

DINGOCOIN & THE BLOCKCHAIN TRILEMMA

The Dingocoin Guardians

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Abstract

The blockchain trilemma, introduced by Vitalik Buterin, highlights the inherent challenge in achieving decentralization, security, and scalability simultaneously. This article examines the blockchain trilemma within the context of payment-focused cryptocurrencies, with a particular emphasis on Dingocoin. By comparing Dingocoin to major cryptocurrencies like Bitcoin, Litecoin, and Dogecoin, as well as emerging players such as Kaspero and eCash, we evaluate how Dingocoin balances these three dimensions. Utilizing a bubble chart visualization, we explore how Dingocoin achieves scalability through fast transaction speeds and low fees, decentralization via fair governance and distributed ownership, and robust security by leveraging Script Proof of Work and merge-mining with Litecoin and Dogecoin. The analysis reveals that Dingocoin effectively balances the blockchain trilemma hitting a sweet-spot, offering a practical, secure, and decentralized solution for real-world payments without compromising on core crypto values. This makes Dingocoin a great contender among payment-focused cryptocurrencies.

1 Introduction to the Blockchain Trilemma

Vitalik Buterin famously described the **blockchain trilemma** as the challenge of achieving **decentralization**, **security**, and **scalability** simultaneously. However, achieving all three is difficult because optimizing for two often compromises the third. For instance, highly decentralized and secure networks, like Bitcoin, can struggle with scalability, leading to slower transaction speeds. On the other hand, scalable and secure systems may require a level of centralization, undermining the principles of decentralization. This trilemma drives ongoing innovation as developers seek optimization.

Relevant coin comparisons

In this article, we compare Dingocoin to key coins that together represent roughly **80% of the global crypto market cap**, zooming in on cryptocurrencies suitable for payments. We cover well-known projects like Bitcoin, Litecoin, Dogecoin, and Bitcoin Cash, plus emerging contenders like Kaspero and eCash. Our goal is to see how Dingocoin measures up in real-world use and core crypto values compared to its main competitors.

We have chosen to not include platforms such as Solana and Cardano (and most other Proof of Stake projects) as they are intended to be the internal currency of their ecosystem, and not for real-world payments. We have also not included projects with specific use cases such as storage, AI, games etc., and coins designed for privacy payments such as Monero, Zcash, Zano and Verge as they are currently facing heavy regulatory headwinds that will block mainstream adoption¹. These projects also score relatively low on the security dimension due to their limited hashpower).

Instead of including thousands of tokens with essentially similar trilemma characteristics, we have included SHIB as an exemplification. We have not included small and mid-sized projects; some mid-sized projects we could have included are Pepecoin, Groestlcoin, Bellscoin, Fractal Bitcoin, Monacoin, Nimiq, Peercoin and Bitcoin Diamond. Finally we have not included exchange tokens/coins, staking, crypto backed tokens and other crypto projects unsuitable for real-world payments[5].

¹Major exchanges like Binance and OKX have delisted Monero[2]

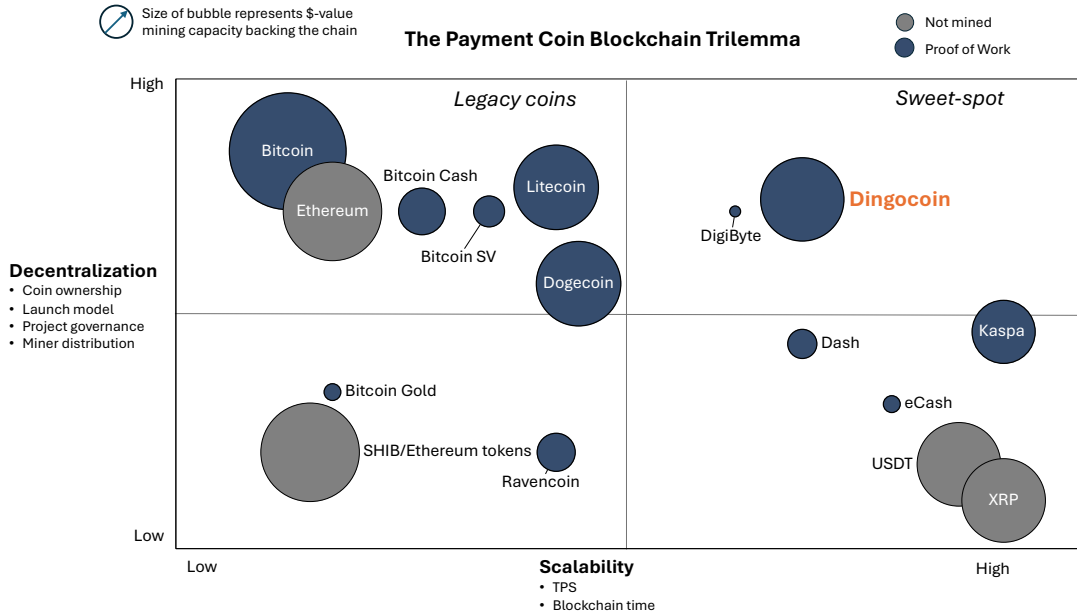


Figure 1: Key cryptocurrencies in the blockchain trilemma.

