BINANCE RESEARCH

# The ETH Value Debate

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# 01 / Key Takeaways

- Despite a year of notable milestones - Dencun upgrade, Spot Ethereum ("ETH") ETFs, and a bullish macro environment - Ethereum's measured progress across key metrics relative to the broader market, including ETH dominance reaching its 2021 lows, has placed it at the center of a value debate.
- The Dencun upgrade, a key step in Ethereum's rollup-centric roadmap, reduced Layer 2 ("L2") fees via blobs, benefiting L2 users but reshaping Layer 1 ("L1") fee dynamics. With execution activity shifting to L2s, Ethereum's reliance on smaller data availability ("DA") fees has grown, impacting fee collections, burn rates, and the ultrasound money narrative, while putting it in direct competition with alt-DA layers.
- Ethereum also faces increasing competition from alt-L1s, which have outpaced it on several year-to-date ("YTD") growth metrics, and app-chains, most notably Uniswap's upcoming move to Unichain, potentially altering value distribution further.
- This collection of market dynamics has placed Ethereum in multiple competitive arenas - from L2s and alt-DAs to L1s and alt-L1s - all while still requiring a focus on ETH's value accrual. As a result, Ethereum faces a prioritization dilemma that directly affects value.
- Many believe in the scalability and growth of L2s, viewing fee accrual losses as a secondary concern - some focus on competing in the DA space, but perhaps the larger bet is seen with the demand for ETH as non-sovereign money within the L2 economy. Others, however, prioritize the fee economy, maintaining high value decentralized applications ("dApps") and thereby maximizing value at the L1.
- From a value perspective, the key question is whether cash flows generated from transaction fees and MEV, versus the monetary premium from ETH functioning as a gas token, medium of exchange, and collateral asset, will lead to greater value capture in the long-term.
- Either way, committing to a clear direction will be important - even if it requires balancing scaling through L2s while ensuring Ethereum maintains its appeal as an L1 - since any strategic ambiguity will impact value accrual.

# 02 / Context and Trends

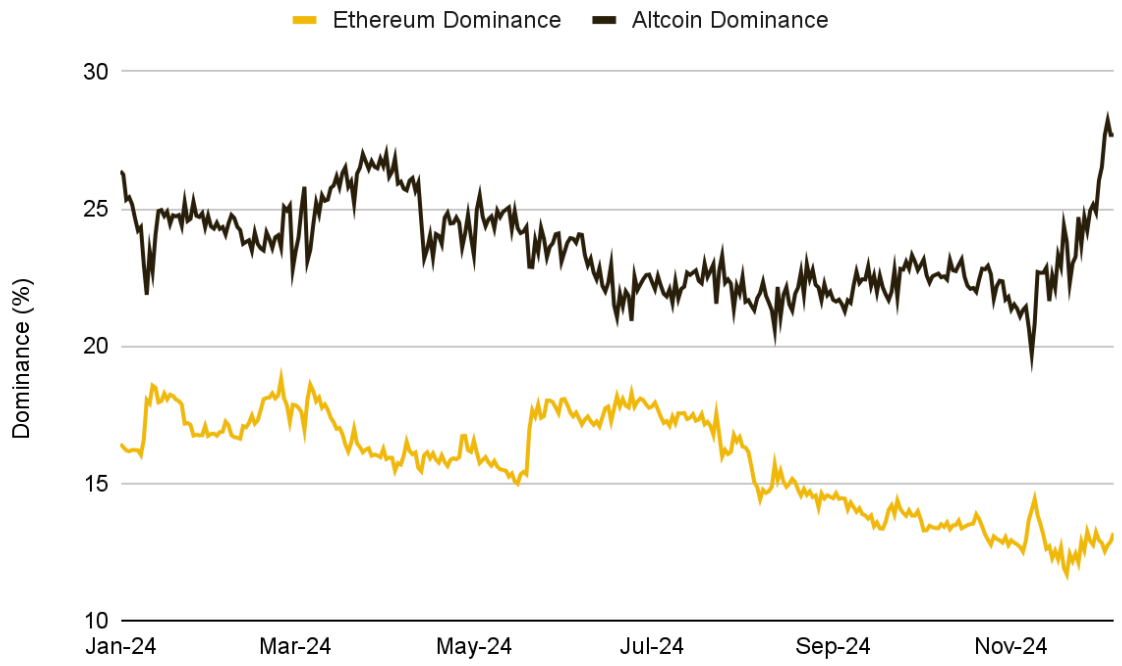
This year held significant promise for Ethereum. The Dencun upgrade, implemented earlier in the year, has led to a fourfold increase in layer 2 (“L2”) activity. In March, BlackRock launched the tokenized fund BUIDL on Ethereum. By June, the SEC concluded its investigation into Ethereum 2.0, and in July, Spot Ethereum (“ETH”) ETFs began trading in U.S. markets. Adding to this, global interest rate cuts and the arrival of a pro-crypto U.S. government have set the stage for an interesting and potentially transformative 2025.

However, despite these developments, **Ethereum finds itself at the center of a broader debate on value accrual** - important not only for supporting protocol sustainability and infrastructure development but also for shaping market sentiment and reflecting the ecosystem’s overall health. This conversation has been driven by market trends and the fact that Ethereum's fundamental metrics have remained relatively flat throughout 2024, albeit with some recent fluctuations. Let’s explore the key aspects shaping this debate.

## Ethereum Dominance

Ethereum's dominance, measured as its market cap relative to the total crypto market cap, has been on a downward trajectory throughout the year, reaching **multi-year lows of 13.1%**. This decline is particularly striking against a bullish macro backdrop, where risk-on sentiment has surged. Interestingly, capital inflows into the crypto market have largely favored Bitcoin ("BTC") and altcoins. **Altcoin dominance has climbed to its highest point this year at 28.2%**, while BTC has surpassed previous highs, breaking the US$100K milestone. In contrast, Ethereum has yet to reclaim its peak market cap from the previous cycle, reflecting a shift in market share dynamics.

**Figure 1: ETH Dominance has declined to its lowest level since April 2021**



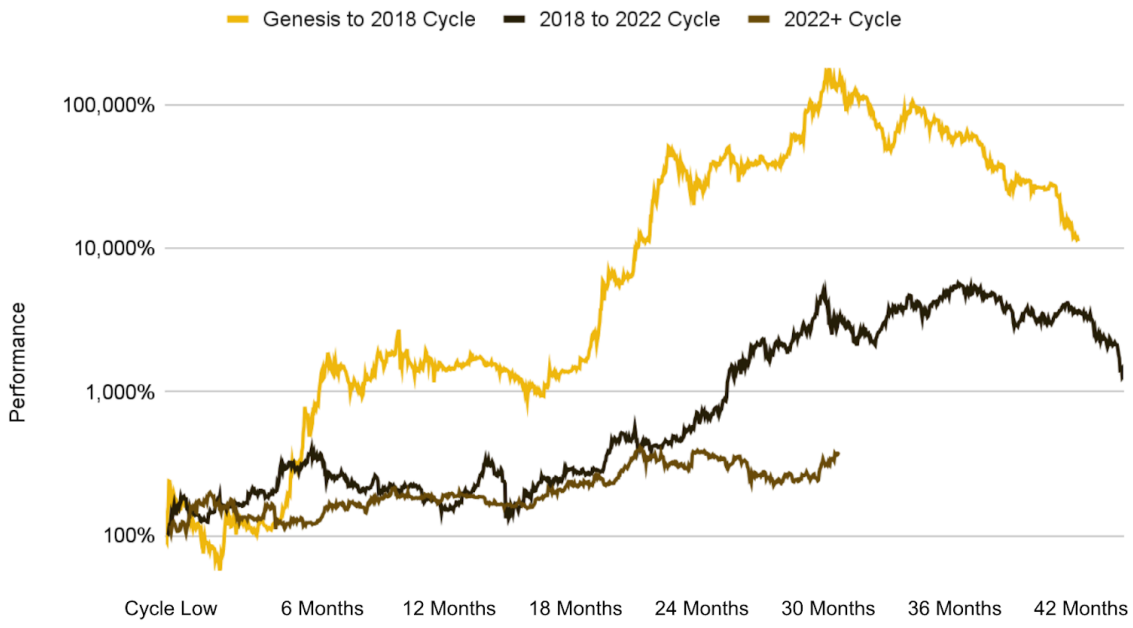

Source: Glassnode, Binance Research, as of December 6, 2024

## Performance Since Cycle Lows

Ethereum has completed two full market cycles, each encompassing both bull and bear phases, providing a valuable basis for comparison. In its current cycle, Ethereum has risen ~364.9% from its June 2022 cycle low. While this marks significant growth, it pales compared to the gains of ~11,223.3% in the first cycle and ~1,289.3% in the second.

