



Hidden by complexity? Measuring stablecoin, crypto and decentralized finance ecosystems

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Devil in the details



A rapidly evolving DeFi ecosystem

- **~\$3 trillion**

crypto market cap beginning of 2026

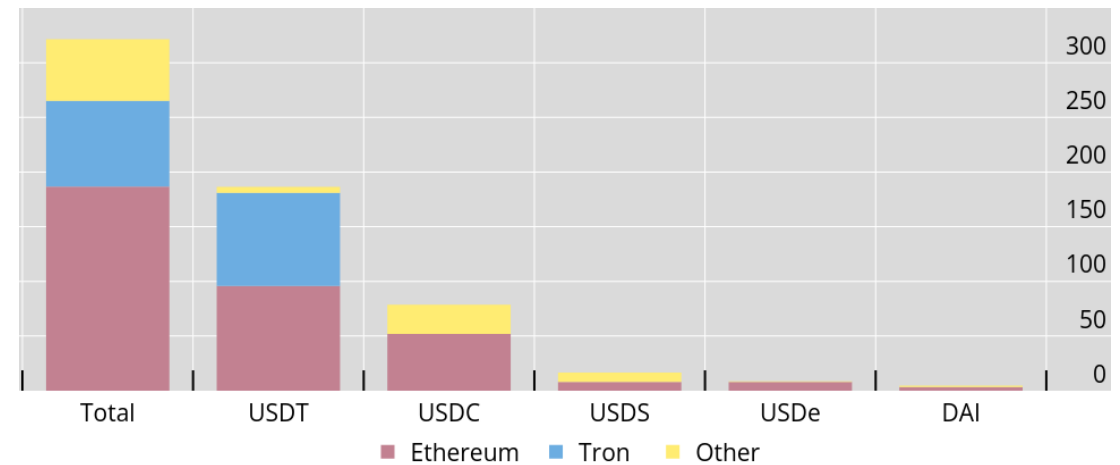
- **~\$300 billion**

stablecoin market cap

- **~3/4 on Ethereum and Tron**

of stablecoin supply

- **Transparent ≠ Reliable**



Deep dive into three challenges

1

Aggregation

Bitcoin — UTXO model
Different methodology →
Different results

2

Programmability

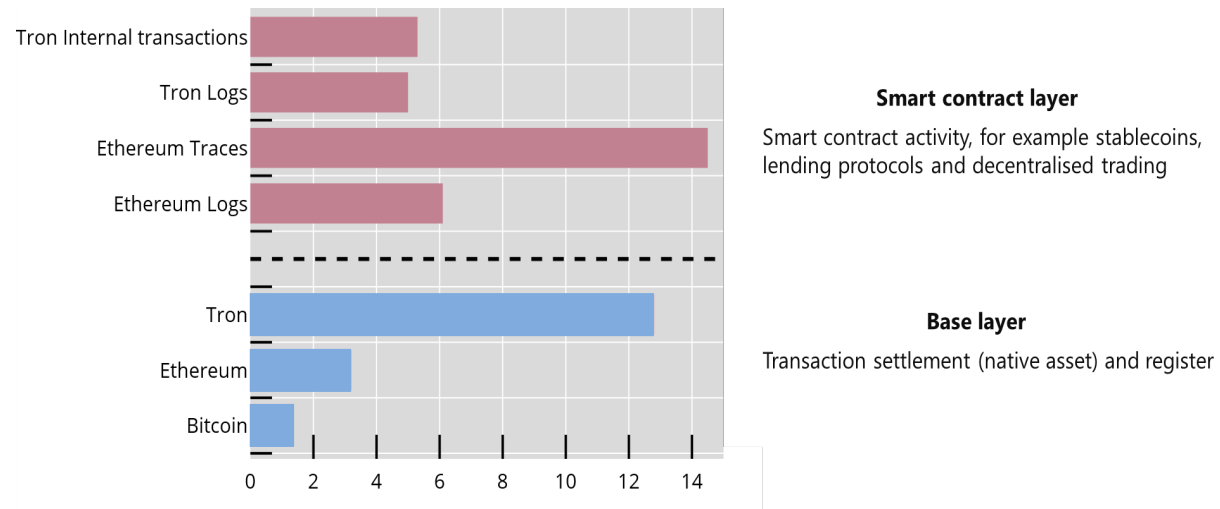
Ethereum — Smart contracts
Economic meaning hidden
under contract noise

