

What Governance for a Decentralized Economy?

Economical and technological limits concerning the development of cryptocurrencies

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The aim of this brief essays is, first, to indicate why in the next future the block-chains and cryptocurrencies will meet insuperable obstacles in their attempt to increase their presence in the world monetary system, and then, to make some assumption about how they will probably evolve: if they do not maintain their current minimal presence and States' controls and regulations increased, they will disappear, probably becoming something different.

However, this essays wants, first of all, to highlight a relevant aspect which is normally ignored by the debate concerning the creation and diffusion of the cryptocurrencies: their “minting” requires a great energy consumption and this happens in a world context where the lack and high cost of fossil and renewable resources oblige to reduce/save energy consumption (see the attached files concerning the energy consumption related to the “minting” of main cryptocurrencies as Bitcoins and Ethereum and note that these data are calculated per defect). The increase of the relevance and diffusion of these payment tools obviously implies a further growth of energy consumption that, in the current conditions, it is not possible to realize without increasing the “minting” costs and creating a complicate competition with other uses.

Moreover, while the real mines of raw material used for the minting of the coins or the forming gold and silver bars have environmental effects but also a positive economic impact on the territory where they are located (e.g. miners' wages and all shops selling goods and services to their families) the “mining” related to the creation of cryptocurrency concerns few people and also the impact for the industry producing equipment is inferior to the global business concerning machines and tools used in real mines. Furthermore, the great calculators used for the minting consume, in this moment when cryptocurrencies only represents a small “niche” in the monetary system¹, the same energy that is yearly used by Argentina and more than annual Dutch or Arab Emirates consume (and obviously more than countries belonging to the “third world”). Cryptocurrencies supporters compare the environmental cost of the maintaining of the current bank system an argue that the “minting” costs are inferior: however they “forget” that they simply consider the costs of a small “niche” without

¹ Even if the high volatility of cryptocurrencies provokes strong changes in their value in few time, the world market capitalization of all cryptocurrencies arrived at 3,000 billion \$ at the end of November 2021, its historical max. To compare the actual relevance in the world monetary system, please consider that in 2020 the amount of the notes actually circulating in the world was estimated 6,660 billion \$ and this value excluded all financial tools expressed in real currencies which represent multiples (e.g. in 2016 the value of derivate instruments was estimated 15,000 billion \$). Source: Bank for International Settlements data (online).

considering the economic benefits of inducements of the existing financial institutions (these latter do not exist in the case of the “minting” cryptocurrencies).

Finally, to invest now in these currencies means to express great confidence in a future technological evolution favouring the production of these cryptocurrencies using a “green” and not expensive energy. Since the birth of the minting in ancient age the related costs have formed a very small part of the final value of the currency (together with the value of raw materials and seigniorage rights), but they has never been so high as in the case of cryptocurrencies: this obviously influences the final value and in particular the diffusion of new cryptocurrencies. If these latter want to become a real alternative tools for world payment they need to be available in large quantity: if this is not possible, the conditions are similar to those of the Triffin’s dilemma and explain the quick and inevitable failure of a world monetary system based on cryptocurrencies. At this regard, it is in fact evident that: as the real quantity of cryptocurrencies it is possible to produce is limited, more transactions use cryptocurrencies more the value of these latter increases creating inflation and speculation processes; at the same time, if the production of cryptocurrencies strongly increases, the effects on the energy demand provokes a great growth of the cost of the energy and the “minting” and the final results is, again, the creation of inflation and speculation processes.

So, simply considering the “energy consumption factor”, the answer to the question in the title is relatively easy: there will be no a real decentralised economy based on the blockchain and, therefore, no governance will deal with it in the future.

Even if the technological innovations allow to strongly reduce the energy consumption (that is new low best performing calculators) or the cost of the “minting” (e.g. new nuclear fusion power plants producing “green” and not expensive energy in infinite quantity), there existed other reasons explaining the answer above mentioned.

It is in fact important to remind why this new tools for payment were born and their limits and, above all, why, since the creation of a common good to use for the exchange of goods and service, that is the money, ancient and modern States (as well as the international institutions receiving by these latter a delegation of authority) has always maintained an absolute monopoly within their borders concerning the power to issue money and to regulate the internal monetary market.

Using a not academic language, it is possible to define a blockchain as a decentralized, transactional database technology that facilitating validated, tamper-resistant transactions consistent across a large number of network participants called nodes. In the blockchain economy, agreed-upon transactions are enforced autonomously following rules defined by smart contracts and peer-to-peer operators. So, the blockchain economy manifests itself in a new form of organizations (that is, Decentralized Autonomous Organizations, DAO) having governance rules specified in the

blockchain. It is exactly the word “autonomous” related to money transaction which represents the real problem for public authorities: these transactions in fact influenced the monetary system whose fluctuations, even if they are expressed in very small percentages, had a relevant impact on the globalized financial world and, moreover, on the people’s life.