This slower growth reflects the natural progression of diminishing returns as the asset matures over successive cycles, with higher lows becoming the norm. Even so, outside the crypto markets, **ETH has still outpaced traditional benchmarks** such as the S&P 500, Nasdaq, and Gold.

**Figure 2: Current ETH Performance Lags Behind Previous Market Cycles**



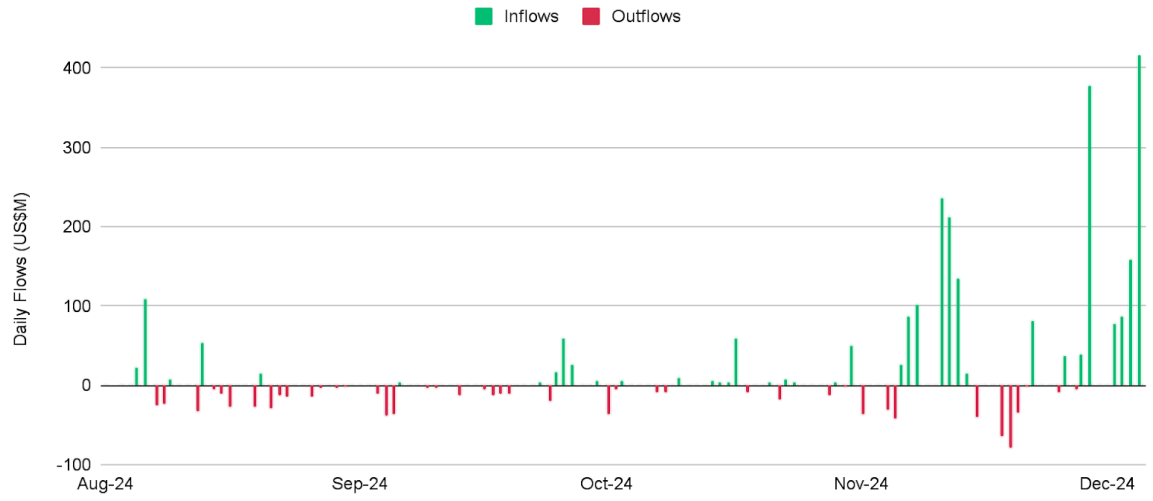

Source: Glassnode, Binance Research, as of December 3, 2024

## Spot ETH ETF Flows

The introduction of spot ETH ETFs in July initially received a lukewarm response, with flows remaining subdued throughout much of the year. However, the post-U.S. election environment brought a turnaround, with net flows shifting from negative to surpassing ~US$1.7B. This reversal highlights growing institutional interest and greater integration of ETH into traditional markets, recently exemplified by entities like the State of Michigan Pension Fund[(1)].

Yet, spot ETH ETFs continue to trail significantly behind their BTC counterparts. Expanding support through options, staking yields, and broader accessibility via trading platforms and wealth advisor networks could help bridge this gap over time.

**Figure 3: Spot ETH ETF flows initially saw a lukewarm response, but picked up significantly after the U.S. election, with net flows surpassing ~US$1.7B**

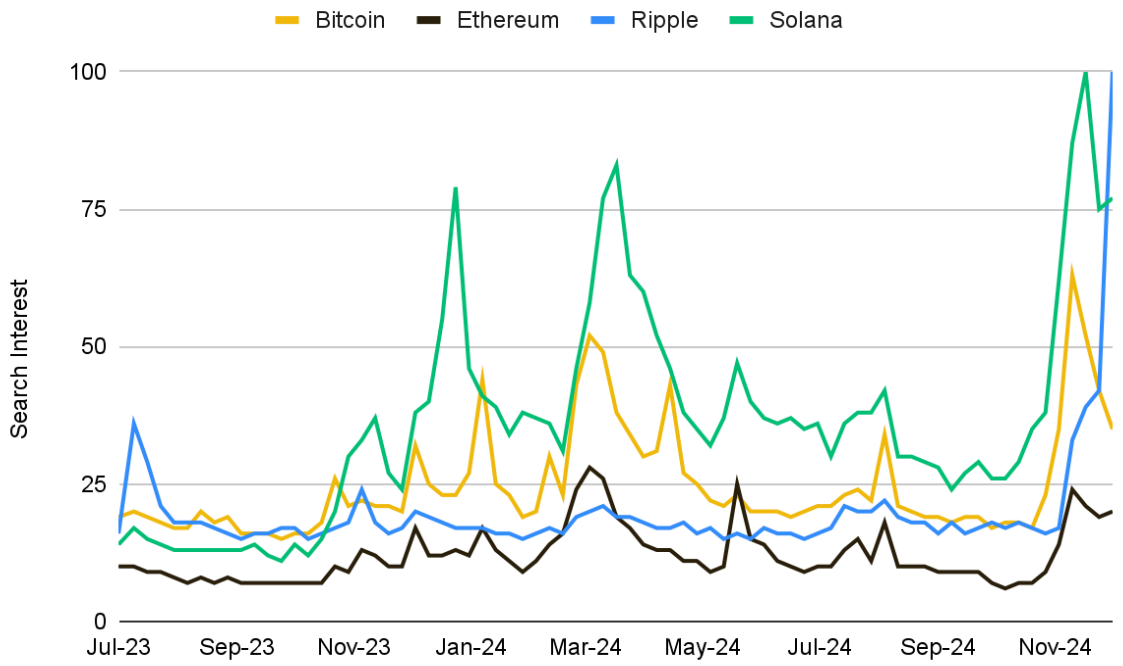



Source: Glassnode, Binance Research, as of December 5, 2024

## Market Mindshare

**Narratives play a crucial role in shaping crypto market sentiment**, guiding capital allocation and driving user engagement. In this cycle, Ethereum's market mindshare has remained relatively muted, as reflected by subdued search interest trends. By contrast, other top-five crypto assets have seen their relative interest grow over the same period.

**Figure 4: Ethereum has attracted relatively subdued interest in this market cycle**

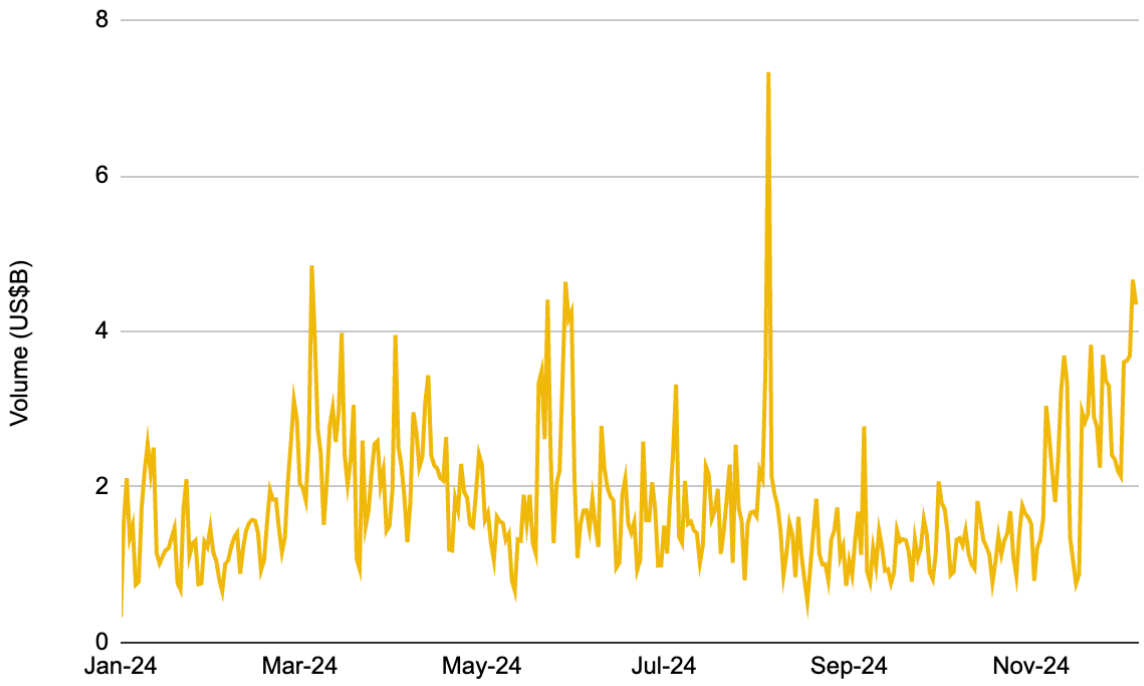



Note: The chart shows relative trends in search interest for each keyword, not overall popularity
Source: Google Trends, Binance Research, as of December 3, 2024

## Trade Volumes

**Trading volumes are a key indicator of on-chain activity and network value**. Although the market has witnessed record-high Decentralized Exchange -to-Centralized Exchange ("DEX-to-CEX") ratios this year, Ethereum's trading volumes have remained relatively steady. The growth of alt-layer 1s ("L1s") and rollups, which are capturing a larger share of user and trading activity, suggests that participants are increasingly gravitating toward these other avenues.

