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Economic and Social Council

The need to regulate cryptocurrencies

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Issue:
Need to regulate cryptocurrencies

Author:
Alexander E.
Economic and Social Council Chair

I. Introduction

Probably no new technology that has risen in the last decade has been in the headlines so frequently and is so controversially debated as the concept of cryptocurrencies. While the crypto-community promotes cryptocurrencies as a new creation that is meant to change our everyday finance and the way we use our money, critical voices are concerned about the emerging potential of a speculative bubble and the consequences this entails. Also the increased occurrence of incidents in which cryptocurrency is associated with criminal activity and its impact on climate, are alarming. For these and other reasons which are to be explained in the following there is the urgent need to regulate cryptocurrencies.

This report is intended to form a solid basis for further research by providing a compact and concise presentation of the topic, which is supported by references additional sources.

II. Definition of Key Terms & Explanations

Altcoin: any cryptocurrency that is not Bitcoin[1]

Bitcoin: brand name for the first (and probably best known) crypto currency[2]

Blockchain: technology behind cryptocurrencies

Cryptocurrency: a digital currency produced by a public network, rather than any government, that uses cryptography to make sure payments are sent and received safely[3].

Cryptography: a method within computer science aiming to keep information secure and secret by scrambling it into indecipherable information. The decryption of the information is only possible by the use of a corresponding key[4].

Encryption: the process of changing electronic information or signals into a secret code[5].

Ledger: a record or collection of transactions which includes information such as dates, times, senders and recipients[6].

Mining: the creation of new digital “coins”[7].

P2P (Peer to Peer): transaction of something between two parties without the involvement of a central authority or intermediary[8].

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[1] https://dictionary.cambridge.org/dictionary/english/altcoin?q=Altcoin
[2] https://dictionary.cambridge.org/dictionary/english/bitcoin
[3] https://dictionary.cambridge.org/dictionary/english/cryptocurrency , Nov 19 2022, adopted literally
[4] https://www.forbes.com/uk/advisor/investing/cryptocurrency/crypto-glossary-of-terms-acronyms/
[5] https://dictionary.cambridge.org/dictionary/english/encryption
[6] https://www.forbes.com/uk/advisor/investing/cryptocurrency/crypto-glossary-of-terms-acronyms/
[7] https://www.forbes.com/uk/advisor/investing/cryptocurrency/crypto-glossary-of-terms-acronyms/
[8] https://www.forbes.com/uk/advisor/investing/cryptocurrency/crypto-glossary-of-terms-acronyms/

Unregulated: In the UK, financial services are regulated. This means that providers must adhere to a strict ruling which is designed to protect consumers. However, cryptocurrencies are not regulated in the UK so that investors are not subjected to any legal protection.

Blockchain node: moderators building the central infrastructure of a decentralised network.

III. Background Information

Origins - History of Cryptocurrencies

The history of the origin and the rise of cryptocurrencies started in 2008 when a paper called "Bitcoin - A peer to peer electronic cash system" was published by someone using the pseudonym Satoshi Nakamoto whose real identity remains unrevealed till today.

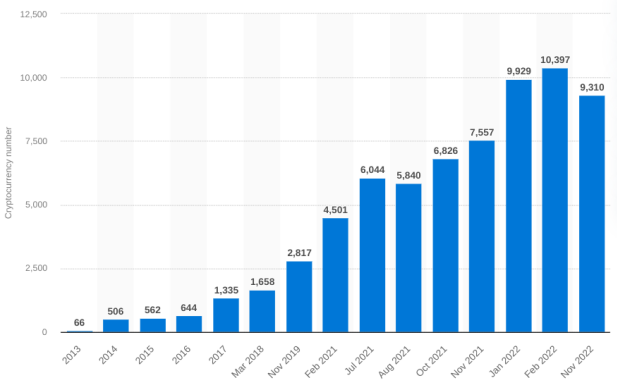
In 2009, the process of Bitcoin "mining" began after the release of the bitcoin software. A year later the currency was valued for the first time when someone decided to swap 10,000 coins for 2 pizzas.

Following the rapid growth of bitcoin and its increased popularity, alternative, rival crypto currencies known as altcoins emerged to proceed with the idea of decentralised and encrypted currencies. The further history of cryptocurrencies is mainly characterised by high volatility, crises, extreme peaks as well as occasional involvement in crime.

