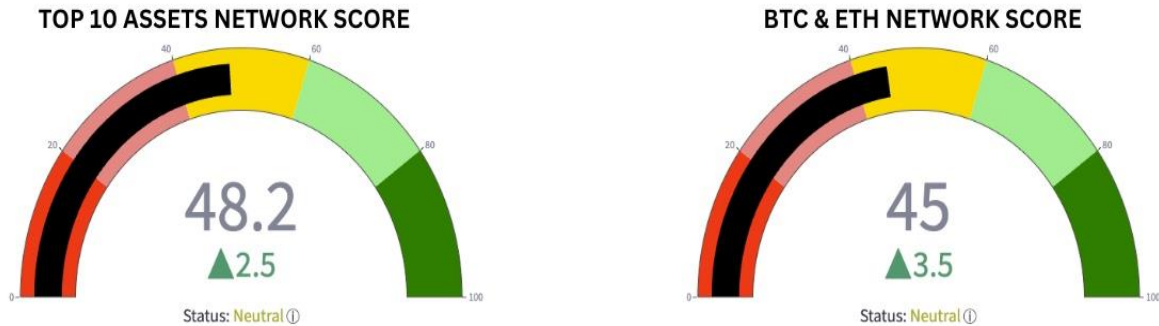


Digital Pulse Report: A Tightrope Walk

FUNDAMENTAL PULSE – WEEKLY NETWORK PERFORMANCE



WEEKLY NETWORK PERFORMANCE OF THE TOP 10 ASSETS



Bitcoin's Pulse score continue to march higher, with sustained growth in both transfers and active users. In sharp contrast, Ethereum's activity has remained stagnant over the last week and is at yearly lows.

ASSETS	ASSET SCORE	7D CHANGE	30D CHANGE	VOLUME	TRANSFERS	ACTIVE USERS	USER GROWTH	VALUATION	NETWORK DISTRIBUTION	VELOCITY
Top 10 Assets	48	3	9	43	71	48	38	61	64	11
BTC & ETH	45	4	10	40	78	48	37	64	44	4
Bitcoin	57	7	16	33	84	82	44	71	87	0
Ethereum	33	0	4	47	72	14	30	57	1	8
Ripple	45	-4	8	31	77	16	46	39	100	5
Dogecoin	44	-4	8	59	42	17	32	58	98	2
Cardano	54	3	0	55	34	18	24	45	100	100
Polygon	36	2	0	56	35	31	28	53	47	4
Litecoin	48	5	10	82	33	36	34	55	96	0
Bitcoin Cash	37	-7	-13	42	49	54	35	75	3	1
Chainlink	84	4	13	85	81	84	64	93	78	100
Stellar	56	0	5	34	89	71	42	44	100	10

*Snapshot from the Coinbase Asset Management Pulse on 11/1/2023. Pulse Report includes the top ten assets by market capitalization. More than 70 assets and risk management tools are available for demonstration on request.