**Figure 5: In a market where DEX-to-CEX ratios have trended upwards, volumes on Ethereum have remained steady in comparison, albeit a reversal in recent weeks**




Source: Artemis, Binance Research, as of December 7, 2024

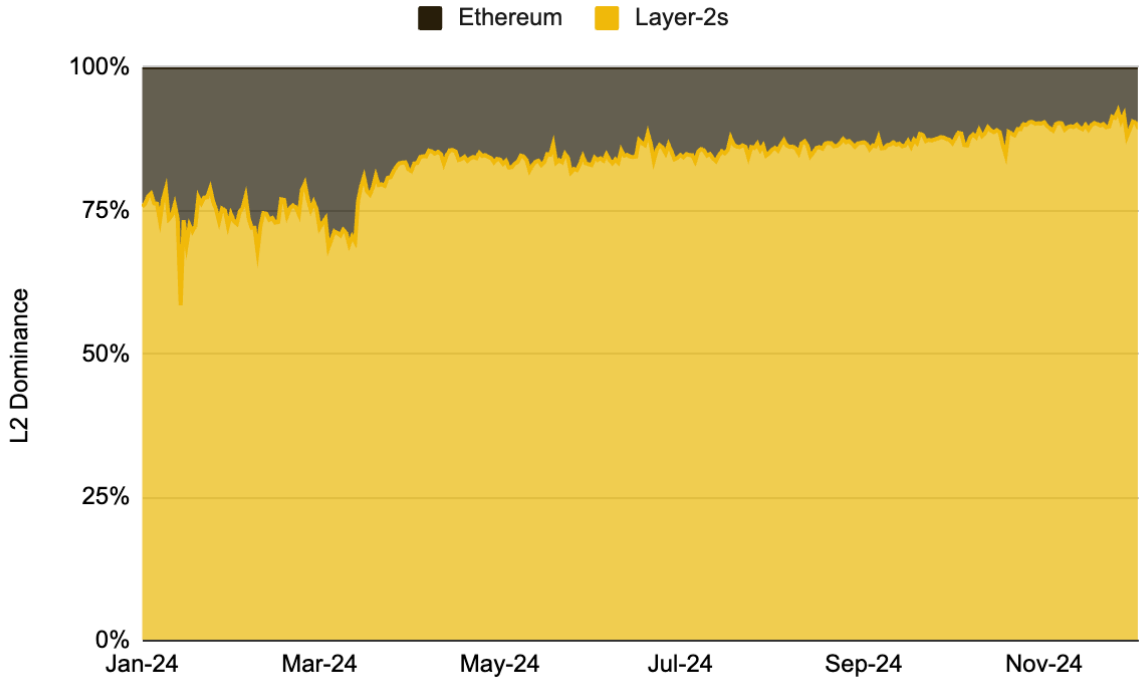
# 03 / Reading Between the Tea Leaves

## 3.1 The Rollup-Centric Value Shift

**Ethereum's rollup-centric roadmap has become a focal point in the ongoing value debate**. As one of the most successful general-purpose L1 blockchains, Ethereum's increasing network usage historically led to high fees and periods of congestion, often rendering it impractical for users. To address scalability, Ethereum adopted a rollup-centric roadmap, shifting the computational burden of execution to L2 solutions while retaining its role in data availability ("DA") and security.

Initially, running an L2 on Ethereum was considered costly due to high calldata fees paid to the L1. This changed in March 2024 with the **Dencun upgrade (EIP-4844), which introduced blobs** - a new blockspace expansion that operates in a separate fee market at a fraction of the cost of calldata. Blobs drastically reduced fees for posting data to Ethereum's L1, enabling L2s to support higher transactions per second ("TPS") and attract increased user activity.

**Figure 6: L2s are capturing a growing share of transaction activity**



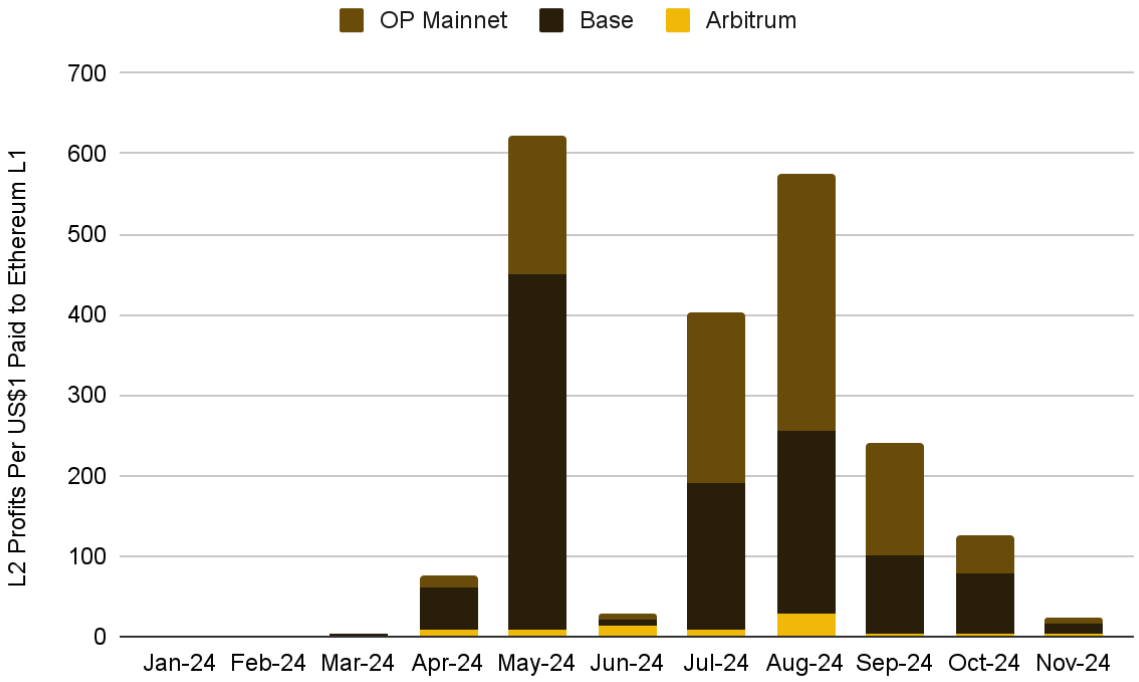

Source: Dune Analytics (@21co), Binance Research, as of December 3, 2024

While the growing adoption of L2s demonstrates the success of the rollup-centric roadmap in absolute terms, it has also had a reverse effect. Critics argue that as L2s capture a larger share of transaction and user activity, economic value may be redistributed, potentially shifting away from Ethereum's L1. L2s are increasingly benefiting from execution and transaction ordering (MEV), leaving Ethereum with DA services, which are often viewed as more commoditized.

## Impact on Transaction Fees

The introduction of cheap blob transactions and the rise of L2s have meaningfully **changed Ethereum's fee-based demand profile**. L2s now retain a larger portion of value for every dollar spent on posting transaction data and proofs to Ethereum's L1. With a few exceptions, this trend is reflected in the figure below for three of the largest L2s today.