In 2013, Bitcoin crashed shortly after reaching a price of $1,000 for the first time: a shock for many investors, followed by severe losses.

In 2017, Bitcoin reached a milestone of $10,000 and continued to grow. As a result of the increasing number of ways to spend and use bitcoins and other cryptocurrencies in addition to the continued increase in its popularity, more and more money flowed into the cryptocoin ecosystem.[9]

Today (2022), there exist about 10,000 different crypto currencies. However it has to be mentioned that most of those cryptocurrencies are not of significant importance: It is estimated that the top 20 cryptocurrencies form up to 90 percent of the total market.[10]



[9] https://www.forbes.com/sites/bernardmarr/2017/12/06/a-short-history-of-bitcoin-and-crypto-currency-everyone-should-read/?sh=66d99b2e3f27 , Nov 21 2022

[10] Image source: https://www.statista.com/statistics/863917/number-crypto-coins-tokens/#:~:text=Quantity%20of%20cryptocurrencies%20as%20of%20November%2018%2C%202022&text=In%20short%2C%20there%20are%20nearly,might%20not%20be%20that%20significant

At this point, the concept and basic functioning of cryptocurrency should be explained for a better understanding.

Blockchains

Blockchain is the fundamental database technology that forms the basis of cryptocurrencies. A blockchain can be described as a digital ledger, a transactional database, that is distributed and serves the function to record transaction details and store data. Unlike conventional databases, blockchains are decentralised, with digital, identical copies distributed over a complex network. This makes hacking and tricking the system more difficult. For a better visualisation of the concept, one can think of an Excel table of which multiple and identical copies are distributed over a network instead of being accessible only to a central administrator.

When adding new data to the digital ledger a sufficient majority of nodes must verify the transactions and confirm the legitimacy of this new data. Only when they are in consensus a new “data block” can be added to the chain. This process of transaction is additionally secured by cryptography. Therefore blockchains are considered to be highly secure.[11]

IV. Issues

In addition to the obviously high risk caused by extreme volatility and the unpredictability of the market, the business with cryptocurrencies has some other disadvantages that entail negative consequences.

For a currency designed for anonymity and lack of control, perhaps unsurprisingly, bitcoin has proven to be a lucrative and attractive target for criminals as shown by the following example.

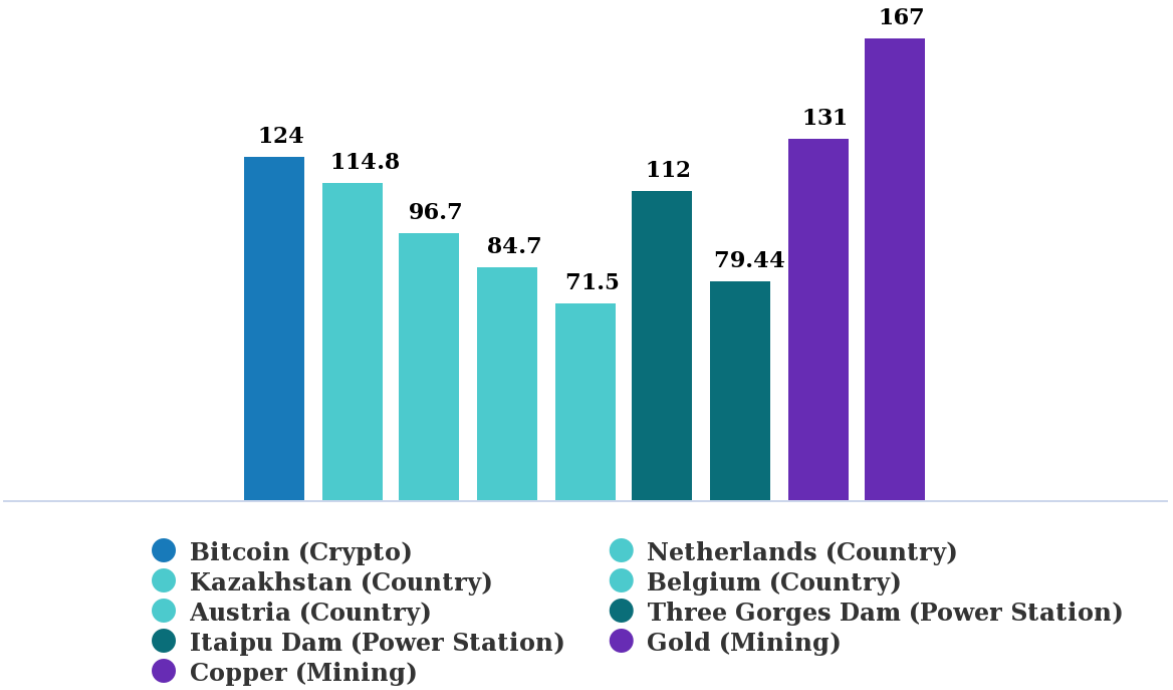
Mt. Gox was the biggest, one of the most popular and also one of the earliest Bitcoin exchanges and was based in Tokyo. The company was originally started by Jed McCaleb as a website for treating cards from the game “Magic- the gathering”. In 2011 Mt. Gox was acquired by the administrator and exchange driver Mark Karpeles. Following a rise in the price of Bitcoin, the site became the most popular place in the world to buy and sell bitcoin. But a couple of years later Mt. Gox went dark: It came out that the company lost 850,000 Bitcoin which were valued at more than 450 million at that time. Although 200,000 bitcoins were found in an old electronic wallet shortly after, which were worth billions a few years later, the remaining 650,000 are still missing.