3

Comparability

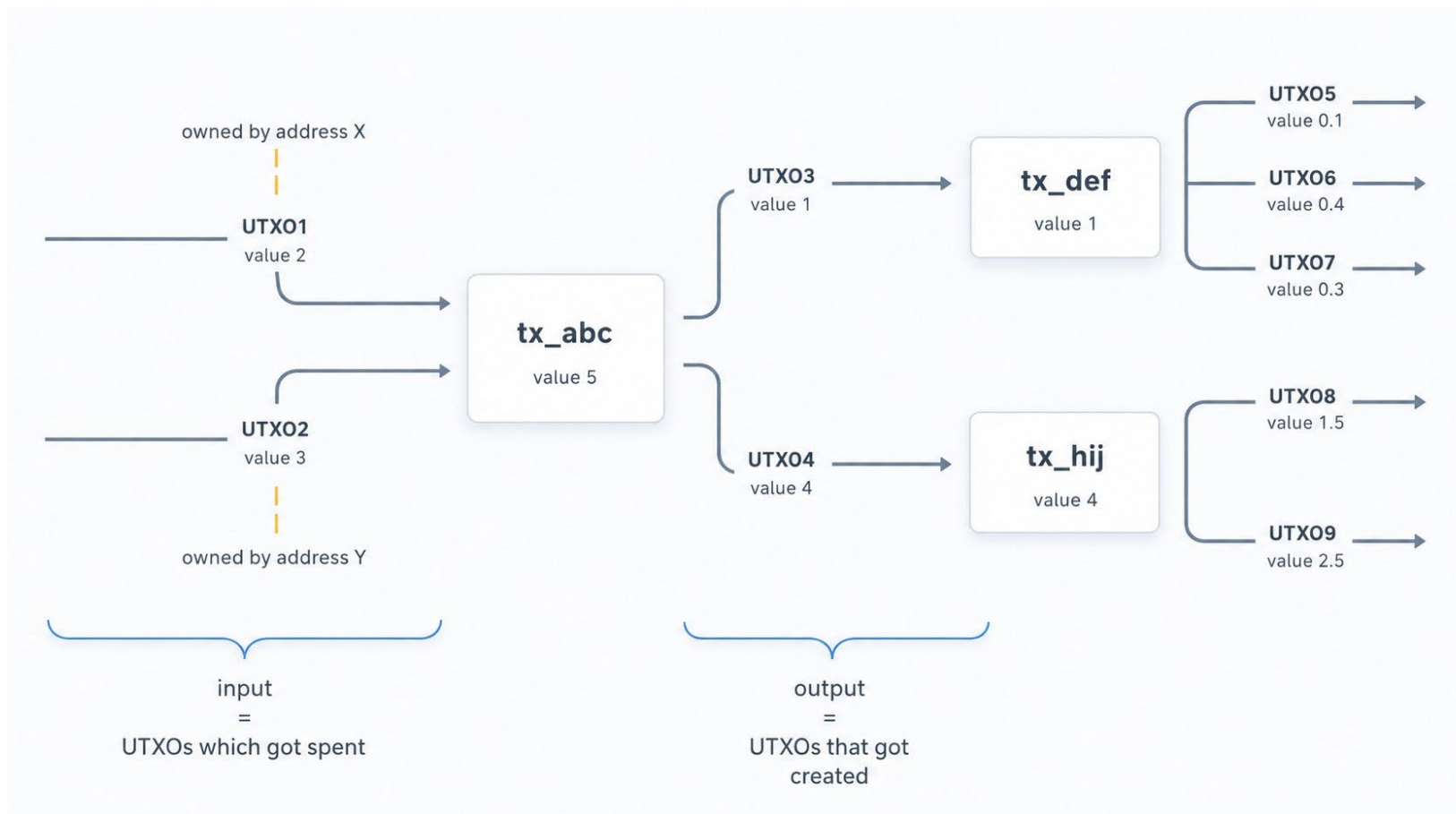
USDT across chains
Same asset plays different
economic roles.