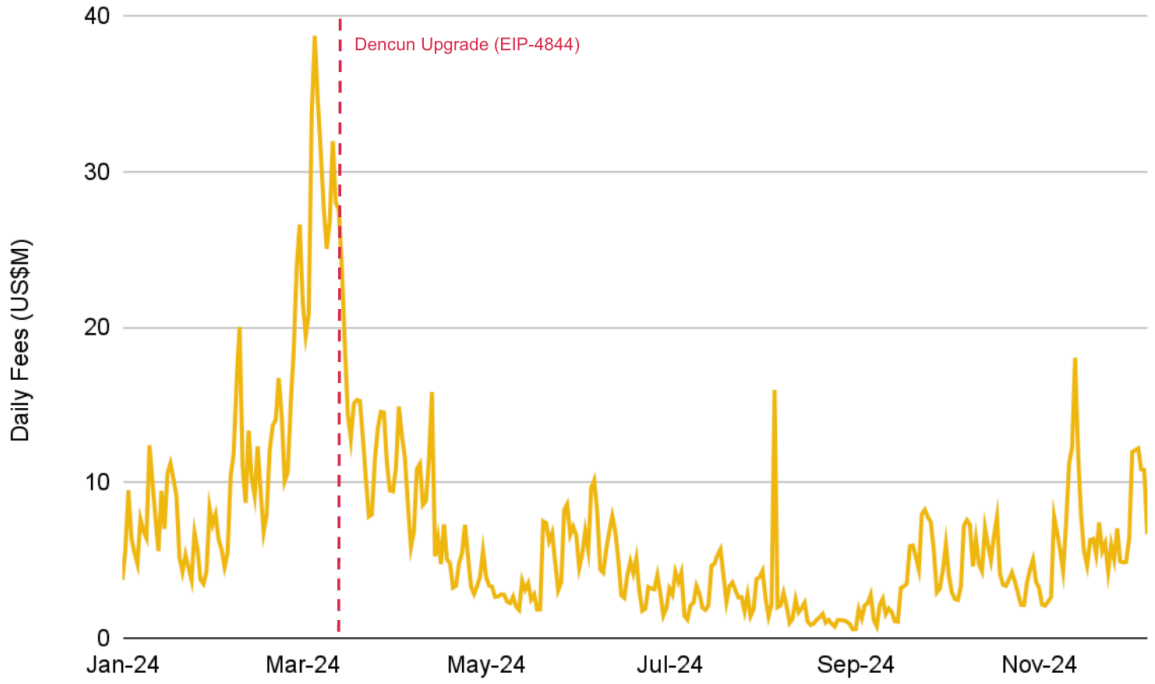
**Figure 7: The ratio of monthly fees retained by L2s vs. paid to Ethereum L1 has significantly increased**




Source: Dune Analytics (@niftytable), Unchained, Binance Research, as of December 5, 2024

Given that Ethereum is now **collecting a smaller fraction of the fees generated post-Dencun**, its transaction fee revenue has taken a notable hit. In fact, Ethereum's fee collections have reached their lowest levels in years, despite the ongoing bull market and increased activity.

**Figure 8: Following Dencun, Ethereum network fees have trended downward this year**



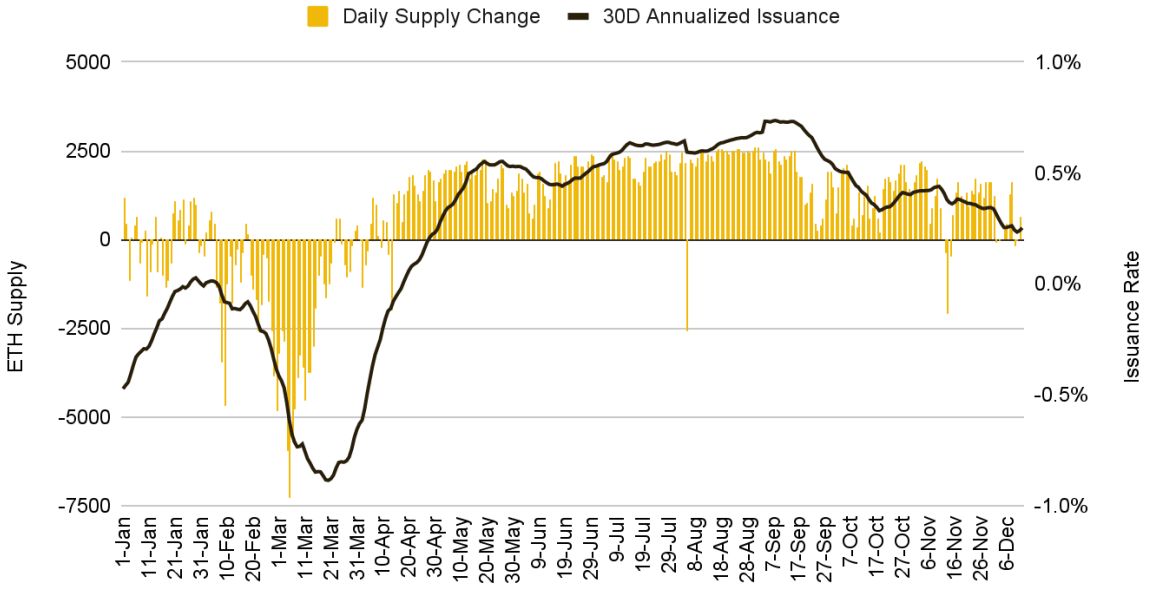

Source: Artemis, Binance Research, as of December 7, 2024

## Impact on ‘Ultrasound Money’ Status

Lower transaction fees have also **impacted ETH’s inflation dynamics**. Ethereum’s supply is governed by issuance, staking rewards, and the fee burn mechanism (EIP-1559), meaning that **network utility is closely tied to token inflation and value through transaction fees.** With reduced fee collections, the ETH burn rate has declined, reversing much of the deflationary trends observed after Ethereum’s transition to proof-of-stake (“PoS”) in 2022. This shift toward an inflationary state has dampened market sentiment, especially among those who had strongly bought into the 'ultrasound money' narrative.

Although this reversal impacts ETH inflation, such trends are expected during scaling transitions that increase blockspace supply faster than demand. Ethereum’s issuance rate remains below 1%, far lower than most alt-L1s, and **cyclical market activity should naturally restore the burn mechanism as demand picks up** - something we have started to see in recent weeks. The key risk, however, lies in Ethereum’s ability to maintain consistent blockspace demand across cycles, particularly amid rising competition from alt-L1s and the increasing reliance on L2 activity.

**Figure 9: After Dencun, daily issuance consistently outpaced burns, causing ETH’s 30-day annualized inflation to turn positive, albeit a reversal since in September**




Source: Dune Analytics (@21co), Binance Research, as of December 11, 2024

# 3.2 Layer 1 Competition Heats Up

Beyond the rollup-centric value shift, Ethereum faces increasing competition from alt-L1s. These chains, which lacked comparable security, liquidity, and network effects in previous cycles, have gained notable traction in 2024. Although there is a base effect to consider, year-to-date ("YTD") growth metrics highlight this trend, with chains like Solana outperforming Ethereum in activity-based metrics. Other players, such as The Open Network (TON), and newer entrants like Sui and the upcoming Berachain, are also seeing growth and finding their market footing[2].

**Figure 10: The alt-L1 market has expanded this cycle compared to previous ones**

| Blockchain | YTD Growth (%) | | | | |
|---|---|---|---|---|---|
| | Market Cap | TVL | Stablecoin Supply | 7D MA Trade Volume | 7D MA Fees |
| | 63.9 | 148.2 | 54.8 | 115.4 | 34.4 |
| | 131.7 | 550.0 | 161.1 | 346.9 | 795.4 |
| | 122.1 | 68.6 | 38.6 | 127.5 | -5.3 |
| | 197.9 | 73.8 | 31.7 | 474.9 | 127.3 |
| | 41.2 | 80.1 | 75.0 | 133.3 | -55.9 |
| | 120.0 | 2461.5 | 118.7* | 2431.3 | 1117.9 |
| | 1055.6 | 654.7 | -6.9* | 772.9 | 454.7 |

*Figures represent growth over the past six months, based on available data
Source: Artemis, DefiLlama, Binance Research, as of December 4, 2024

Alt-L1s now offer more performant infrastructure and attract a broader range of decentralized applications ("dApps"). For the first time, many users can rely on blue-chip products outside of Ethereum, allowing these chains to capitalize on leading market narratives - such as Solana with memecoins, TON with Telegram miniapps, and tap-to-earn ("T2E") games. This has enabled alt-L1s to create niche offerings with a loyal user base.

