, without any possibility of downtime, censorship, fraud or interference from third parties.

Ethereum or ether is one of the flexible and popular digital currencies of today, performing the functions of:

- payment instrument;
- asset storage form;
- investment asset.

In terms of maintenance and distribution, ETH is at the heart of existing digital currencies on the market, with broadcasting functions affecting internal calculations and transaction logging on the platform. The main value of Ethereum is not its encryption, because the platform allows to create decentralized projects in the blockchain, starting from charitable foundations to applications for sports betting and others. The Ethereum platform accepts any programming language, including visual programming languages, making it versatile and flexible. Many questions arise about how to configure this type of software system, which can connect to the technologically created virtual machine Ethereum (EVM). This is a Turing machine [Уикипедия, 2020], for the purpose of drawing up intelligent bytecode contracts, an action that takes place before sending them to a blockchain. It thus configures the use of loops that ensure the execution of each smart contract operation. Potentially "endless" cycles are eliminated from the platform through a mechanism defined as gas and are not paid for the use of this powerful computer. All costs are borne by the network. [Rosic, 2016]

***According to the author, Ethereum is such a blockchain system that offers almost unlimited possibilities for use, thanks to its qualities such as: flexibility, power and versatility.*** In fact, we accept this thesis, because otherwise companies like Microsoft, IBM, JPMorgan will not be interested in it. The analysis of the ICO wave in 2016-2017 is summarized as a result of the emergence of Ethereum and its intelligent contracts. The research activity is related to the analysis of the advantages and disadvantages of Ethereum, where it is important to clarify what is at stake: platform or cryptocurrency (ether). For starters, ether is defined as a symbol (cryptocurrency) and has no serious drawbacks compared to Bitcoin and other popular coins. Its positive features include the rapid processing of online transactions and the potential increase in ETH's payment volume, as well as the lack of problems in purchasing or exchanging this encrypted currency for other coins. The disadvantages are from an economic point of view.

As part of the macro and micro environment at national and supranational level, there are several mechanisms that have an impact on cryptocurrencies. Bitcoin is talking about market pricing, and Ethereum is directly related to the success of the platform. When a defect is found in Ethereum, this reduces the cost of the symbols. The dependence is due to the fact that Ethereum is available in unlimited quantities compared to the first decentralized cryptocurrency, which is in limited quantities. This dependence is that as the amount of Bitcoin units excavated decreases, its price increases because it is an exhaustible resource. It is different with Ethereum, because there is no maximum number of units provided and to increase or decrease its value, the main role is played by its success, innovative methods, software improvements, qualities and investor confidence, which increases the demand for this crypto unit and the desire of economic agents to invest financial resources in it. There is no emission ceiling for Ethereum. This "devalues" the cryptocurrency and provokes the idea of a possible transition to Proof-of-Stake or the development of a mechanism for burning symbols. [Ковалев, 2018]

**Based on the above, the author presents the advantages and disadvantages of ETN as follows (Table 1):**

**Table 1. Analysis of the advantages and disadvantages of Ethereum**

Advantages	Disadvantages
<p>Versatility – supports different programming languages and algorithms of different complexity, and smart contracts are used in different areas;</p> <p>Flexibility - the platform is open for improvements, upgrades, upgrades;</p> <p>Publicity - Ethereum is a leader in the person of Vitalik Buterin, details for updates and innovations have been announced in advance;</p> <p>Availability - Ethereum is an open platform for developing decentralized applications. In addition, almost anyone can act as a developer.</p>	<p>Centralization - although Ethereum is positioned as a DAO (decentralized autonomous organization), but the case of the network with a "hardfork set" in 2016 shows that there are elements of centralization in the platform;</p> <p>Vulnerability - the case of DAO shows that the platform can "miss" imperfect projects;</p> <p>Documentation - developers complain about the lack of clear documentation, which complicates the interaction with the platform.</p>

The world of cryptocurrencies is vast. Many cryptocurrencies appear every day, but a small number manage to establish themselves on the crypto market and establish themselves as a preferred alternative resource for investment. Ethereum is one of these digital currencies, which based on its innovative approach and essential characteristics draws public attention to itself, attracting the interest and confidence of investors and has become one of the cryptocurrencies with the highest market capitalization in recent years. The concept of Ethereum is based on the idea of creating the greatest possible security in the implementation of transaction operations, as well as offering a wide range of options. The author clearly states that digital money is a consequence of technological development of the XXI century and everyone has the right to choose what and where to invest without violating the law.

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