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Cryptocurrency, The Catalyst For A Dystopian Environment If Left Unchecked

In order to understand what cryptocurrency is, one must understand how blockchain works. Cryptocurrency is as the name may imply, an encrypted form of currency that can be exchanged just like any other tender. That said, it is not physically held like the USD or Euros. It is kept in a digital wallet with multiple layers of protection, assuming a crypto holder established the recommended measures of security. There exist hardware wallets that operate as a drive for storage of said currencies as well. Moving on, every transaction’s data is stored in a block within the blockchain network. Furthermore, every transaction produces a new block. These blocks of code operate as a ledger that is recorded across all nodes throughout the blockchain. A hacker would have a very hard time creating duplicates of a transaction as a means of profit due to the fact that thousands of nodes have their own copy. Any hacker would have to break into thousands of computers, or nodes in this case, in order to breach a block’s encryption. With that said, blockchain has a high consumption of power. Take Bitcoin for example. Not all Bitcoins are in circulation for the time being. One must ‘mine’ the blockchain in order to obtain it. Or, one can trade on an exchange in a manner that is akin to stocks or the forex; but, only the coins that have already been mined and sold are in circulation for trading. Mining for Bitcoin or any other cryptocurrency involves relying on computational power to break the encryption of a block. Over the years, more and more power has been required to solve incredibly complicated math problems and these problems become more complicated as more Bitcoins come into circulation. On average, the same amount of power as an American household is Bitcoin’s consumption level. Cryptocurrency mining and its overall use will lead to devastating results if left unchecked.

Cryptocurrency is an economic opportunity at the cost of our environment. The power consumption of mining is very high. According to a paper by associate professor Liana Badea of Bucharest University, and lecturer [Mariana Claudia Mungiu-Pupӑzan](https://ieeexplore.ieee.org/author/37088820239) of the University of Targu-Jiu, Bitcoin annually consumes between 73.1 and 78.3 terawatt-hours (TWh) of electricity (The Economic and Environmental Impact of Bitcoin, III, [3](https://ieeexplore.ieee.org/abstract/document/9385063)). That’s equivalent to the consumption of power from the average American household when broken down into a daily metric. Moreover, it’s important to take note of the fact that anyone has access to mining hardware. There are drives that are specifically made for crypto mining that cost as little as 500 USD. Of course, more powerful mining hardware is often pricier and in order to be efficient, one would have to use numerous drives. Moreover, cryptocurrency mining comes with significant CO2 emissions. Between 3-15 tons of it. It is estimated that 98% of Bitcoins will be mined by 2028. In other words, 3-15 tons multiplied between now and 2028 ([75](https://ieeexplore.ieee.org/abstract/document/9385063)). That’s seven years. Another factor that’s worth pointing out is that every attempt to break into the blockchain creates a new block ([TwinsCoin](https://eprint.iacr.org/2017/232.pdf), Nakamoto’s Blockchain 3.1, 4). Furthermore, all blocks are permanently stored in the network. One might wonder how much it would cost to keep so much data. For certain, it will mean significant increases in storage capacity; which in turn, would cost more power and resources. Needless to say, Earth’s resources are finite.

For the longest, most cryptocurrency mining exhausted the resources of one nation: China. Prior to the recent crackdown, 60% of mining occurred in China and the remaining 40 is divided among other nations such as the US, Canada, or the EU. [In the Life Cycle Assessment of Bitcoin Mining](https://pubs.acs.org/doi/abs/10.1021/acs.est.9b05687) (pg. 3), it’s shown that the US contributed 10.9% of the aforementioned 40% of crypto mining across the globe. Canada contributes as much as the US as well. That said, since the crackdown in China, these percentages have fluctuated. Aside from that, another contributing factor to this fluctuation is that the American government seems to be embracing cryptocurrency more than the Chinese government. For example, Taylor Locke of CNBC has pointed out in an article that the head of the fed reserve, Jerome Powell, has no intention of banning cryptocurrencies ([4](https://www.cnbc.com/2021/10/04/crypto-news-compound-defi-bug-elon-musk-on-regulation-tiktok-nfts.html)). Also, Helen Partz of the Cointelegraph has made note of a newly founded crypto mining firm called Prime Block ([2](https://cointelegraph.com/news/ex-wall-street-execs-lead-new-bitcoin-mining-firm-as-us-hash-rate-soars)). The firm is led by Guarav Budhrani, a Goldman Sachs veteran. On the stateside, it seems that both government and corporations are quick to let cryptocurrency and mining into the mainstream as it is a profitable new venture. Moreover, the corporations are not just allowing crypto into the mainstream; they are entering the market with far more economic advantages and are building entire mining facilities.

The classification of cryptocurrency has a lot of gray areas. Governments are divided on what it is. At large, the US federal government considers it to be a tool or a form of e-payment. On the other hand, Germany does not consider it a legal form of tender (IV, [2](https://ieeexplore.ieee.org/abstract/document/9385063)). This position is contrary to El Salvador, which recently legalized Bitcoin as a form of payment. On the stateside, the classification continues to vary. Restaurants and other types of small businesses are accepting Bitcoin as a form of payment. Meanwhile, the’ whales’, a term avid crypto traders use to refer to big banks, big businesses, or anyone with billions of dollars; have been moving in on the market. All of this is occurring while the federal government is wrapping its head around the technology behind it all. Being as divided as they are on the matter, the government has done little to regulate the crypto market. That said, stifling as regulation can be, hedge funds or whales will dominate the entire market if there’s no authority to keep them in check. However, the crypto market is extremely young and ever-expanding. With that, can come numerous opportunities for economic individual investors. It’s still in the phase of early adoption, which further proves the potential for devastating consequences. What will happen when the early and late majority move in? Will society be able to sustain so many crypto transactions? Regulating the market early on may be a step in the right direction. However, market regulations often favor big businesses rather than individuals. Or, big businesses are better equipped to adapt than individuals are. Another solution is to innovate and build a more sustainable blockchain network. Proof of Stake consensus is a good step forward since it relies on a consensus mechanism in order to validate blocks, rather than mining. An example of this is the Ethereum cryptocurrency and the blockchain network it operates on; the Ethereum network. That said, the cost of exchange on the Ethereum blockchain: gas fees; fluctuate back and forth depending on how many transactions are occurring. Bear in mind, the cryptocurrency market operates 24/7. Almost anyone can access this market from the tip of their fingers and will complete numerous transactions by the time government officials have finally figured out how to define or classify Bitcoin. Sadly, by the time they do, perhaps 8000 other coins will be on the market, rendering them in the same predicament as before.

Cryptocurrency is dystopian by nature. At least, at this point in time. Its purpose is to enable a truly free market without regulation. In an ideal world, that means everyone has the opportunity to pursue economic growth and that such opportunities are equal among all. However, this isn’t really the case since big businesses are moving in to monopolize and manipulate the market before the government does anything. The dystopian nature of cryptocurrency lies here. Most holders and traders in the market have entered it because of a shared belief that the old systems have failed. The stock market, the forex, the banking system, and so forth. Corporations, being as profit-obsessed as they are, leave little room for individual growth. Despite this, people are jumping into the market with limited knowledge or understanding. Such a high volume of investing, being the sum total of big businesses and individuals; combined with the increasing mining activity is alarming.

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