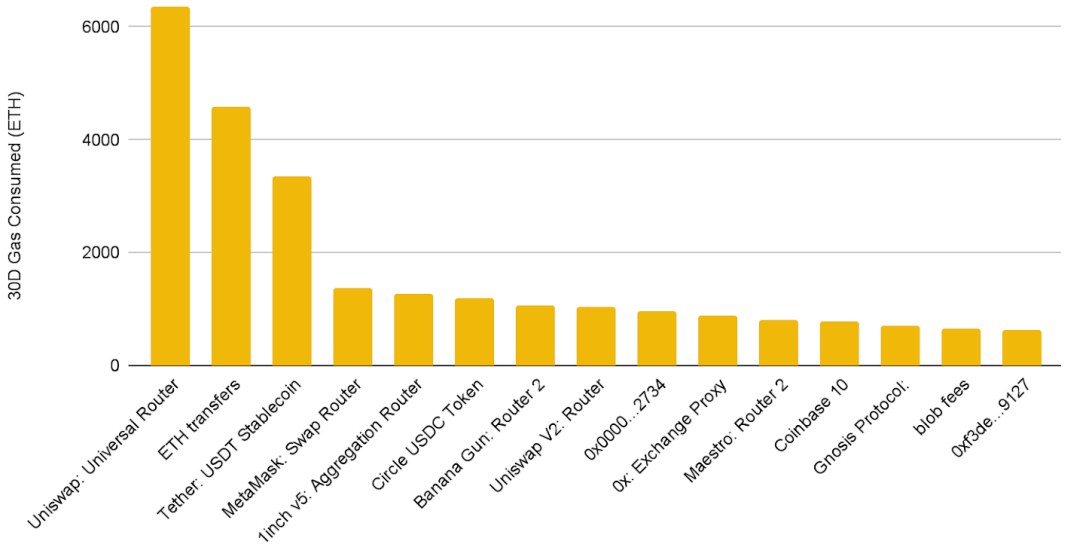
Furthermore, market sentiment around Ethereum's modular structure is shifting, driven by L2 fragmentation and complex user experiences, which have led to fatigue for many. In contrast, monolithic and fully integrated alt-L1s, where dApps operate in shared environments and offer Web2-like experiences, have gained traction. As a result, many projects (time.fun[3] being a notable recent example) and users are increasingly engaging with and migrating to these platforms.

# 3.3 The Move for App-Chains

Adding to the competitive pressures, some dApps have turned to application-specific chains ("app-chains") to meet higher performance requirements or vertically integrate their ecosystems, allowing them to capture a larger share of user and order flow. By leaving - or not opting for - Ethereum's L1, these dApps forgo fee value accrual to the Ethereum ecosystem.

Notable examples include dYdX and Hyperliquid, but the most significant upcoming move is Uniswap's shift to Unichain. As one of Ethereum's largest gas consumers, Uniswap has historically made a substantial contribution to its fee pool. To put it in perspective, over the past 30 days, Uniswap consumed approximately nine times more gas than blob transactions.

**Figure 11: Uniswap is the largest gas consumer on Ethereum**




Source: ultrasound.money, Binance Research, as of December 8, 2024

While many of these dApps continue to operate on Ethereum's L1, the extent of activity redistribution remains unclear. This raises broader questions about how value will be distributed between applications and infrastructure layers moving forward[4]. It's likely that, over time, dApps will capture a larger share of the blockchain fee pool, while underlying L1s evolve into platforms for a select few high-value players.

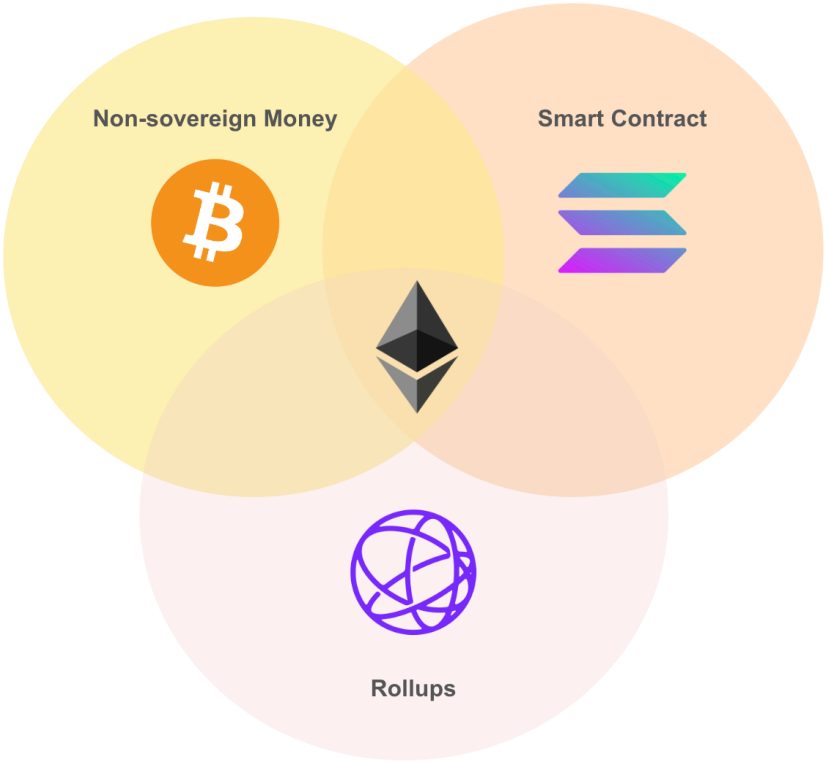
# 3.4 The Prioritization Dilemma

Ethereum's broad ambitions pose another challenge, as it **simultaneously pursues multiple market spaces**[5]. This challenge arises from the prioritization dilemma: should Ethereum focus on L2s to enhance blobspace and compete with alt-DA layers, or prioritize L1 improvements to strengthen the execution layer and contend with alt-L1s? This **strategic ambiguity has a direct bearing on ETH's value accrual**.

Many believe in the scale and growth of L2s, viewing fee accrual losses as a secondary concern. Among them, some also advocate ETH's positioning as non-sovereign money. Others, however, emphasize the importance of maximizing value at the L1 execution layer, viewing it as critical to long-term success[6]. This divergence of perspectives introduces uncertainty, which can weigh on market confidence.

While pursuing these areas concurrently is feasible in theory, following multiple paths risks diluting focus and slowing progress, particularly when competing protocols excel in specialized niches[7]. For instance, alt-L1s like Solana have concentrated on single-layer, integrated ecosystems optimized for specific objectives. The same principle also applies for alt-DA layers like Celestia, and their ability to provide DA services. Furthermore, if the ultimate goal is to position ETH as non-sovereign money, this would inevitably invite competition from other on-chain monetary assets like Bitcoin. Hence, without clear directional alignment, there are risks of overextending efforts and spreading value too thin, reducing the likelihood of achieving any single vision effectively.

**Figure 12: Ethereum is competing and spreading value across multiple fronts**




Source: DBA, Binance Research

# 04 / Outlook

## 4.1 Paths to Value Accrual

With current market trends and the value debate established, the next question is: where do we go from here? Let's explore some of the approaches under discussion, their implications, and how they shape Ethereum's value dynamics.

### Continue the Push for Rollups

This approach aligns with the current trajectory of Ethereum's rollup-centric roadmap, which **prioritizes ongoing improvements in rollup scalability and usability**.

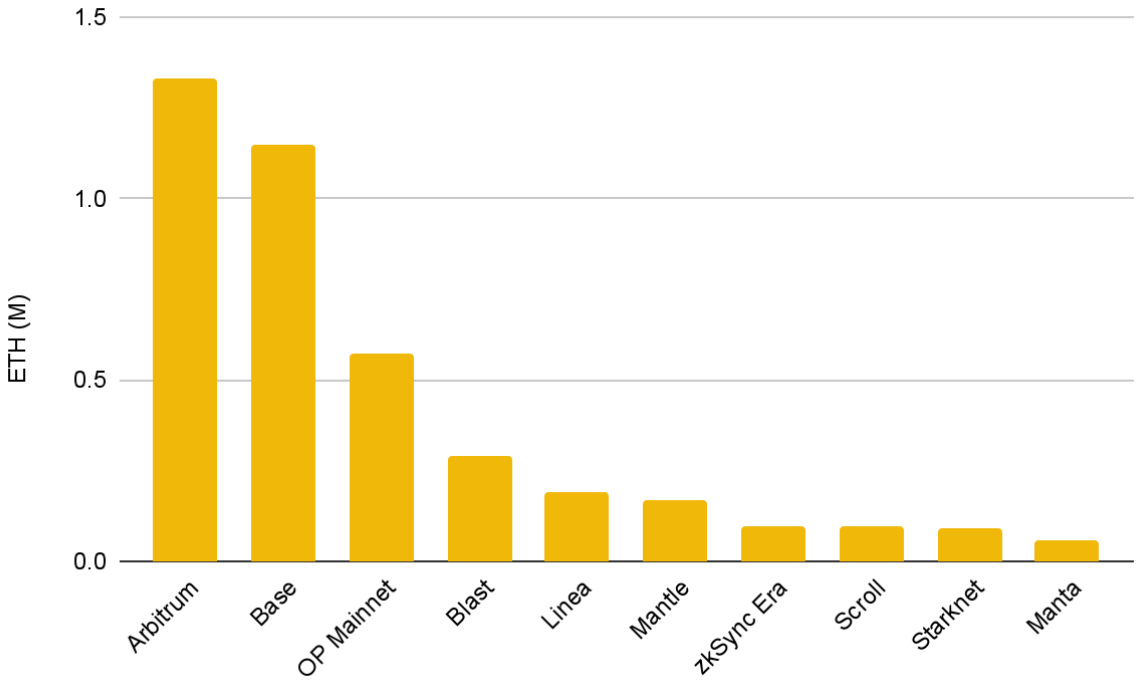
- **L2 Transaction Growth**: Ethereum is in a **hyper-scaling phase**, providing more blockspace than current demand can fill. As a result, L2 data fees generate limited revenue for the L1. However, this could change as large-scale L2 activity emerges, potentially leading to boosted fee generation and burn rates for the L1. For instance, simulations suggest that if the Ethereum L1 processes 10,000 TPS with a 16 MB blob size (compared to today's 125 KB), it could theoretically achieve an annual ETH burn rate of 6.5%[8].