Data and platform overview

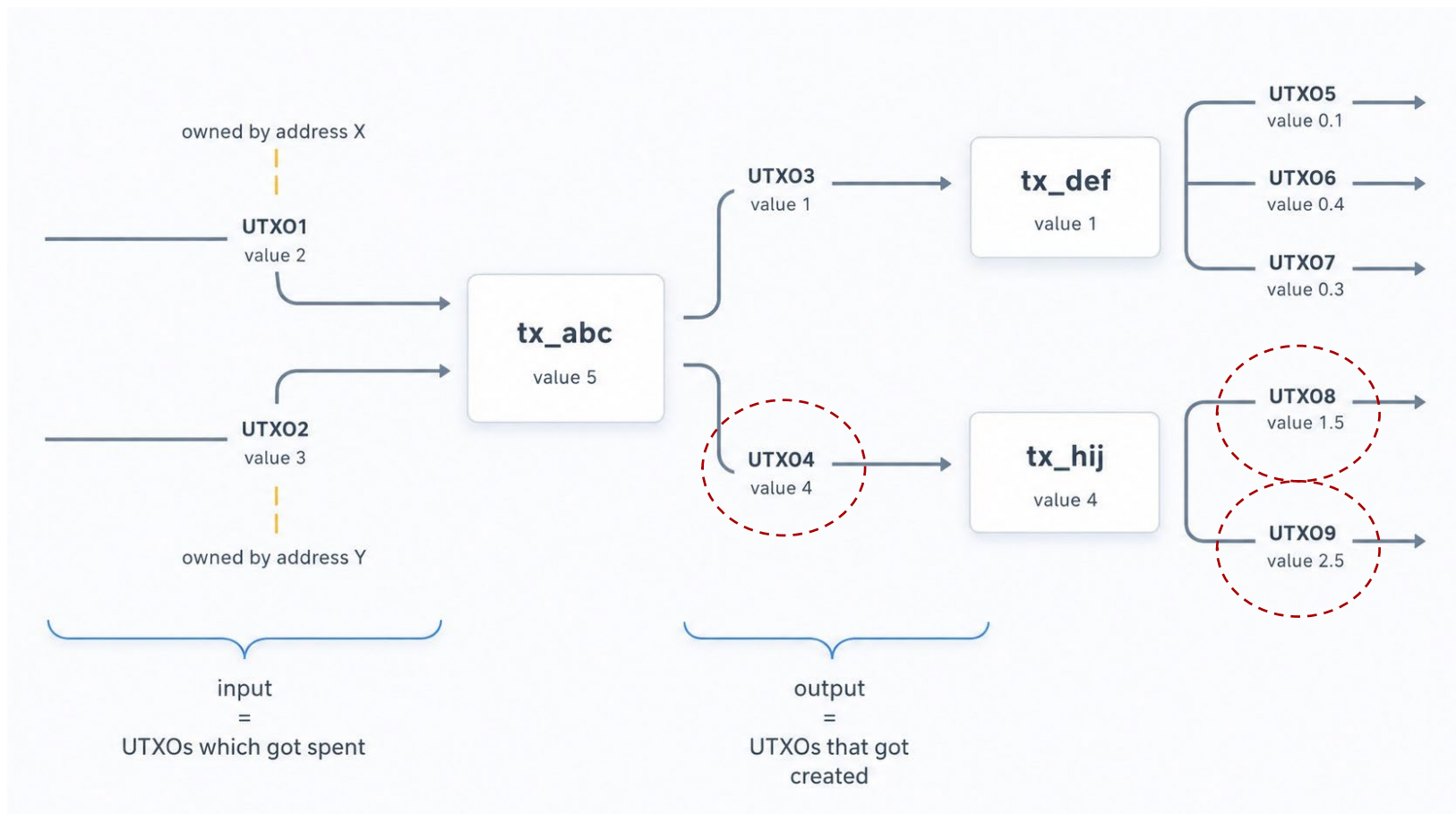


- 3 chains: Bitcoin, Ethereum, Tron
- Granular full-node data
- Dimensions: blocks, transactions, logs, traces, receipts, smart contracts

Bitcoin – UTXO model



Bitcoin – UTXO model



Bitcoin – Transaction values

Upper bound

- Sum of all outputs (including change)