Research conducted by the European Union Agency for Law Enforcement Cooperation (Europol) shows the increasing scale in which cryptocurrencies are used as parts of criminal activities. The major illegal activities in connection with the use of cryptocurrencies consist in large-scale money laundering, fraud and the online commerce involving illicit goods and services such as drugs or /child) sexual abuse material (CSAM). Further information can be

[11] https://www.forbes.com/uk/advisor/investing/cryptocurrency/what-is-blockchain/ , Nov 24 2022

found in the following report: Europol Spotlight - Cryptocurrencies - Tracing the evolution of criminal finances.pdf[12]

Furthermore, when critically examining cryptocurrencies, one should also include its negative environmental impact and the aspect of sustainability. Considering the enormous amount of energy that is required by the computers for solving complex mathematical problems to create crypto coins such as bitcoins and then verify transactions on the blockchain in addition to the fact that a major portion of the global energy supply is still provided by fossil-fuelled power plants the process of Bitcoin-mining can also be held responsible for a not insignificant proportion of the production of greenhouse gases. Tim Berners-Lee, the man known for the invention of the World Wide Web in 1989, describes the process of "Bitcoin-mining" as "one of the most fundamentally pointless ways of using energy."[13]



[14]

Source: Centre for Alternative Finance, IEA, Power-Technologies, Water Power Magazine, Morgan Stanley Research

As shown by the diagram, the energy use of Bitcoin exceeds the amount of electricity that is produced in the Netherlands. To give another example: As Jessica Alsford, Morgan Stanley's Chief Sustainability Officer, expresses it: “Every $1 of Bitcoin mined is materially more carbon intensive than every $1 of gold mined”[15]. According to another estimate made by her

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[12] https://www.europol.europa.eu/cms/sites/default/files/documents/Europol%20Spotlight%20-%20Cryptocurrencies%20-%20Tracing%20the%20evolution%20of%20criminal%20finances.pdf

[13] https://news.un.org/en/story/2021/06/1094362

[14] image source: https://www.morganstanley.com/ideas/esg-cryptocurrency-pros-cons

[15] https://www.morganstanley.com/ideas/esg-cryptocurrency-pros-cons , Nov 25 2022

team, Bitocins carbon intensity is 14.2 million times the total carbon intensity of visa credit card transactions.

V. Principles of Regulation & Approaches

As it becomes evident from the reasons already mentioned, there exists an urgent need to regulate cryptocurrencies in order to protect investors and to preserve the stability of the financial markets. In the following, we will take a closer look at institutions involved in the (attempts of) regulation of cryptocurrencies and possible approaches to regulation.

The Federal Reserve (FED) is the US central banking system that focuses on the regulation of banks and the US Dollar. This means that in general, cryptocurrencies are outside of its scope. However, when crypto currencies are a part of the investment assets of banks and are included in their balance sheet the jurisdiction of the FED and cryptocurrencies overlap. Besides requiring banks to keep a specific percentage of their deposits in cash and secure assets so that customers are able to easily access funds as withdrawals increase, the Federal banks also have ruled that cryptocurrency assets are to be disclosed in a separate way by banks. Banks are also advised to contemplate the risk of including cryptocurrency related assets to their portfolios and need to notify the FED for new activities concerning cryptocurrency assets.

