

Ethereum: Platform vs Currency

Why comparing Ethereum to Bitcoin misses the point entirely. Understanding the world computer and why it matters.

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10 min

The most common mistake people make about Ethereum is comparing it to Bitcoin. "Which is better?" they ask, as if choosing between a hammer and a screwdriver. The answer depends entirely on what you're trying to build. Bitcoin is designed to be money. Ethereum is designed to be a platform for building things — including, but not limited to, new forms of money.

The Limitation That Sparked an Invention

Bitcoin's design is deliberately simple. It does one thing — transfer value without intermediaries — and it does that thing exceptionally well. But that simplicity comes with constraints. Bitcoin's scripting language is intentionally limited. You can't build complex applications on Bitcoin because Satoshi Nakamoto didn't want you to. Complexity introduces attack surfaces.

In 2013, a nineteen-year-old programmer named Vitalik Buterin proposed something different: what if you could build a blockchain that was programmable? Not just "send X coins to Y address," but arbitrary logic: "If condition A is met, then execute action B, unless C happens, in which case do D."

This wasn't just a technical improvement. It was a conceptual leap. Bitcoin proved you could have money without banks. Ethereum asked: what else could you do without intermediaries?

"Bitcoin is a calculator. Ethereum is a computer. Both are useful. They're not competing — they're different tools."

Smart Contracts: Code as Law

The core innovation of Ethereum is the *smart contract* — a misleading name for a simple concept. Smart contracts aren't particularly smart, and they're not legal contracts. They're just programs that run exactly as written and can't be stopped or altered once deployed.

Think of a vending machine. You insert money, press a button, and receive a product. No negotiation, no human judgment, no possibility of the machine deciding it doesn't feel like giving you your crisps today. The rules are mechanical and unstoppable.

Now imagine a vending machine that could hold millions of pounds, interact with other vending machines, and execute complex sequences of actions based on external events. That's Ethereum.

KEY INSIGHT

Smart contracts aren't "smart" — they're just unstoppable. Once deployed, they execute exactly as programmed, regardless of whether that's what anyone intended. This is both their power and their danger. The code is the contract. There's no customer service to call.

Every Ethereum transaction is processed by thousands of computers worldwide, each arriving at the same result. This global consensus means no single party can

alter the outcome. When you interact with a smart contract, you're not trusting a company, a government, or a person. You're trusting mathematics and the alignment of thousands of economically incentivised validators.

What People Actually Build

Abstract concepts become clearer through examples. Here's what Ethereum's programmability has enabled:

Decentralised Finance (DeFi): Lending platforms where you can borrow against crypto collateral without credit checks or banks. Exchanges where you can trade tokens without an intermediary holding your funds. Interest rates determined by supply and demand in real-time, not by committee decisions.

NFTs and Digital Ownership: Beyond the overpriced JPEGs, NFTs represent a genuine innovation — provable digital ownership. Concert tickets that can't be counterfeited. Game items that players actually own and can trade. Royalties that automatically flow to creators on every resale.

DAOs (Decentralised Autonomous Organisations): Organisations governed by code rather than boards. Members vote with tokens. Treasuries are managed by smart contracts. Some DAOs now manage billions in assets with no CEO, no headquarters, and no legal entity.

Stablecoins: Programmable dollars that move at the speed of the internet. Over \$100 billion in stablecoins run on Ethereum, settling more value than many traditional payment networks.

The Cost of Decentralisation

Ethereum's design involves genuine trade-offs that informed observers should understand:

Gas fees can be prohibitive. Every computation on Ethereum costs "gas," paid in ETH. During peak demand, simple transactions have cost \$50 or more. This prices

out small users and makes certain applications economically unviable. Layer 2 solutions (covered elsewhere in the Library) are addressing this, but it remains a real limitation.

Smart contracts are immutable. Once deployed, code can't be easily changed. This means bugs can be permanent. In 2016, a smart contract bug led to \$60 million being drained from "The DAO." The only solution was a controversial hard fork that split the network in two. Code is law — even when the law has bugs.

Complexity creates attack surface. Bitcoin's simplicity is a security feature. Ethereum's flexibility means more can go wrong. Exploits and hacks in DeFi protocols have cost billions. The innovation comes with risk.

Scalability is an ongoing challenge. Ethereum processes roughly 15-30 transactions per second. Global adoption requires orders of magnitude more capacity. The roadmap exists, but execution is years away from completion.

ETH: The Asset

Separate from Ethereum the platform is ETH the asset. Understanding the distinction matters:

ETH is "gas" — the fuel required for all Ethereum transactions. Every smart contract interaction, every token transfer, every NFT mint requires ETH to pay for computation. This creates inherent demand proportional to network usage.

Since "The Merge" in September 2022, Ethereum has used Proof of Stake rather than Proof of Work. Validators must lock up ("stake") ETH to participate in consensus. Currently, over 30 million ETH — roughly 25% of supply — is staked, earning yields of 3-5% annually.

And a portion of transaction fees is now "burned" (destroyed), making ETH potentially deflationary during periods of high network activity. In some months, more ETH is burned than issued, reducing total supply.

THE INVESTMENT LENS

The bull case: ETH is a productive asset (generates yield), has utility demand (gas), and is becoming scarcer (burning). If Ethereum becomes the dominant platform for decentralised applications, ETH captures value from that growth. The bear case: competition from other platforms is fierce, scaling challenges persist, and regulatory uncertainty looms. Unlike Bitcoin's "digital gold" narrative, Ethereum's value proposition requires continued technological execution.

Platform Risk and Opportunity

Ethereum faces competition that Bitcoin largely doesn't. Solana offers faster, cheaper transactions. Avalanche provides subnet customisation. Dozens of "Ethereum killers" have launched with technical improvements. Some have found niches. None has displaced Ethereum as the primary smart contract platform.

This is partly network effects — developers build where users are, users go where applications are. It's partly the Lindy effect — Ethereum has eight years of battle-testing. And it's partly ecosystem depth — the tooling, the talent, the liquidity. These moats are real but not impenetrable.

The rational view: Ethereum is currently the default smart contract platform, but "currently" is doing significant work in that sentence. Position sizes should reflect both the opportunity and the execution risk.

A Computer for the World

In 2015, Ethereum launched with a simple proposition: what if there was a computer that nobody owned, nobody could turn off, and everyone could use? Eight years later, that computer processes billions of dollars daily, hosts thousands of applications, and has spawned an entirely new category of financial services.

Whether you find this exciting or concerning depends on your priors. What's beyond debate is that Ethereum works. Smart contracts execute. DeFi protocols function. Digital assets transfer. The technology has proven itself.

The questions that remain are about adoption, regulation, and competition — not technical feasibility. The computer exists. The question is what the world will choose to build on it.

Bitcoin asks: can money exist without states? Ethereum asks: can *agreements* exist without intermediaries? Both questions are profound. Both deserve serious consideration. And understanding that they're different questions is the first step toward understanding either answer.

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