

Profitability of Ethereum vs. Bitcoin - Ramanand Kachhia

Which is more profitable: Ethereum mining or Bitcoin mining?

<https://coincentral.com/ethereum-mining-vs-bitcoin-mining-which-is-more-profitable/>

There are a few essential contrasts between Ethereum and Bitcoin mining, which begin from the way that these two cryptographic forms of money were created in view of altogether different purposes. From the beginning, it could be hard to decide the changes between these cryptos, yet dig somewhat more profound, and you find a glaring difference between them. We should pause to talk about the essential distinctions between these cryptos and what they mean for the Ethereum versus Bitcoin mining processes.

Understanding Bitcoin Mining

As portrayed by Satoshi Nakamoto, Bitcoin is decentralized, shared electronic money framework, the digital currency's mysterious maker. The convention capacities use a numerical condition that adds squares to a chain of exchanges known as a blockchain. Each square purposes a hash code from the past court to timestamp the recently added block.

Blocks are added to the blockchain at regular intervals through excavators who go up against one another to sort out a numerical condition (SHA-256) whose answer should start with four zeroes. The interaction requires broad PC handling power, likened to electrical use. The main digger to find an appropriate solution for the situation gets the honor of 12 BTC.

Each digger (hub) on the blockchain cooperates to guarantee the longest chain of exchanges is the substantial chain. Up to 51 percent of the hubs are straightforward; the blockchain stays legit. The demonstration of approving the chain is called agreement. This verification of the working framework is at the center of Bitcoin's convention.

Understanding Ethereum vs. Bitcoin Mining

Ethereum varies from Bitcoin from numerous angles. As far as one might be concerned, Ethereum is a brought-together programming stage. Not at all like Bitcoin, Ethereum has a focal office and a notable organizer, Vitalik Buterin. Ethereum upholds a double record structure where both private key, controlled, and contract-code accounts exist, the last option being known as savvy contracts.

Brilliant agreements execute foreordained activities after getting crypto to the agreement's location. Ethereum utilizes the Solidity programming language, which accommodates simpler savvy contract mix. Ethereum's savvy contracts assist with working with token creation utilizing the ERC-20 and ERC-721 conventions.

ERC-20 has turned into the essential symbolic creation convention in the crypto space, while, ERC-721 keeps on seeing reception because of an expansion in the tokenization of both advanced and true resources. The principle distinction between the two is that ERC-20 tokens are fungible.

How Does Ethereum Mining Work?

The essential capacities behind Ethereum's mining interaction are equivalent to Bitcoin. Hubs contend with one another to finish a numerical condition. The hub to add the following square to the blockchain gets a prize of around 3.5 ETH. A court is connected to the ETH blockchain each 14-16 seconds.

Ethereum uses the sthash mining calculation instead of the SHA-256 calculation found in Bitcoin's mining interaction. Both mining processes utilize verification of work frameworks. Like this, both cryptos consume a lot of power when mined.

Ethereum vs. Bitcoin Mining: Profitability Comparison

It is hard to create an authentic Ethereum versus Bitcoin mining benefit examination since there are countless variables to consider. Both digital currencies will require a significant venture to fire up a mining activity.

You ought to consider how Bitcoin is more difficult to find than Ethereum. This shortage

could bring about significant additions in the worth of Bitcoin later on. Nonetheless, Ethereum fills a unique need in the crypto space, and both their ERC-20 and ERC-712 conventions are the foundation of most of the tokens in the commercial center. This reliance could prompt a situation where Ethereum overwhelms Bitcoin in regards to adding up to showcase capitalization before long.

<https://ethereum.org/en/developers/docs/consensus-mechanisms/pow/mining/#:~:text=%2Dof%2Dwork-.What%20is%20Ethereum%20mining%3F,of%20proof%2Dof%2Dwork>

What is Ethereum Mining?

Mining is the method involved with making a square of exchanges to be added to the Ethereum blockchain.

Ethereum, like Bitcoin, presently utilizes a proof-of-work (PoW) agreement component. Mining is the soul of confirmation of work. Ethereum excavators - PCs are running programming - utilizing their time and calculation ability to handle exchanges and produce blocks.

Who can become a miner on Ethereum?