Adjusted

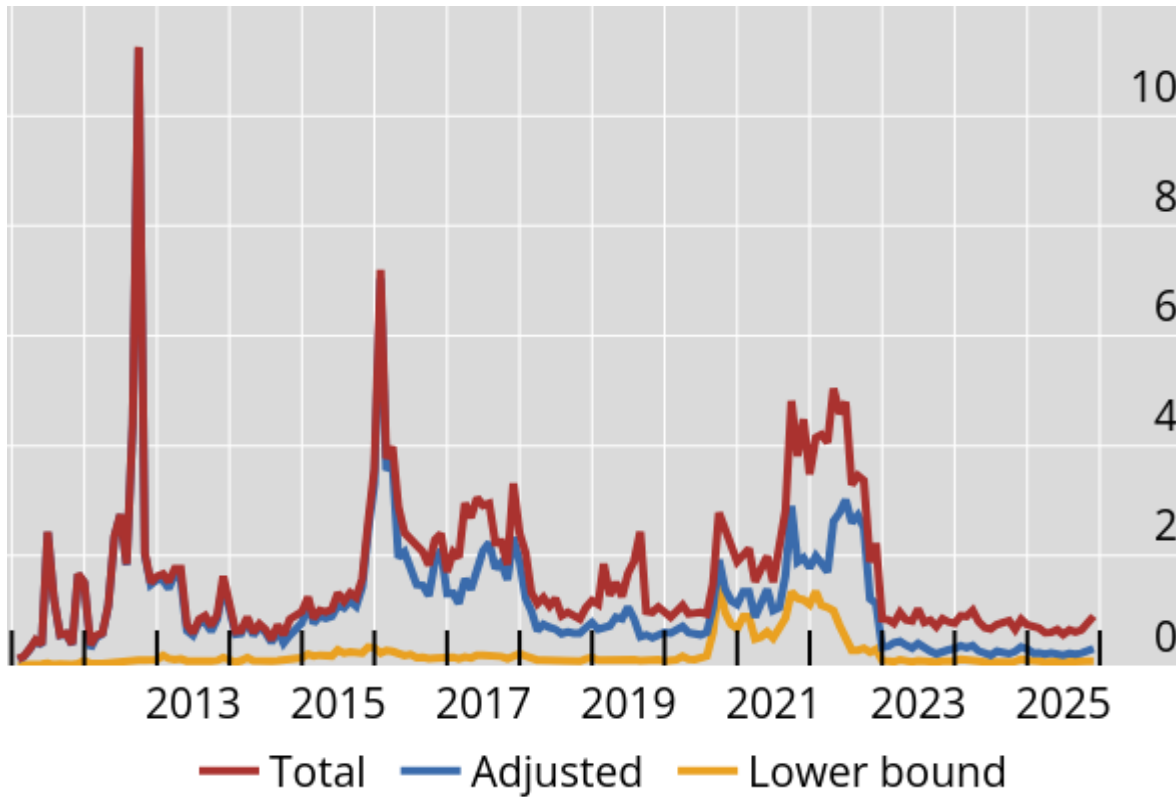
- Excludes self-transfers

Lower bound

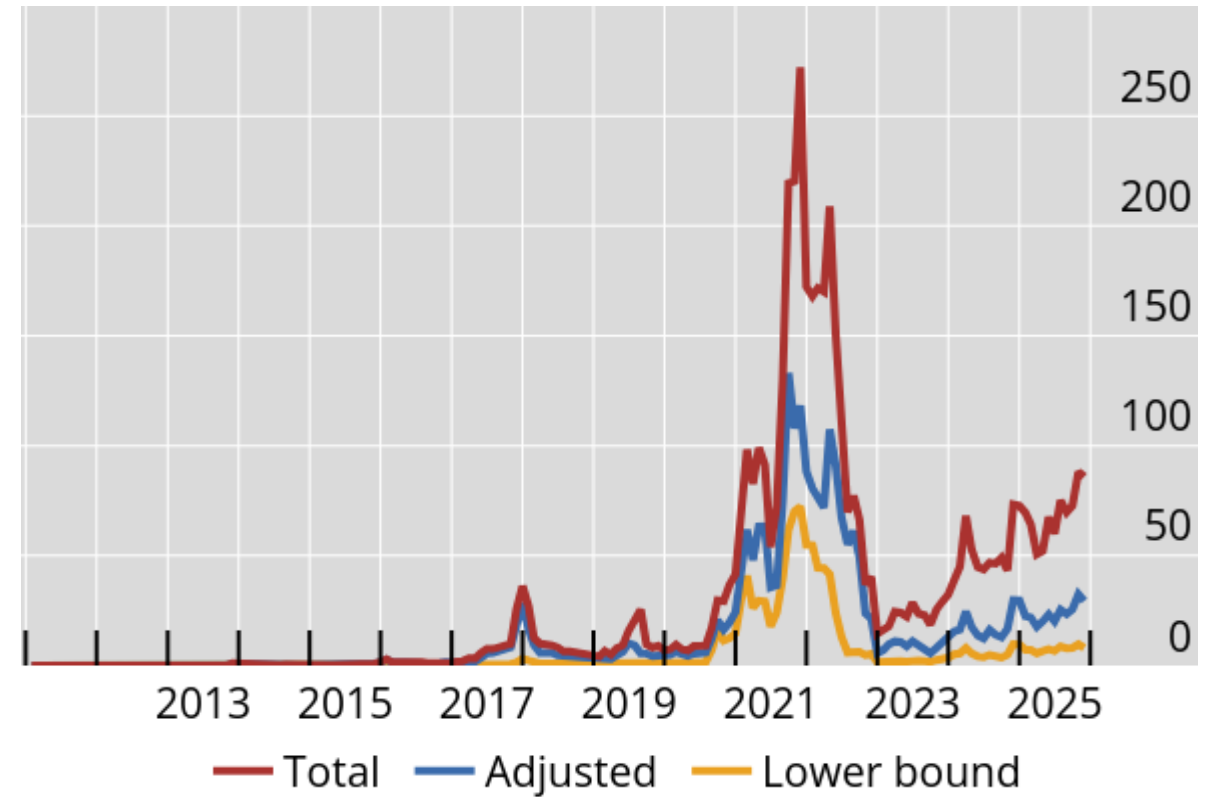
- Assumes the biggest output is change

Bitcoin – Transaction values: the results

- Bounded transaction values estimates in million Bitcoins



- Bounded transaction values estimates in billion USD

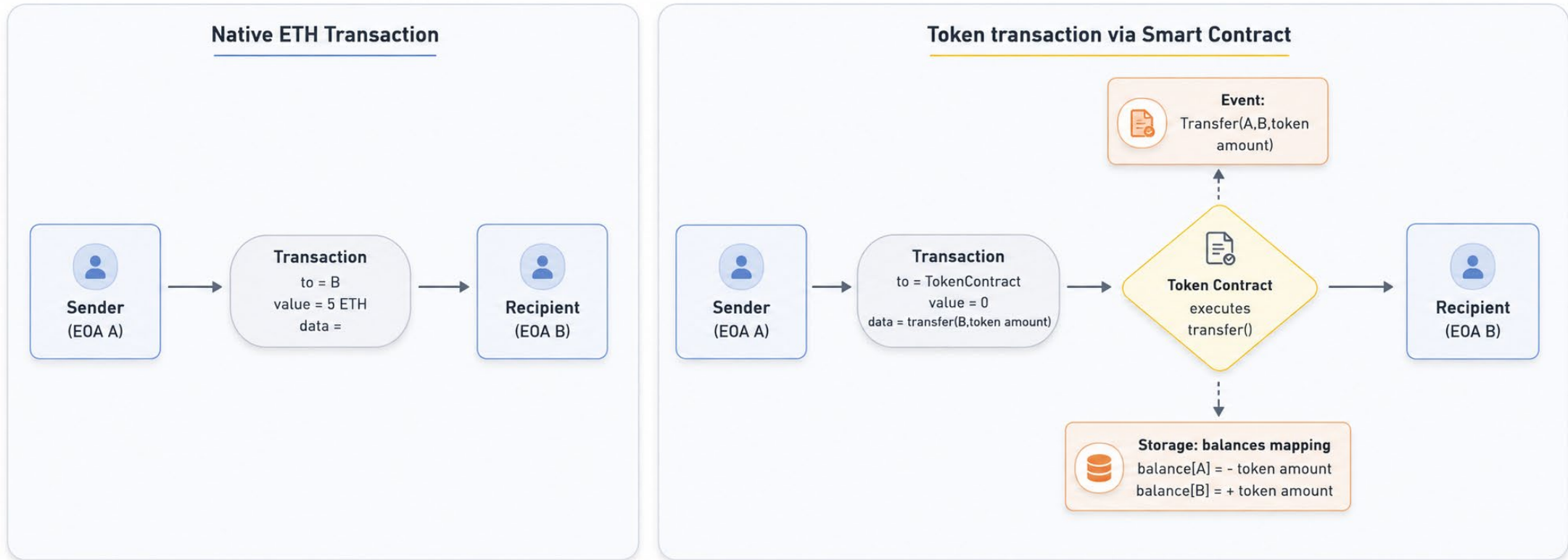


up to

6x

difference in reported transfer volumes

Ethereum – Account model



Ethereum – DeFi smart contract classification

Category	Number of active / total smart contracts
Non-fungible tokens (ERC-721)	0.1 / 0.1
Fungible tokens (ERC-20)	1.4 / 1.5
Proxy contracts	11.8 / 11.9
Uncategorised contracts	54.2 / 78.5
Total deployed contracts	67.5 / 92.0