  The challenge lies in the scale of growth required. L2 usage would need to increase substantially to saturate both the blob and regular fee markets. Even if all L2 fees were burned today, they might not replace prior year L1 fee spends, leaving ETH to be inflationary. Thus, rollups remain a long-term strategy with the expectation that they will eventually drive more users and fees back to Ethereum. Though the exact timeframes of when this will happen is unclear.

- **Demand for ETH:** As extensions of the L1 ecosystem, **L2s naturally drive demand for ETH across multiple use cases**, such as paying for L2 gas fees (in some cases), settling L1 gas fees, bridging into L2s, enabling interoperability, and serving as a reserve asset in DeFi. This broad utility reinforces ETH's position as a non-sovereign monetary asset. At scale, L2s could serve as economic hubs where ETH functions as both a unit of account and collateral asset.

  However, critics point to several uncertainties that could impact ETH's role on L2s. Bridging is often temporary, as users may interact with other assets once on L2s. Additionally, native L2 tokens could replace ETH for gas fees. ETH's position as a reserve asset also depends heavily on user ecosystem preferences and faces competition from assets like stablecoins and tokenized BTC. Despite these unknowns, ETH's integration with L2s continues to grow, with over 4M ETH already natively bridged.

**Figure 13: The number of ETH bridged to L2s is growing, surpassing 4M**




Source: L2Beat, Binance Research, as of December 12, 2024

It's important to note that L2s themselves are not yet fully mature, facing issues like fragmentation, interoperability challenges, centralized sequencers, and suboptimal user experiences. Moreover, rollup-centric value accrual is increasingly becoming reliant on L2s, who may pursue distinct objectives and incentives that don't always align with Ethereum's broader ecosystem. This dependency creates potential risks for long-term value alignment.

## Improve Rollup Value Generation

The rationale here is to **create more value as L2 usage ramps up**, refuting the narrative that rollups contribute little to Ethereum's value. Enhancing value capture from L2s involves mechanisms that ensure L2s remain economically tied to Ethereum. Proposed strategies include based sequencing services, cross-chain transfers, and minimum transaction inclusion fees. For instance, one such proposal in discussion is EIP-7762, which aims to adjust blob base fees to better reflect market activity.

However, additional rent-seeking measures could push L2s toward more cost-effective DA providers, such as Celestia, EigenDA, or even centralized data availability committees ("DACs"). As cost-minimizing businesses, L2s could also adjust their behavior to avoid higher fees, potentially switching fee markets or delaying data posting - a pattern observed in some L2s recently. Thus, value generation in this market isn't something that is set in stone. Rent-seeking at a time when the focus is on scaling and bootstrapping activity could delay ongoing priorities and exacerbate prevailing challenges, such as L2 fragmentation. Moreover, while blobs are a novel feature of Ethereum, fine-tuning their economics too early could introduce complexities and risks that outweigh potential benefits.

## Make the Layer 1 Great Again

Reprioritizing the Ethereum L1 focuses on **bringing value back to the core network** by scaling its capacity for high-value transactions and directly generating fees and burns. This approach reduces dependence on L2s and addresses user preferences for simpler, non-fragmented ecosystems, allowing Ethereum to better compete with alt-L1s.

A critical point often overlooked is that Ethereum already has a roadmap for improving its L1. The question isn't whether Ethereum should abandon its scaling strategy, but how it can **maintain its appeal as an L1** while supporting high-value dApps and fostering new, sustainable use cases. Retaining a strong L1 is strategically important for Ethereum's long-term success.

While the rollup-centric roadmap establishes L2s as essential for scaling, the L1 doesn't have to come at its expense. Their symbiotic relationship means both can progress simultaneously, provided clear objectives and boundaries are defined. A balanced approach ensures Ethereum remains competitive as both an execution layer and a scalable ecosystem, leveraging the strengths of both L1 and L2 solutions.

## "A big question that any L1 scaling roadmap needs to answer is: what is the ultimate vision for what belongs on L1 and what belongs on L2?"

*– Vitalik Buterin, Co-Founder of Ethereum (blog post)*

Given Ethereum's dominance in key areas like DeFi, stablecoins, and tokenization, having dApps churn from these sectors would be a significant setback. These use cases represent some of the largest sources of on-chain cash flows and hold immense growth potential. Tokenization alone is projected to reach trillions of dollars in market value.

In the past year, Ethereum L1 transaction fees have been primarily driven by DEX activity[9], with L2s following as a strong second. However, following the Dencun upgrade, rollups have become less significant gas consumers, leading to an even greater concentration of fees from DEX activity. To counter this trend, expanding the range of use cases on Ethereum is essential. Doing so would not only help **offset the post-Dencun fee loss** but also **diversify fee generation sources** and **bolster demand for ETH**, reinforcing its economic value.

The challenge lies in competing with alt-L1s (and L2s) to attract these use cases, especially given Ethereum's relatively high L1 fees. For users and dApps, the ability to justify paying substantial gas costs for transactions is a major consideration - one that can only be addressed through effective L1 scaling. Nonetheless, maintaining a diversified range of gas guzzlers on the L1 remains critical for sustaining Ethereum's long-term growth and competitive edge.

.**Figure 14: While Ethereum has had a diverse range of use cases generating fees, they are becoming more concentrated and experiencing a decline**

| Rank | Fee Spend by Year and Category (US$M) | | | | |
|---|---|---|---|---|---|
| | 2020 | 2021 | 2022 | 2023 | 2024* |
| 1 | **ERC-20** *86.3* | **DEXes** *2,460.2* | **DEXes** *717.8* | **DEXes** *706.6* | **DEXes** *512.8* |
| 2 | **DEXes** *84.5* | **ETH Transfer** *1,198.0* | **NFTs** *495.3* | **L2s** *248.0* | **ERC-20** *159.4* |
| 3 | **Stablecoins** *56.7* | **ERC-20** *1,181.3* | **ERC-20** *358.0* | **ERC-20** *223.5* | **ETH Transfer** *148.9* |
| 4 | **ETH Transfer** *53.2* | **Stablecoins** *906.9* | **ETH Transfer** *316.5* | **ETH Transfer** *165.0* | **Stablecoins** *129.4* |
| 5 | **DEXes** *27.1* | **Contract** *770.7* | **NFT Transfer** *277.3* | **NFTs** *152.6* | **L2s** *90.1* |
| 6 | **Contract Management** *18.1* | **NFT Transfer** *455.1* | **Stablecoins** *234.4* | **Stablecoins** *146.8* | **Contract Management** *89.3* |
| 7 | **Oracles** *11.2* | **External Business Operations** *338.7* | **Contract Management** *201.1* | **Contract Management** *121.7* | **MEV** *86.3* |
| 8 | **MEV** *10.0* | **Contract Management** *311.3* | **L2s** *133.3* | **NFT Transfer** *78.8* | **Bridges** *68.5* |
| **Total** | 452 | 9,824 | 3,584 | 2,364 | 1,770 |

*Data covers only part of the year but is indicative of the overall trend
Source: CoinShares, Binance Research, as of August 2024

## Clarifying the Mission Statement

**Ambiguity in Ethereum's objectives - between a rollup-centric roadmap and broader goals - creates market uncertainty**. Aligning on a cohesive mission statement would strengthen Ethereum's narrative and product strategy. A useful analogy comes from Steve Jobs, who famously emphasized that a product's internal components should match the quality of its exterior. Similarly, a clear vision, much like a well-designed product, fosters alignment and ensures consistent execution. The key is less on which value-accrual approach to pursue and more on committing to a clear direction, even if it requires balancing multiple priorities.

The complexity of Ethereum's value proposition adds to this challenge. While Bitcoin is often viewed as 'digital gold', with a simple and widely understood narrative, Ethereum's programmable smart contract platform tells a much more intricate story. This makes it harder for market participants, including traditional finance players, to accurately evaluate ETH's value and potential. Therefore, with value accrual already a nuanced and debated topic[10], eliminating value ambiguity can go a long way.