Anybody can mine on the Ethereum network utilizing their PC. Be that as it may, not every person can mine ether (ETH) productively. Much of the time, diggers should buy devoted PC equipment to mine beneficially. While it is valid that anybody can run the mining programming on their PC, it is far-fetched that the normal PC would acquire sufficient square prizes to take care of the related expenses of mining.

<https://www.investopedia.com/articles/forex/051115/bitcoin-mining-still-profitable.asp#:~:text=In%20recent%20years%2C%20the%20mining.it%20was%20a%20decade%20ago>

Bitcoin Mining Difficulty

It is hard to create an authentic Ethereum versus Bitcoin mining benefit examination since countless variables are considered. Both digital currencies will require a significant venture to fire up a mining activity.

You ought to consider how Bitcoin is a lot more difficult to find than Ethereum. This shortage could bring about significant additions in the worth of Bitcoin later on. Nonetheless, Ethereum fills a unique need in the crypto space, and both their ERC-20 and ERC-712 conventions are the foundation of most of the tokens in the commercial center. This reliance could prompt a situation where Ethereum overwhelms Bitcoin regarding adding up to showcase capitalization before long.

Cons of Ethereum

<https://www.benzinga.com/money/is-ethereum-a-good-investment/>

Volatility: On the off chance that you purchased Bitcoin on December 17, 2017, the cost was \$20,000. Weeks after the fact, you could not sell your speculation for more than \$7,051. In spite of the fact that you would do incredible now, to stay away from agonizing misfortunes temporarily, watch out for the market.

High exchange expenses: Ostensibly, Ethereum's biggest disadvantage, exchange charges, keeps the organization from arriving at a formal reception. Utilizing Ethereum's blockchain can cost many dollars, so retail financial backers with more modest measures of capital are evaluated out from utilizing the organization. While other smart contract blockchains have less expensive charges, Ethereum has the most applications and use cases based on its blockchain.

New guideline: The public authority is probably not going to allow digital forms of money to remain totally unregulated for a really long time. New guidelines could disrupt plans of action, and cause crashes that are completely beyond your control.

The danger of online hacking: Hacks are a danger confronting numerous digital currency financial backers. Most trades let you trade your cryptos utilizing a versatile application or site. Anyway, multiple clients likewise store their crypto on trade wallets. This leaves them powerless to lose their ventures should the trade get hacked, and their private keys are taken. Digital currency hung on most exchanges isn't guaranteed by the FDIC.

Rivalry: Many smart contract stages keep Ethereum honest, particularly Binance Smart Chain, Cardano and Polkadot. While these cryptographic forms of money offer

preferable adaptability over ETH, they need decentralization and the powerful Defi biological system that Ethereum has on its organization.

Evidence of Work Consensus: Although Bitcoin additionally utilizes confirmation of work agreement, this is, even more, a con for Ethereum. Exchanges on bitcoin are simply essential to move the crypto, while Ethereum's organization is utilized for an assortment of capacities. Confirmation of work is more costly and more slow than evidence of stake, which numerous ETH contenders are presently using.

Cost of hardware, cost of electricity, expected profit - Wesley Fegan

The basic hardware required is a chassis and motherboard supporting multiple graphics cards, as well as a power supply strong enough to support the hardware.

Graphics cards will be treated separately as they are one of the most important factors that determine job throughput.

The basic components can be bought separately or all together. Prices can vary widely depending on the quality of parts. A multiple GPU motherboard can be as cheap as ~\$60 or as expensive as >\$1000.

A seller on AliExpress sells the “B85” chassis which includes a motherboard, a 2000 Watt power supply, ram, a processor, as well a CPU. The system can accommodate up to 8 graphics cards. The cost is just \$355 for one unit; a %2 discount applies on order of 2 or more units. The only setback is that the shipping cost is \$242.31.

<https://www.aliexpress.com/item/1005003593023289.html>

There are far too many permutations of this base hardware to make a comprehensive analysis of their cost. The chassis type used will also depend on the client's needs. Both Ethereum and Bitcoin can be mined using GPUs so the base hardware is less relevant when comparing the two.

I will also warn against the use of so-called Ant Miners or other dedicated ASIC based hardware. They have a much higher upfront cost than GPU mining and use a considerable amount of electricity. Ant Miners can only mine Bitcoin and currencies using a similar algorithm, which means that if Bitcoin loses popularity the miners cannot be resold to recover investment. Should the client choose to implement their own currency using the same algorithm as Bitcoin, they will have to wait for firmware support for their currency. In the beginning, it will make much more sense for the client to focus on general use hardware.