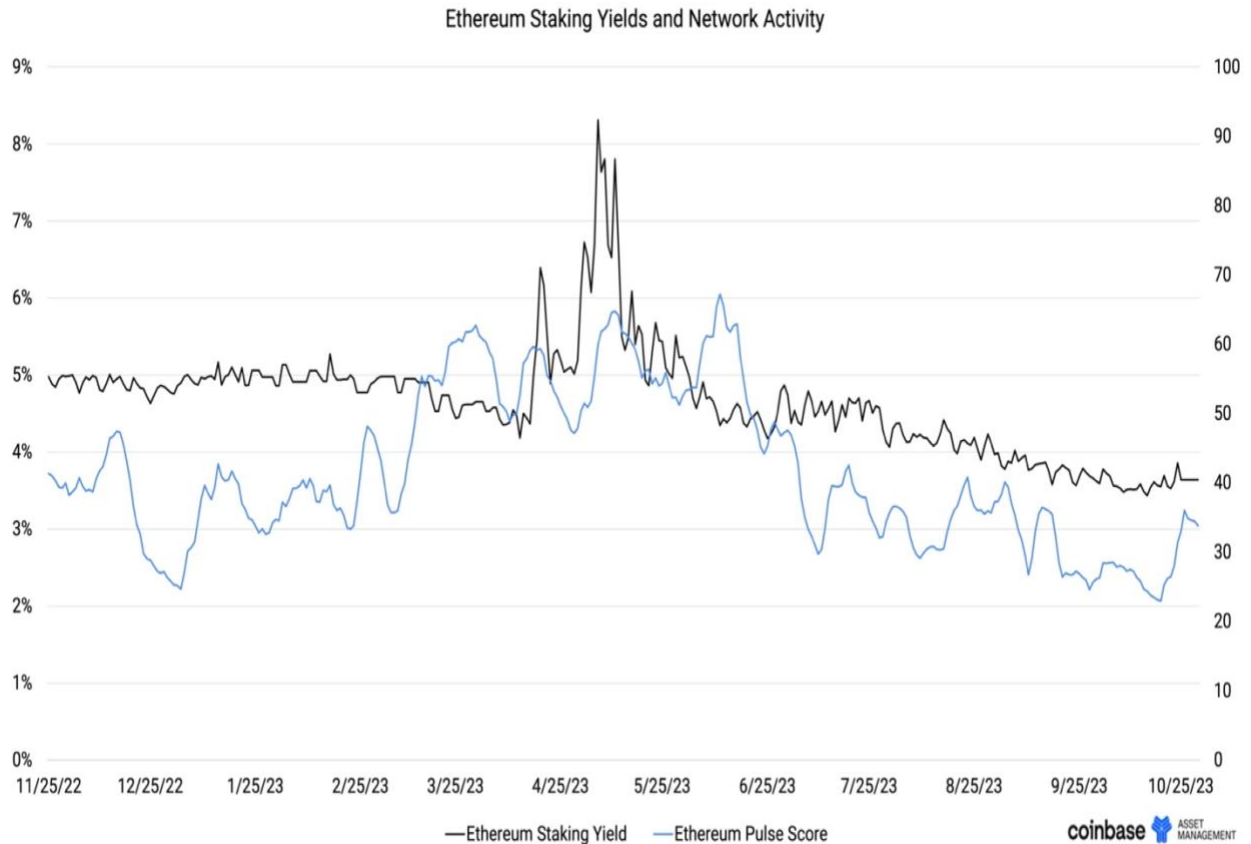
Notes: The Scores are 12-month trailing percentile values. Changes on the gauge chart represent the seven-day change. "Top 10 Assets" are size-tilt weighted, the square root of market capitalization. "BTC & ETH" are equally weighted. High > 60, Neutral 40 to 60, Low < 40. A score of 41.8 means the score is better than 41.8% of its values in the past 365 days. Asset Scores are unique and sensitive to changes in a particular asset. Readers should not compare Asset Scores across assets.

Please see metric descriptions endnotes for details.

A Tightrope Walk: Staking in Ethereum is a multifaceted engine constantly adapting to market conditions. Both block rewards and transaction fees adjust to market demands. With rising validator participation, rewards shrink. It is also reflected in our Pulse of the digital economy. The dip in Ethereum Mainnet activity has curtailed transaction fees, lowering staking yields to 3.7% - near record discount US money market yields. Yet, validators have a hidden trump card: Maximal Extractable Value (MEV). Once a debated feature, MEV boost now directs 85% of block proposals and has raised annual validator returns by 1-2% (source: Twinstake). Yet, the sustainability of these rewards remains an open question. Ethereum's future guides us to a plausible answer – layer 2s, separate chains that inherit the security features of Ethereum but at a fraction of the cost. Layer 2s already have 57% more active addresses than Ethereum, and show no signs of slowing. But their expansion puts ongoing pressure on traditional staking yields and MEV rewards, both of which are tethered to mainnet activities. Preliminary research indicates that leading layer 2 solutions have amassed around \$370,000 in MEV rewards over two years—a sum dwarfed by \$74 million generated on Ethereum's mainnet in the past year. In essence, Ethereum is navigating a tension between immediate profitability and long-term efficiency. While layer 2 solutions may eat into Ethereum's profitability today, they promise future growth as adoption widens. Growth sectors are rewarded for scale and adoption – layer 2s are the long-term gain with the short-term pain.