- **Proxy contracts**

are the largest classified group

- **54 million**

of 67.5 million active contracts
remain uncategorised

Ethereum – Token names and symbols

- **Liquidity pools**

- **~7000**

contracts reuse symbol USDT

Token Symbol	N	Token Name	N	Word	N
uni-v2	465,576	uniswap v2	465,535	v2	467,974
usdt	6,867	pancake lps	6,725	uniswap	466,231
cake-lp	6,730	sushiswap lp token	4,432	token	61,725
slp	4,704	balancer pool token	3,313	coin	25,683
bpt	3,401	invisicoin	3,253	inu	22,273
inv	3,326	tether usd	2,793	ai	14,283
test	2,914	test	1,469	pepe	13,072
eth	2,914	jh	1,469	claim	9,880
pepe	1,884	thetoken	1,423	lp	9,758
\$	1,557	\$	1,420	rewards	9,749
ee	1,522	usdt	1,408	website	9,615
usdc	1,512	vista	1,089	lps	7,277
dai	1,302	ethereum	1,025	pancake	6,757
vista-lp	1,073	shibaswap lp token	1,025	protocol	6,428
sslp	1,044	tether	1,023	usd	6,414

Ethereum – Token names and symbols

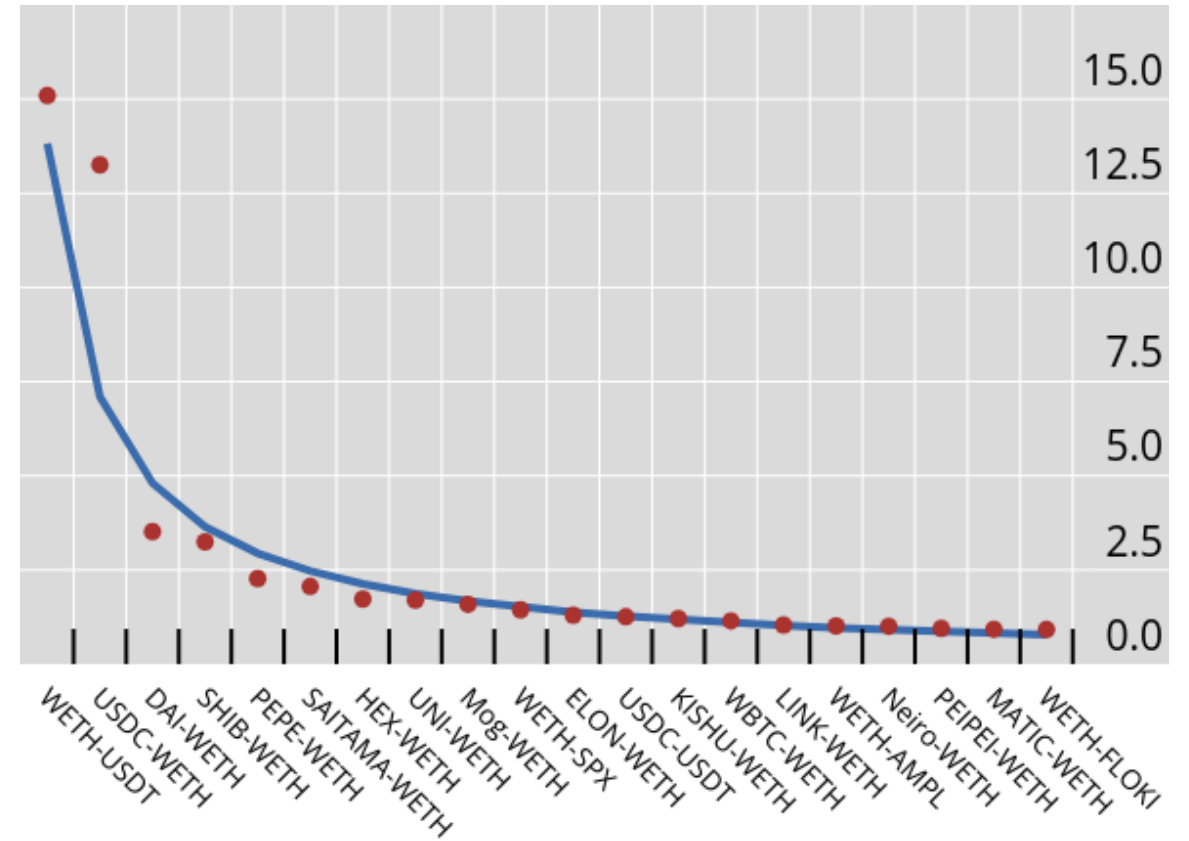
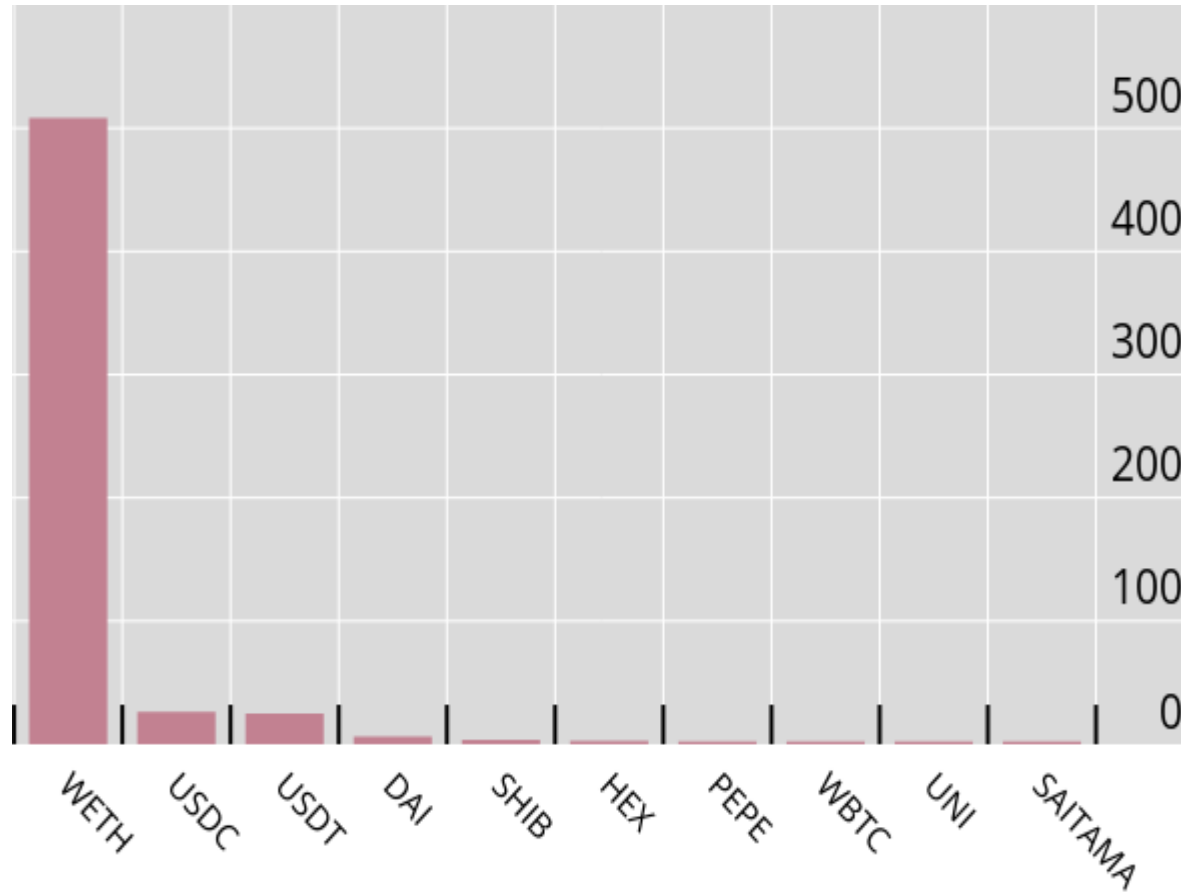
- **Liquidity pools**