2 Visualizing the Payment Coin Blockchain Trilemma

As the Trilemma is covering three dimensions, the best way to illustrate various coins' positions is using a so-called bubble chart. In Figure 1, we are comparing Dingocoin to relevant coins in the market. The dimensions in the chart are as follows:

- **Scalability (X-axis):** Indicates combination of transactions per second (TPS) and block times. Further right = higher throughput and/or speedier confirmations.
- **Decentralization (Y-axis):** Reflects coin ownership distribution, launch model, project governance, and miner or validator spread. Higher = more decentralized.
- **Security (Bubble Size):** Shows the dollar value behind each chain's mining capacity. Larger bubbles correspond to a higher cost for 51% attacks. Size of bubble is logarithmic. (Blue/Teal = PoW coins, Magenta/Purple = not mined.)

Note that ratings are indicative and can change. Data is collected in January 2025.

2.1 Scalability

A useful payment coin must handle transactions quickly and cheaply. Real-world commerce cannot tolerate long settlement delays or unreasonable fees. This will undermine usability and adoption. While some high-TPS networks (often PoS-based) prioritize speed, they usually compromise decentralization or security.

How Dingocoin compares

Dingocoin uses 1-minute blocks and will implement **330 TPS** throughput later in 2025². Such capability supports micro-payments, global tipping, and everyday online commerce without delays. The ultra-low fees make sending Dingocoin feel as easy as texting — ideal for both small-scale transfers, informal peer-to-peer situations, and simpler e-commerce.

²Current mainnet operates on 33 TPS with a working testnet on 330 TPS. The mainnet is scheduled to be changed to the testnet during 2025. A new testnet is also being developed capable of even higher TPS

Also, Dingocoin has partnered with an innovative non-custodial wallet called The Flip App that offers instant transfers of Dingocoin to a phone number further demonstrating the call for usability and real-world usage. The Flip App has been downloaded more than 1 million times, each with an amount of Dingocoin on the on-chain address.

In contrast, Bitcoin is secure and iconic but struggles with 10-minute blocks and average fees around \$7, slowing its adoption for smaller payments. Kaspas offers high speeds but grapples with decentralization concerns [1]. Dingocoin stays both fast and broadly accessible.

2.2 Decentralization

Decentralization is a cornerstone of cryptocurrency, as it ensures that no single entity or authority has control over the network, fostering trust, transparency, and resilience. By distributing power across a network of nodes, decentralization reduces the risk of censorship, fraud, or manipulation, enabling users to transact freely and securely without relying on intermediaries like banks or governments. This democratized structure also enhances the system's reliability, as it becomes resistant to single points of failure, ensuring that the network remains operational even if some nodes go offline. For a crypto coin, decentralization is vital to maintaining its integrity, upholding user sovereignty, and adhering to the foundational principle of creating a more open and inclusive financial ecosystem. It strengthens user confidence, making the coin more robust and appealing in an increasingly centralized world.

Assessing Decentralization

To assess degree of decentralization, we rate each coin across four sub-dimensions.

- **Distribution of ownership:** In the spirit of democratization, ownership of the coin must be spread across a large number of users.
- **Launch model:** In a fair launch, everyone, including the project team, has an equal opportunity to participate from the start, usually through mining, staking, or purchasing the coin once it is made publicly available. Also, transparency of transactions are key.
- **Project governance:** Similar to many owning the coin, many should also own the project. Many coins have adopted thinking from the open-source communities
- **Distribution of mining capacity:** Democratization and trust requires many mining entities.

How Dingocoin compares

Thanks to a fair launch with no pre-mine, no single entity began with a massive supply of Dingocoins. Consequently, coin ownership is very spread with as little as 13% of coins sitting in top 3 wallets. Multiple mining pools secure the chain, lowering the risk of any single pool dominating. The Dingocoin community governance follows a Guardian do-ocracy, inspired by open-source communities like Linux and Apache - if you have a worthwhile idea, build it, and the community will adopt it if it proves beneficial[6].