As stated earlier, one of the most important factors determining throughput is the graphics card used. The following variables will need to be taken into consideration: the cost of the card, currency generated per day, and its electricity usage.

As of the 28th of March 2022:

1 BTC = \$47,651.20 USD

1 ETH = \$3,382.29 USD

We will ignore the cost of the base hardware and consider an initial unit investment of \$10,000 USD towards graphics cards.

All values are in US dollars.

The currency generated per day was taken from minerstat.com and kryptex.org.

The energy cost was determined by using the current average commercial energy rate in New Jersey: \$0.12.

gpu	price/unit	units/\$10000	eth/day/gpu	eth/day	eth/yr	electricity/yr	profit/yr	days until green
AMD Vega 56	~\$800	12	\$2.59	\$31.08	\$11,344.20	\$2,102.40	\$9,241.80	379
Nvidia CMP 170HX	\$4,980	2	\$8.80	\$17.60	\$6,424	\$467.20	\$5,956.80	610
gpu	price/unit	units/\$10000	btc/day/gpu	btc/day	btc/year	electricity/yr	profit/yr	days until green
AMD Vega 56	~\$800	12	\$2.21	\$26.52	\$9,679.8	\$2,102.40	\$7,575.40	463
Nvidia CMP 170HX	\$4,980	2	NO DATA	NO DATA	NO DATA	\$467.20	NO DATA	NO DATA

There are a few key takeaways in this data.

- Many weaker cards use more electricity, but generate more profit than few more-powerful cards.
- Ethereum is more profitable than Bitcoin.
- Interest is waning in Bitcoin.

The Nvidia CMP 170HX, despite being released last year, and being crypto-oriented, hasn't been widely used for Bitcoin.

It has however been used for Ethereum and most of the crypto-related mining stats posted are in respect to Ethereum.

The truth is that Bitcoin is a limited asset. There can only be a certain amount of Bitcoin created. This is intended to protect it from inflation. The issue here is that as more Bitcoin are mined, the harder it is to solve the remaining blocks. The result is that stronger hardware is needed and less money can be made.

<https://www.investopedia.com/articles/forex/051115/bitcoin-mining-still-profitable.asp>

Ethereum on the other hand does not have a hard limit in the number of coins that can be created. The only limitation is that 18 million coins can be created per year. This means that Ethereum is much more feasible than Bitcoin to mine and has room for growth.

<https://www.investopedia.com/news/why-ethereum-cofounder-proposing-hard-cap/>

Based on my research, I would recommend basing the new currency on Bitcoin.

Environmental impact of each coin - Doron Griffin-Tann, yoink

[Fairplanet link but not AIDS](#)

It is estimated that each Bitcoin transaction uses around 2100 kilowatt hours (kWh), which is roughly what an average US household consumes in 75 days. When this energy is supplied from non-renewable energy sources, cryptocurrencies like Bitcoin can generate exorbitant greenhouse gas emissions. Bitcoin's annual carbon footprint is comparable to the release of 97.2 megatonnes of carbon dioxide - roughly the annual emissions of the whole country of Argentina.

- ASIC systems, although more energy efficient than normal computers, require more electricity since they are typically kept running incessantly, and also require energy to cool down the hardware to prevent overheating, either with internal fans or with air conditioning.

In total, Bitcoin mining uses 91 TWh of electricity each year, which is about 0.5 percent of the world's electricity consumption, more than the electricity consumed by all of Finland annually and seven times more than what Google consumes each year.

[pcmag environmental impact of crypto](#)

There's also the issue of physical electronic waste. Computers, graphics cards, purpose-built ASIC rigs, and more are used for mining. Since increased computing power translates to an advantage in the race to mine more coins, people are constantly upgrading and throwing away old equipment, [producing up to 30,000 tons](#) of electronic waste every year.

How to create a new cryptocurrency - Alexander Lleva

Where Cryptocurrencies come from :

<https://cryptocurrencyfacts.com/how-is-cryptocurrency-created/>

Cryptocurrency is created by code. In many cases, new coins are created when transactions are confirmed by a process known as mining.

With that said, while coins like Bitcoin and Ethereum use mining, not every cryptocurrency uses mining to generate new coins, and coins can be created in some other ways.