ETHEREUM STAKING YIELDS

Ethereum's low staking yield is the result of multiple factors. The Digital Pulse shows a drop in transaction activity since May, coupled with an increase in validators. In turn, rewards decline. Layer 2s are also a prominent factor, diverting transaction activity from the mainnet.



Source: Compass Financial Technologies. Coinbase Asset Management Pulse. (Date: November 25, 2022 to October 25, 2023)

Metric Definitions

1. Volume – The aggregated value of native units transferred between addresses on-chain.
2. Transfer Count – The sum count of transfers between addresses. It becomes more valuable when used in conjunction with Volume.
 - 2.1 Low Transfer Count & High Volume: High volume but transferred by a few addresses.
 - 2.2 High Transfer Count & Lower Volume: Indicates higher retail activity or exchanges amongst small accounts.
 - 2.3 Lower Transfer Count & Lower Volume: Indicates slower network usage and low network demand.
 - 2.4 High Transfer Count & Higher Volume: Indicates high network usage. A persistent trend is substantial.
3. Active Users: Number of addresses active in the network as recipients or originators of ledger change. This includes value transfers, signing blocks, and other forms of ledger change activity.
 - 3.1 High Value: High network usage and high demand.
 - 3.2 Low Value: Low network usage and low demand.
4. User Growth Rate: The rate at which new addresses with non-zero balances are added to the network.
 - 4.1 High Value: Indicates users being added to the network at an increasing rate.
 - 4.2 Low Value: Indicates users being added to the network at a slower pace.
5. Valuation: This metric compares the on-chain volume to the realized capitalization representing the value of the network. Realized capitalization is a revised form of market capitalization that accounts for the value of the coin at the time the coin was last spent. A lower volume compared to the high value of the network indicates the network could be overvalued and vice versa.
 - 5.1 High Value: Indicates the network is closer to its real value based on the on-chain volume.
 - 5.2 Low Value: Indicates the network is very close to being overvalued considering the activity on the network.
 - 5.3 Medium value: Asset is reasonably valued—sustainable demand for transactions.
6. Velocity: This indicator shows the turnover of coins in the network as measured by on-chain volume divided by active supply. The primary use of this metric in this instance is to help assess an asset's market-relevant supply.
 - 6.1 High Value: There is greater circulation of coins in the network and use for payments.
 - 6.2 Lower Value: There is lower circulation of coins in the network and use for payments.
7. Network distribution: The metric used, the SER ratio, compares the smallest accounts (sum held by accounts with a balance less than 0.00001% of the supply) against the richest accounts (sum held by the top 1% addresses).
 - 7.1 High Value: Signifies high distribution of supply and higher decentralization.
 - 7.2 Low Value: Low supply distribution and heavy concentration amongst a few wallets.

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Coinbase Asset Management manages strategies that employ the use of ETH staking. Liquid staking involves risk, including but not limited to network congestion, concentrated validator risk, and the possibility of regulatory risk. All such factors may have an impact on the liquidity of staked assets.

The Composite Ether Staking Rate (CESR) is an index. Any indices and other financial benchmarks discussed are provided for illustrative purposes only, are unmanaged, reflect reinvestment of income and dividends and do not reflect the impact of advisory fees. Investors cannot invest directly in an index. Comparisons to indexes have limitations because indexes have volatility and other material characteristics that may differ from investment vehicles. **PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.**

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