Meanwhile, a coin like Kaspas has faced scrutiny for large early backers and a disguised premine[3], raising doubts about its fair-launch status.

While Doge is clearly a very decentralized project, as much as 30% of the coin ownership sits in the top 3 wallets which somewhat reduces its overall score. Ravencoin even more so with 59% of the coins sitting on top 3 wallets.

eCash and Bitcoin Gold are facing concentration of miners with 53 and 74 percent of the hashrate respectively coming from one miner. This reduces the rating in the bubble chart.

Stablecoins, on the other hand (like Tether), concentrate issuance in a single entity, and meme tokens like SHIB can be overshadowed by unknown issuers and token concentration. Legacy coins such as Bitcoin or Dogecoin do decentralization very well but falter in other trilemma aspects, like speed or cost.

Mined vs. Minted

Mined Coins (Dingocoin, Bitcoin, Litecoin, Dogecoin) introduce new coins on a set schedule via Proof of Work, where miners must invest in hardware and energy. This broad-based process helps secure the network and tie issuance to real-world costs but also consumes ongoing resources. Minted Coins (some PoS or centralized tokens) create new tokens through an issuing authority or smart contract without strict resource constraints. While potentially more energy-efficient, they risk concentrating power among large stakers or depending on a single issuer, making them more vulnerable to centralization or policy shifts.

2.3 Security

Security is critical for cryptocurrencies because it ensures the integrity, reliability, and trustworthiness of the entire system. Cryptocoins operate on decentralized networks where transactions are immutable and irreversible, making it essential to prevent malicious activities like double-spending, hacking, or unauthorized access. A secure cryptocurrency protects user funds, safeguards personal information, and ensures that the network remains resistant to attacks such as 51% attacks or Sybil attacks, which could compromise the system's operations.

Without robust security, user confidence in the coin diminishes, leading to reduced adoption and potential financial losses. Additionally, strong security measures uphold the coin's reputation and its ability to serve as a dependable medium of exchange or store of value. In an environment where trust is decentralized, security becomes the foundation that enables the ecosystem to function efficiently and credibly.

How Dingocoin compares

Leaning on Scrypt PoW and merge-mining with Litecoin and Dogecoin, Dingocoin inherits significant hashing power from established networks, raising the cost of a 51% attack. Open-source code and regular community involvement help identify and resolve vulnerabilities quickly.

Mining Capacity: dollarhash vs. hash rate

Not all hash rates are equal. Different algorithms make direct comparisons useless, so what really matters is how much money an attacker must spend on hardware to gain majority control. We call this dollarhash and it is calculated as stated in equation 1.

$$dollarhash = HWcost_{algorithm} \cdot hashrate \quad (1)$$

For example, the cost for the hardware that can calculate 1 Gigahash/s using the SHA 256 algorithm³ is just above 2 cents. For comparison, obtaining the same hashrate using Scrypt⁴ costs about 575 dollars. Consequently, the absolute hashrates seen by Bitcoin vs. Dingocoin are wildly different.

So for Dingocoin (at 1.5 Petahash/s), the hashdollar exceeds \$1 billion when applying equation 1. This is an amount that's beyond all malicious actors. Dingocoin's dollarhash value dwarfs rivals like Bitcoin Cash and Ravencoin, and although Bitcoin has the highest bar (nearly \$19 billion in hash dollars), Dingocoin still ranks among the most secure PoW chains in the world. In Table 1, we have calculated the dollarhash-value of all major PoW coins[4] that are suitable for payments.

3 Summing it up

Even though other coins out-compete Dingocoin on single trilemma dimensions, Dingocoin finds a sweet spot through balancing all dimensions: fast block times for practical transactions, a fair launch PoW that keeps decentralization intact, and a high real-dollar barrier to attack via merge-mining synergy. In other words, we do not have to give up one aspect of the trilemma for another. By blending user-friendly fees, near-instant confirmations, and a relaxed meme-centric vibe, Dingocoin stands out among payment coins - without giving up open participation, fair governance, or the reliable security that made cryptocurrency so transformative in the first place.

³E.g. Bitcoin uses the SHA 256 algorithm

⁴Scrypt is used by Litecoin, Dogecoin and Dingocoin among others

PoW Coin	dollarhash (\$bn)
Bitcoin	18.91
Litecoin	1.15
Dogecoin	1.15
Dingocoin	1.03
Kaspa	0.18
Bitcoin Cash	0.04
Ravencoin	0.02
Bitcoin SV	0.01
Dash	0.009
eCash	0.003
Bitcoin Gold	0.003
Digbyte	0.002

Table 1: dollarhash values for key PoW coins

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