Other organisations involved in the creation of guidelines and the surveillance of transactions and the business related to cryptocurrencies are the Securities and Exchange Commission (SEC), the Financial Crimes Enforcement Network (FinCEN) and the Commodities Futures Trading Commission (CFTC).[16]

The U.S Securities and Exchange Commission (SEC[17]) is engaged in maintaining the security of financial markets, enforcing federal securities as well as protecting and informing investors while the CFTC regulates derivatives and commodities. This raises the question whether ‘crypto’ falls under the term securities or goods, as many subcomponents included in the cryptocurrency- ecosystem represent a challenge for the current regulations[18].

In a case concerning insider trading charges against a group around a former product manager of Coinbase, the SEC claimed that nine separate crypto coins were considered as securities while, in another case, a federal judge decided that cryptocurrencies such as Bitcoin fall under the term commodity.[19] [20]

The CFTC emphasises that the protection of investors is particularly important: About 20% of Americans reported that they had already traded with cryptocurrencies. As its popularity

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[16] https://www.forbes.com/sites/qai/2022/09/26/does-the-federal-reserve-regulate-cryptocurrency/?sh=673289e429ca , Dec 1 2022

[17] https://www.sec.gov/

[18] https://www.brookings.edu/2022/08/11/the-future-of-crypto-regulation-highlights-from-the-brookings-event/ , Dec 5 2022

[19] https://www.sec.gov/news/press-release/2022-127

[20] https://www.cftc.gov/PressRoom/PressReleases/7774-18

grows, the market will be entered by increasingly inexperienced investors who need to be informed, educated and also protected from the risks associated with cryptocurrencies.

The recent crash of the cryptomarket in combination with several well-known crypto firms (such as FTX) going into bankruptcy[21] resulted in a reinforced demand for better regulation of cryptocurrencies by international (legal) standards and guidelines without jurisdictional gaps and the lack of compliance with the present legal requirements. In a paper by the Brookings Institution, an American think tank, the authors propose the creation of a new self-regulatory organisation (SRO) arising from the cooperation between SEC and CFTC. This SRO could be similar to the NFA (National Future Association) or the Financial Industry Regulatory Authority (FINRA)[22]. This organisation would now exist with the aim of providing the necessary guidelines and protecting financial markets as well as investors [23].

Concluding, it can be said that the lack of control and regulation of cryptocurrencies, if neglected further, can lead to deep-seated difficulties and have a huge negative impact both the environment and also the stability of financial markets and the global economy.

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[21] https://www.washingtonpost.com/business/2022/12/05/crypto-ftx-collapse-bankruptcy-companies/, Dec 6 2022

[22] https://www.finra.org/#/

[23] https://www.brookings.edu/research/how-to-improve-regulation-of-crypto-today-without-congressional-action-and-make-the-industry-pay-for-it/

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https://www.europol.europa.eu/cms/sites/default/files/documents/Europol%20Spotlight%20-%20Cryptocurrencies%20-%20Tracing%20the%20evolution%20of%20criminal%20finances.pdf

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https://www.sec.gov/news/press-release/2022-127

https://www.cftc.gov/PressRoom/PressReleases/7774-18

https://www.washingtonpost.com/business/2022/12/05/crypto-ftx-collapse-bankruptcy-companies/

VII. Appendix - Additional Sources for research

Basic principles for regulating crypto-assets:
https://www.lse.ac.uk/iga/assets/documents/research-and-publications/Cryptocurrencies-and-monetary-and-financial-regulation-4.pdf

How to Improve Regulation of Crypto Today—Without Congressional Action—and Make the Industry Pay For It

https://www.brookings.edu/wp-content/uploads/2022/10/WP79-Massad-Jackson-updated-2.pdf

Europol Spotlight - Cryptocurrencies - Tracing the evolution of criminal finances.pdf

https://www.europol.europa.eu/cms/sites/default/files/documents/Europol%20Spotlight%20-%20Cryptocurrencies%20-%20Tracing%20the%20evolution%20of%20criminal%20finances.pdf