Money is a particular financial and economic tool whose value depends, as it normally happens for any good, on supply and demand: however, when its value changes, it modifies the spending power (and quality of life) of citizens and the business prospects of enterprises. So, States always have to avoid high fluctuations changing citizens' consumption and savings as well as businesses' income and investments. This means that it is not possible for a State to renounce to control the amount of money circulating and to regulate its value and rate exchange, usually by agreements with other States. Many variables modifying the existing equilibria has already existed and they often get more difficult public authorities’ controls and regulations: there is no public interest to allow cryptocurrencies to spread further.

Since their birth at the end of Twentieth century, the blockchain and cryptocurrencies whose amount and value escape States’ control have been tolerated because their real value and impact on the monetary market actually concerned few people and in particular who previously accepted the risk of the high volatility of these alternative currencies. This excessively tolerant attitudes toward to the cryptocurrencies progressively created an important lack in the control of sales linked to illegal actions (drugs, not registered weapons, stolen objects, etc.) or other sales in which buyers and sellers wanted to evade VAT or the entire taxable amount of a supply of goods or services: so cryptocurrencies became the preferred tools for many financial operations involving people who are interested in a currency guaranteeing payments and untraceable transactions. The high volatility of the value of cryptocurrencies is also interesting for financial speculators: however, their earnings are normally in competition with most of operators of the world monetary system. There is no public interest to enlarge the space for these behaviours reducing the fiscal flows to the public funds.

As this regard, the idea that the main relevant “valued added” of cryptocurrencies is represented by their capacity to enable faster and more efficient foreign payments and remittances is a “fantastic tale”: new technologies allow to have a similar operational speed with the “traditional” currencies, but these latter also guaranteed a more stable value in the brief term. Only speculators (or thieves) really need quick transactions where “seconds” are fundamental. Besides, it is possible to reduce the cost of the financial operations using the bank system: this only depends on governments’ decisions, that is they can promulgate rules obliging financial intermediaries to strongly reduce their fees (obviously cutting taxations on banking fees too). Conclusion: there is no public interest to increase the diffusion of cryptocurrencies with the aim to reduce the cost of financial transactions.

In the face of the attraction concerning a growing number of economic operators for the cryptocurrencies with their senses of “freedom from the system rules” and “more privacy and security”, some States and International institutions communicated that they evaluated the hypothesis to create digital currencies. It is important to note that European Central Bank immediately highlighted that its future digital currency will not be a cryptocurrency even if it will have the same positive characteristics, obviously excluding the secrets concerning transactions. It is not possible to imagine an ECB’s different attitude: in its 2015 annual report it in fact defined virtual currencies “the greatest potential threat to monetary policy and price stability, financial stability and prudential supervision”. So, in the future a great diffusion is only for new transparent digital currencies increasing the number of payment tools under the strong States’ control and using saving energy productive systems: the other cryptocurrencies can survive only if their “world” has limited dimensions, that is they represent a particular “niche” in the monetary market which is reserved to highly risky speculators’ transactions. Moreover, it is necessary to increase the public control on people operating in this “niche” to reduce the space for tax evaders, persons laundering illegal money or earnings linked to illicit transactions.

Finally, it is important to note that a relevant exception is represented by the Not Fungible Tokens (NFTs): a NFT is a unique and non-interchangeable unit of data stored on a blockchain, a form of digital ledger/register. NFTs are normally associated with reproducible digital files such as photos, videos, and audio: they use a digital ledger to provide a public certificate of authenticity or proof of ownership. At the same time, they do not restrict the sharing or copying of the underlying digital files. The lack of interchangeability/fungibility characterizes and distinguishes NFTs from blockchain cryptocurrencies, such as Bitcoins. Their diffusion creates less problems for the environment and world monetary system: the energy consumption related to their creation is in fact low and they have the same use of digital files they are associated, that is they simply represent some collectors’ goods used as safe havens. However, there exist discussions about their real utility (and need to public legal protection) and the great risks of speculative “bubbles” existing in the non-regulated markets: they are in fact used as proofs of ownership in not legal market and it is difficult to understand why the protection of copyrights and trademarks needs NFTs and the existing rules are not enough. At this purpose, people purchasing NFTs have no the copyright on the associated files if people creating them clearly sell them: it is evident that this is not an actual problem in “particular markets” where creditors normally use quick “tools” (but usually not connected to legal ways) to recover their rights/money.