- **~7000**

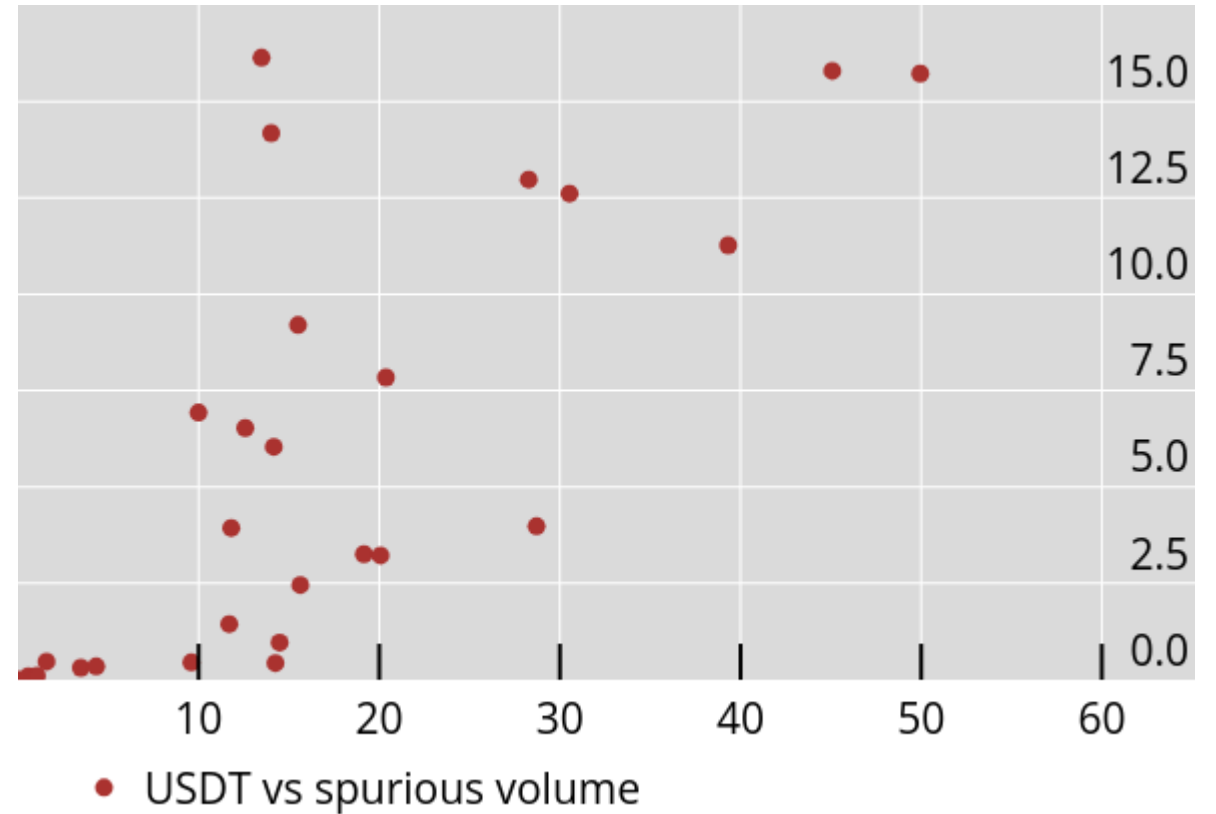
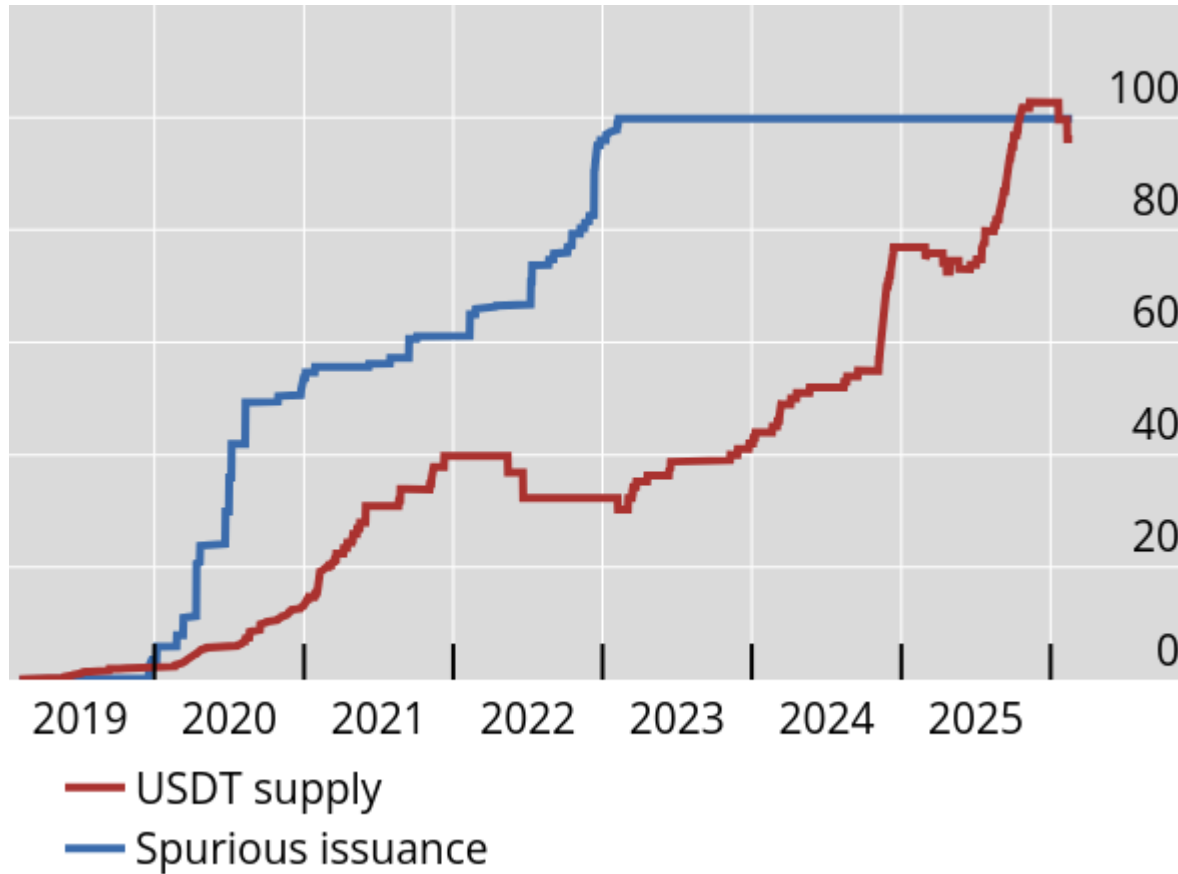
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