# 4.2 Considerations

## Maintain a Long-Term View

Even if Ethereum's protocol economics have been impacted by the rollup-centric value shift, it's important to remember that **scalability was the original problem** this approach sought to address. In that context, Ethereum and its L2s are functioning as intended, aligning with Ethereum's vision of building a large network of rollups within its ecosystem.

The pressing question is whether Ethereum should prioritize the average L2 user and the L2 ecosystem or focus on value accrual for ETH as an asset. Ethereum researcher Dankrad Feist argues that **sustainable value capture can only occur after building a value-generating economy** that drives long-term economic activity[11]. Prioritizing short-term value accrual, he suggests, is less effective than focusing on scaling blobs for the long-term. This strategy, which emphasizes scaling over immediate fee capture, mirrors how many Web2 tech companies prioritize growth before profitability. Hence, while L2s have eaten into a portion of L1 fees and demand, the current state is perhaps not truly indicative of the long-term outlook.

## Better Rollups, Than Competing Layer 1s

While Ethereum's rollup-centric roadmap has **shifted its primary customers from end-users to L2s**, this strategy has successfully retained activity within the ecosystem. Without rollups, Ethereum might have continued to face high gas fees, transaction backlogs, and user churn, pushing dApps and other participants to exit[12]. There were times when Ethereum saw episodes of 30,000 transactions stuck at once[13] or single transactions costing over US$200 in gas fees[14] - issues that rollups have since solved.

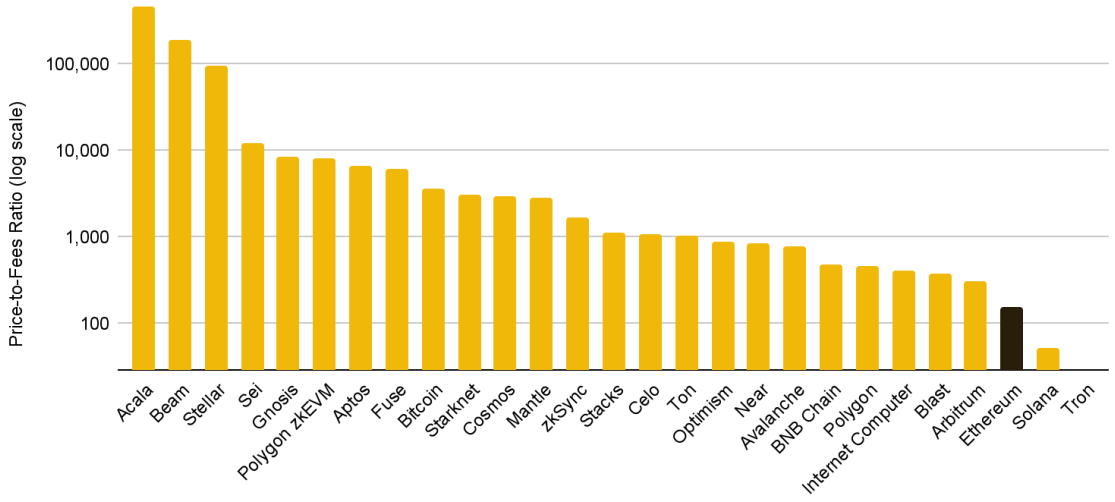
Therefore, in an alternate scenario, Ethereum could have been grappling with the opposite problem: losing users to alt-L1s and suffering a decline in transaction volumes due to usability challenges. While rollups may redirect some activity from the L1, retaining it within the Ethereum ecosystem is far preferable to losing it to competitors entirely.

## Multiple Factors Drive Value

Much of the value debate revolves around the notion that L2 data fees are the primary value capture mechanism for Ethereum. However, this view is overly simplistic. L2 data fees, while significant, are unlikely to remain sticky in a rapidly evolving DA market with numerous alt-DA providers.

Looking at other blockchain networks, it becomes clear that transaction fees may not necessarily be the best indicator of value. Price-to-fee (P/F) multiples show significant variation, ranging from single to six figures, across both newly launched networks and long-established ones. This suggests that focusing exclusively on metrics like transaction fees - or even the burn rates tied to them - can be short-sighted and overlooks the broader context of Ethereum's overall ecosystem.

**Figure 15: While important, fees are not the only clear driver of network value**




Source: Artemis, Binance Research, as of December 11, 2024

Ethereum's value is derived from a **combination of fundamentals** (transaction fees, revenue, issuance rates, user activity), as well as intangible factors[15]. For instance, many market participants value Ethereum's role as the ultimate settlement layer, relying on its security and liquidity while benefiting from its network effects, while others use ETH for various DeFi applications. The branding, trust, and community built around Ethereum offer significant growth potential and are not easily replicated.

## Future Value Capture

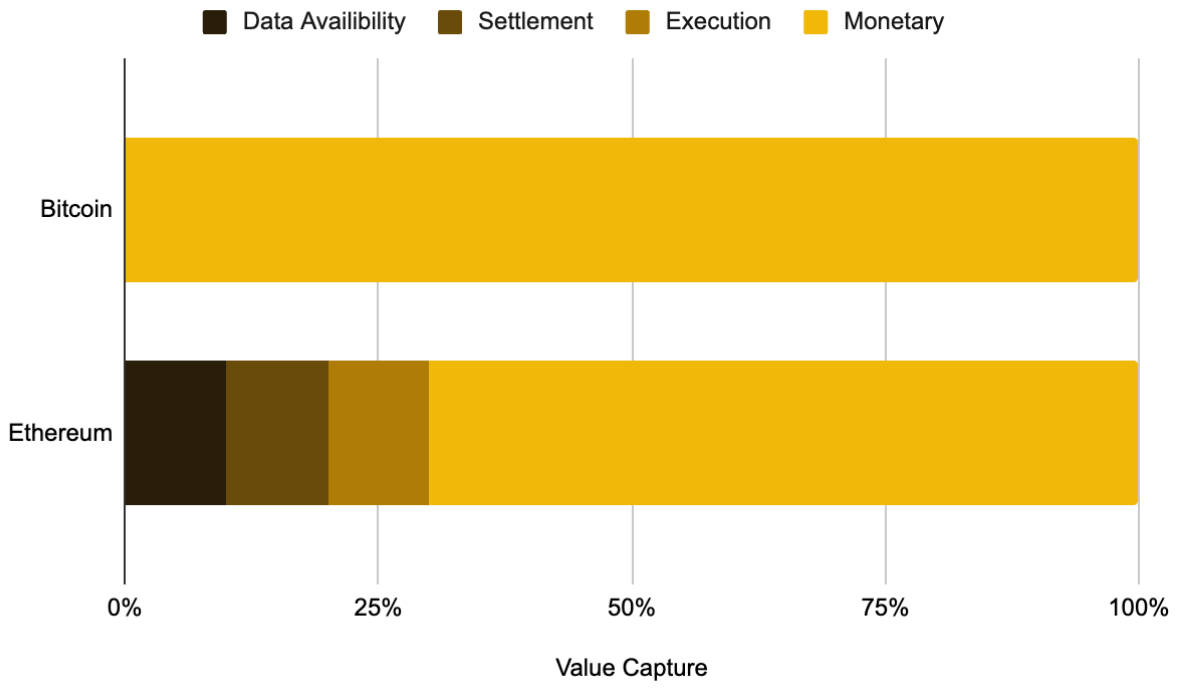
In straightforward terms, Ethereum's value accrual today stems from two primary sources.

- **Cash Flow**: Derived from transaction fees and MEV.
- **Monetary Premium**: ETH's role as a gas token, medium of exchange, and collateral asset.

As Ethereum continues to evolve in a rollup-centric world, the emphasis has gradually shifted toward its monetary premium. The underlying thesis is that all base layer assets like ETH will compete as **non-sovereign monetary stores of value**, especially as fee capture becomes increasingly commoditized and the application layer begins outshining infrastructure layers.

In the long-term, Ethereum's strategy appears rooted in this very principle: that while it seeks to **sustain high-value transactions on the L1**, it is also moving toward a future where value generation comes from being the natural **financial crossroad of its rapidly growing rollup economy** - driving strong demand and utility for ETH. That said, measuring this in practice is inherently challenging, and only time will tell how this unfolds as its L2 economy grows.

**Figure 16: Ethereum's future value capture may stem from its role as a non-sovereign monetary asset**




Note: The chart is for illustrative purposes only
Source: Syncracy, Binance Research

# 4.3 What Is Next?

As a smart contract platform, Ethereum's protocol upgrades can have a direct influence on value accrual. Monitoring the upcoming schedule of upgrades is therefore important in understanding how they may shape Ethereum's future.