How exactly coins are created depends on what is defined by a given cryptocurrency's code. For example, instead of mining or mining alone, a cryptocurrency may create some tokens upon launch as developer rewards, or a cryptocurrency may reward tokens as interest to holders of a token.

More Points to Consider to Understand How Cryptocurrency is Created

Consider the following points:

- Cryptocurrency is software. Every function, from how transactions are recorded to how data is stored, is dictated by code.
- Especially for cryptocurrencies whose main function is to act as money, cryptocurrency transactions are typically stored in a type of database known as a blockchain (other cryptos use unique technology, but the gist is the same).
- What we think of as cryptocurrency, for example 1 Bitcoin, is just numbers recorded on a cryptocurrency's blockchain. Another word for that stand-in for value is "token" (often also called a "coin").

- Cryptocurrencies are created by algorithms that rely on cryptography. That is why it is called “crypto” currency. Every transaction relates back to unique cryptographic codes that secure the network.
- Cryptocurrency software is decentralized and distributed, meaning it is hosted on many peoples’ computers across the world instead of just on one server by one company.
- The algorithms generally are written to award coins to computers that add transactions to the blockchain. The process of adding transactions to the blockchain is known as mining.
- The code of the cryptocurrency defines things like maximum supply, mining rewards, etc.
- Thus, for most cryptocurrencies, the main way new coins are created is by people all over the world running hardware that adds transactions to the blockchain. Otherwise, cryptocurrency tokens are created by other mechanisms contained in a cryptocurrency’s software.
- Lastly, the code for almost all cryptocurrencies is public, so anyone can check how coins are created.

FACT: Because the supply and inflation of a given cryptocurrency is defined by code, it is known upfront whether a coin is inflationary or deflationary. The only way to change that is to change the software. To change the software, the majority of computers running the software have to agree on an upgrade. In most cases, something like a change to the rate of supply would result in a “fork” (a new version of the software). Given all of this, it is unlikely the supply or rate of issuance of a coin like Bitcoin would ever be changed. Thus, we can be confident the only coins that will ever be issued are the ones defined by the code.

What language is Bitcoin written in?

<https://bitcoin.org/bitcoin.pdf>

Bitcoin is not written in a programming language, it’s written in English (with trace amounts of math, code examples and drawings and charts).

There is a reference implementation of the Bitcoin protocol, called Bitcoin Core, which is written in C++, but *this is not Bitcoin* - it’s merely one of the many programs that implement that protocol, and there are such implementations in almost any programming language you can think of (as well as several you’d never have thought of).

What language is Ethereum written in?

<https://www.freelancinggig.com/blog/2018/06/15/what-programming-language-is-ethereum-written-in/>

What’s the difference between Bitcoin and Ethereum?

<https://www.investopedia.com/articles/investing/031416/bitcoin-vs-ethereum-driven-different-purposes.asp>

Bitcoin Mining

<https://www.investopedia.com/tech/how-does-bitcoin-mining-work/>

- By mining, you can earn cryptocurrency without having to put down money for it.
- Bitcoin miners receive bitcoin as a reward for completing "blocks" of verified transactions, which are added to the blockchain.
- Mining rewards are paid to the miner who discovers a solution to a complex hashing puzzle first, and the probability that a participant will be the one to discover the solution is related to the portion of the network's total mining power.
- You need either a graphics processing unit (GPU) or an application-specific integrated circuit (ASIC) in order to set up a mining rig.

History of Bitcoin, the first cryptocurrency

<https://money.usnews.com/investing/articles/the-history-of-bitcoin>

Bitcoin was created out of the turmoil of the 2008 Great Recession as distrust of banks and their role in the financial system grew. An individual or a group of people going by the name Satoshi Nakamoto issued a white paper to address the centralized control of money and the trust required in handling citizens' cash.

In the traditional financial system, transactions can be reversed or meddled with by third parties, and transaction costs can add up. Bitcoin was presented as a way to transact without using a third party. Rather, the Bitcoin system uses cryptographic proof to maintain the integrity of the network instead of relying on third-party banks and other institutions.

Advantages of Bitcoin

<https://roboticsandautomationnews.com/2021/12/14/what-are-the-main-benefits-of-bitcoin-get-all-the-essentials/47642/>

Pros and cons of bitcoin

<https://mint.intuit.com/blog/investments/pros-and-cons-of-bitcoin/>