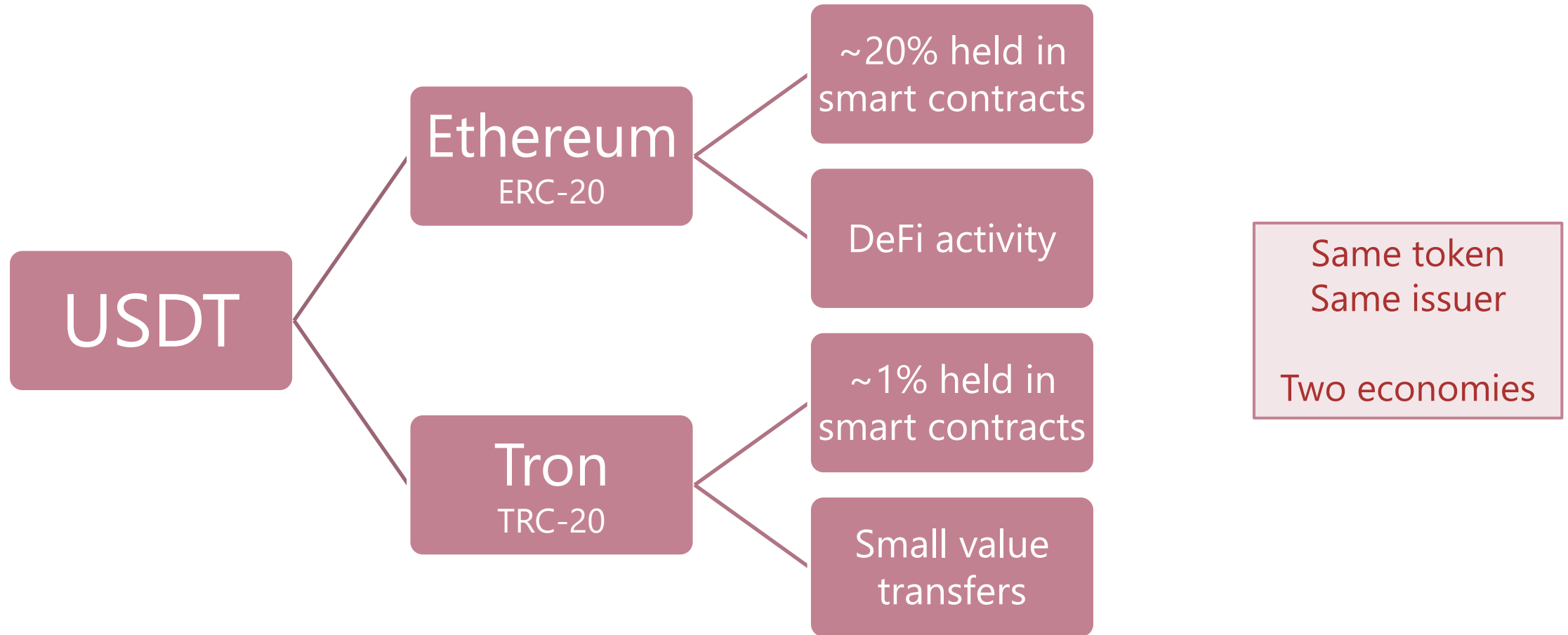
Ethereum – decentralised exchange trading activity