## The Pectra Upgrade

Scheduled for early 2025, Pectra consolidates two previously planned upgrades: Prague (focused on the execution layer) and Electra (focused on the consensus layer)[16]. Together, Pectra introduces a set of updates designed to achieve three key objectives:

- **Address critical shortcomings** in Ethereum's PoS protocol.
- **Enhance user experiences** for interacting with smart contract dApps.
- **Further advance L2 scalability** by increasing Ethereum's DA capacity.

While the first two objectives aim to improve Ethereum's overall functionality, the third reinforces its commitment to the rollup-centric roadmap. Two notable proposals included in Pectra specifically target scaling resources for L2s:

- **EIP-7742**: This proposal allows the Beacon Chain to dynamically adjust the network's target and maximum blob gas limit without requiring major hard forks.
- **EIP-7691**: This increases the maximum blob count (currently capped at 6 blobs per block with a target of 3), further scaling Ethereum's DA layer. With a higher blob count, the base blob fee would increase in a more controlled manner during periods of peak demand, enabling smoother price adjustments.

While Pectra's scope is streamlined (inc. continuation of prior blobspace upgrades), it is not expected to have an outsized impact on ETH value in the short-term. However, beyond Pectra, several forthcoming initiatives may have more direct implications. These include efforts to reduce issuance through stake ratio targeting, improve censorship resistance, and advancing scaling capabilities via Peer Data Availability Sampling ("PeerDAS").

## Rollup Upgrades Becoming More Important

As Ethereum continues to enhance DA through its rollup-centric roadmap, the focus of protocol upgrades is gradually shifting. Over time, the value of Ethereum's L1 upgrades may diminish in favor of innovations on rollups themselves.

In the long term, as dApps and users increasingly migrate to L2s, Ethereum's value generation may depend more heavily on activity within the rollup ecosystem. Consequently, the most critical code changes for Ethereum stakeholders will likely occur on rollups rather than the L1. Moving forward, the maturity of rollups and their ability to inherit Ethereum's security while scaling for millions of users will be pivotal to Ethereum's success.

# 05 / Closing Thoughts

Ethereum finds itself at a crossroads. The growth of L2s has brought undeniable benefits in scalability and cost reduction but has also sparked concerns that this growth may be extractive, providing disproportionate benefits to L2s rather than the L1. However, the reality is far more nuanced.

The rollup-centric roadmap isn't solely about transaction fees - it's built on the demand for ETH as a reserve asset within the L2 economy. By offering robust infrastructure, security, and affordable blobspace, Ethereum empowers L2s to extend ETH's role as money across the broader rollup ecosystem. This positions Ethereum as the natural hub for financial activity and high-value transactions. Over time, the utilization of ETH in protocols and the demand for base layer security could play a more significant role in value capture than transaction fees alone. Key metrics to watch include ETH's demand on L2s, its role in DeFi, and its appeal as a reserve asset. If the rollup-centric roadmap remains on course, these factors are likely to shape Ethereum's future trajectory.

At the same time, as a smart contract platform, maintaining value on the L1 remains important. Improving the L1 should not be seen as diverging from the rollup-centric roadmap. Both can and should evolve in tandem, given their symbiotic relationship: enhancing the L1 benefits the L2 ecosystem, and vice versa. The challenge lies in striking a balance - scaling via L2s while retaining high-value users and transactions on the L1. Managing this equilibrium across utility, security, and Ethereum's function as non-sovereign money will be central to its long-term success.

Navigating these competing priorities is no easy task. While market performance improvements may temporarily ease this debate, the underlying questions of value dynamics and roadmap alignment remain critical. Ethereum's ability to pursue multiple viable paths is a strength, but prolonged uncertainty could undermine confidence in its value accrual. Achieving clear directional alignment will be essential to sustaining confidence and driving future growth.

# 06 / References


1. https://cointelegraph.com/news/michigan-pension-fund-bitcoin-ether-etf-investment/
2. https://coinmarketcap.com/
3. https://x.com/0xKawz/status/1852031527556694450/
4. https://www.syncracy.io/writing/application-fee-capture/
5. https://x.com/TrustlessState/status/1858989850348646483/
6. https://x.com/haydenzadams/status/1714849243540701296/
7. https://dba.xyz/ethereums-north-star/
8. https://x.com/timjrobinson/status/1851222337787740425/
9. https://blog.coinshares.com/eths-value-crisis-amid-scaling-and-institutional-interest-656ddea9acf7/
10. https://dba.xyz/l1-l2-token-value-capture/
11. https://www.reddit.com/r/ethereum/comments/1f81ntr/ama_we_are_ef_research_pt_12_05_september_2024/
12. https://www.forexcrunch.com/blog/2020/09/22/cryptocurrency-projects-jumping-off-the-ethereum-ship-due-to-high-transaction-fees/
13. https://www.coindesk.com/markets/2017/12/07/cat-fight-ethereum-users-clash-over-cryptokitties/
14. https://etherscan.io/chart/avg-txfee-usd/
15. https://x.com/Decentralisedco/status/1849794355214643256/
16. https://ethroadmap.com/

# 07 / New Binance Research Reports

**Monthly Market Insights - December 2024 Link**
A summary of the most important market developments, interesting charts and upcoming events


**The Fed, Interest Rates, and the Economy: A Primer Link**
A look at the Fed, interest rate cuts, major economic variables, and historical asset performance.

# About Binance Research

Binance Research is the research arm of Binance, the world's leading cryptocurrency exchange. The team is committed to delivering objective, independent, and comprehensive analysis and aims to be the thought leader in the crypto space. Our analysts publish insightful thought pieces regularly on topics related but not limited to, the crypto ecosystem, blockchain technologies, and the latest market themes.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**Macro Researcher**


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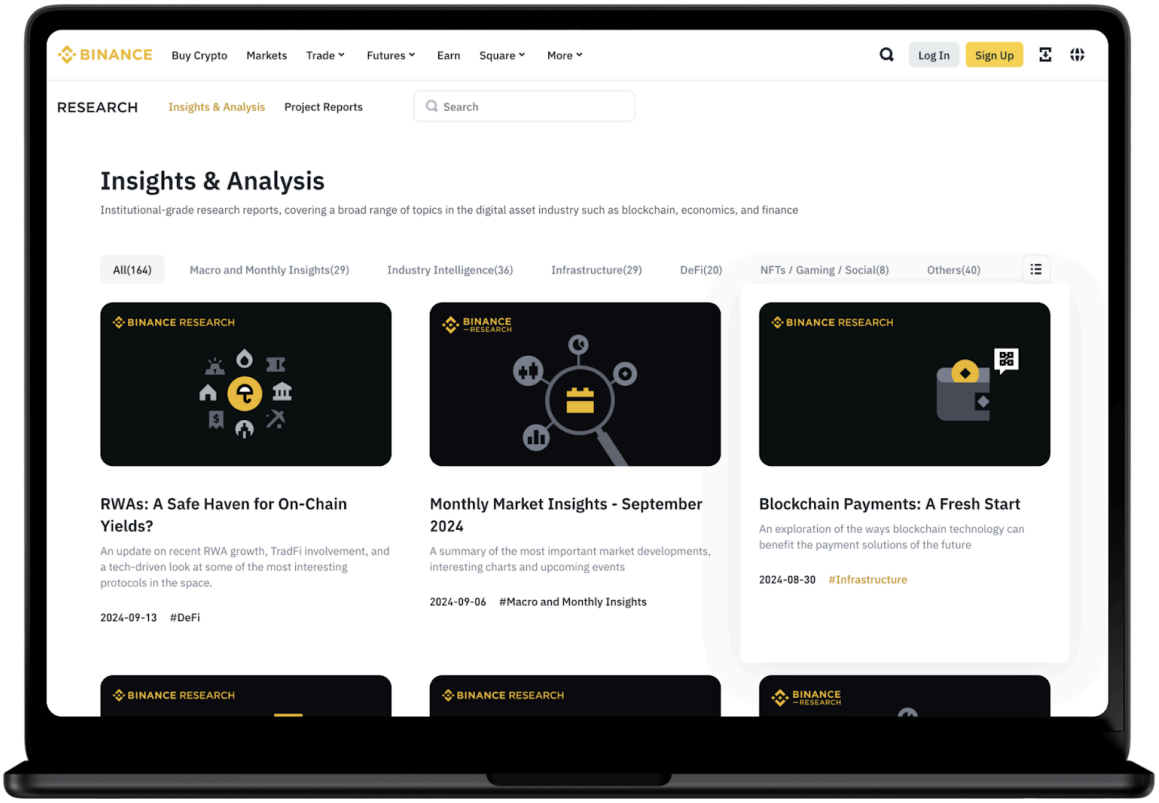
# Resources

Binance Research **Link**

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