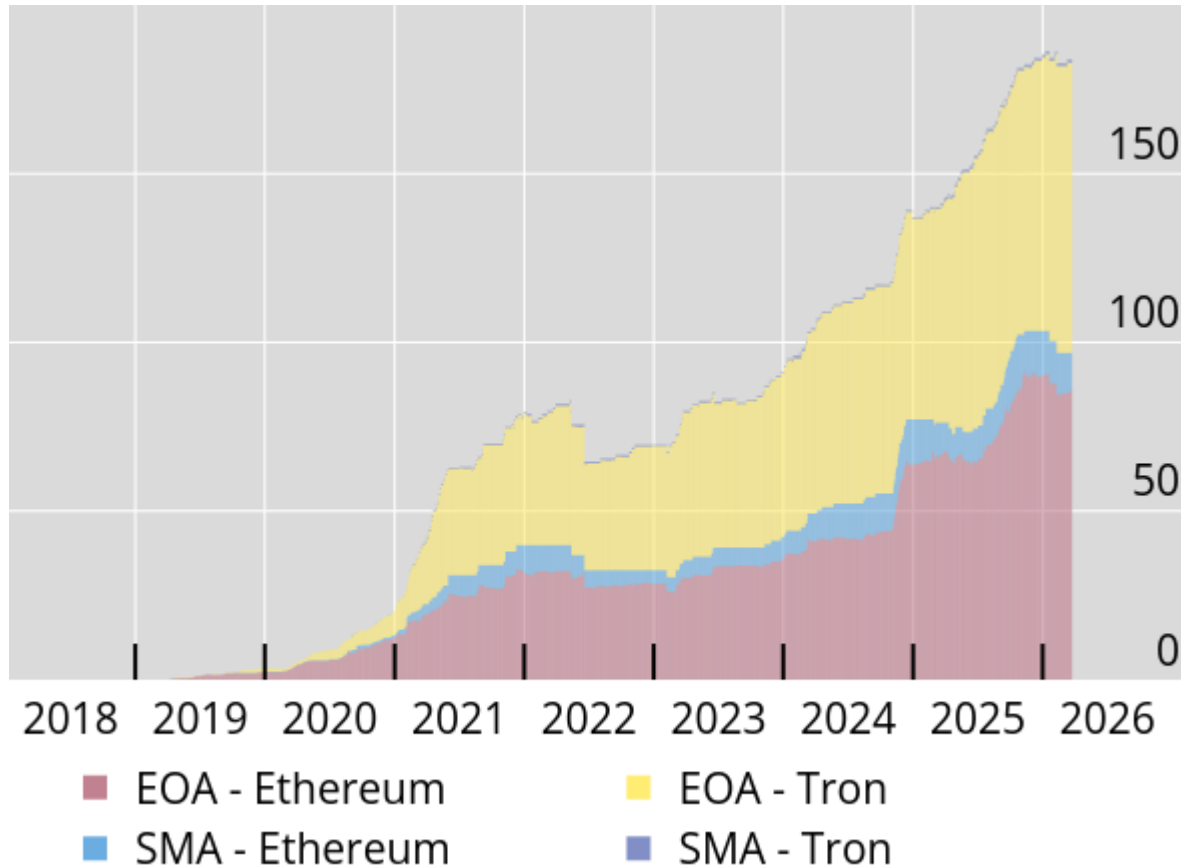
Ethereum – Spurious activity



The comparability challenge



The comparability challenge – USDT across chains



Challenges and Implications

1

Aggregation – different methodology,
different results

2

Programmability – technically similar,
economically different

3

Comparability – same asset, different
economic life

- Transparent ≠ Reliable → headline indicators depend on assumptions
- Naïve aggregation misleads - overstate systemic relevance, hides vulnerabilities
- Sources of divergences - architectural ambiguity, behavioural factors, and compositional noise

Challenges and Implications

- Three principles for using the data:
 - Report ranges, not point estimates
 - Combine technical classification with expert judgement
 - Distinguish infrastructure from asset identity
- **On-chain indicators are noisy approximations** -> sound metrics require technical and economic understanding, and metric must be aligned with policy question.



Thank you!