

### The future monetary system

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#### Prices of crypto coins have been crashing as turmoil grips the crypto universe



Crypto turmoil grabs the headlines but the deeper structural flaws in crypto have been evident for some time

The prevalence of stablecoins indicates search for a nominal anchor and the need to piggyback on the credibility of central bank money



## But the implosion of the Terra stablecoin highlights the imperfect nature of this nominal anchor



Network effects are the essence of money, arising from the virtuous circle of greater acceptance and greater use



#### # . # . Name = : V S Filters Eustomize Last 7 Days Price 24h % Last 7 Days 7d % BEOS EOS Price Market Cap 👩 7d % 24h % Price Volume(24h) 🙆 Dai DA \$0.9531 # Name 1,776,350 BSV Circulating Supply • 0.80% Volume(24h) O Pax Dollar USDP \* 23.53% Market Cap \$948,172,251 7d % Last 7 Days 13 24h % \$315,796,279 330,417,038 EOS TRON \$1.00 5 \$109,94 12 - 0.11% 48 Zcash ZEC Name 112,593,57 992,070,800 EOS ... \$706,287,388 - 0.11% \$947,358,777 - 2.26% . 0.11% \$0.9776 \$24,053,651 \$63.69 S USDD USDD \$46 24,010,086 USDP Axie Infinity AXS \* 1.33% 457 \*30.36% \$697,852,020 945,642,940 USDP 57 - 2.82% - 31.63% \$931,263,595 Portfolio \$0.101 \$114,095,171 1,791,522 ZEC \$14.05 Ine Graph GRT Watchlist \$21,154.79 \* 3.70% \$689,525,672 50 Aave AAVE \* 27.11% 14,622,700 ZEC -1.58% - 34.96% \$887,717,400 \$0.2397 \$145,684,180 10,368,369 AXS \$58.89 Klaytn KLAY \* 5.60% \* 38.34% \$674,111,227 59 Huobi Token HT 63,179,006 AXS - 0.25% -1.81% \$817,982,995 \$11.24 \$161,373,590 2,740,080 AAVE В окв окв \$5.29 \$654,825,778 \*1.85% 52 S FTX Token FTT -1.07% -21.68% Neutrino USD USDN \* 24.41% 13,889,132 AAVE \$9.28 \$815,454,941 \$37,887,658 7,166,776 HT Neo NEO \$0.9714 3 \$620,412,515 -1.47% 53 +0.419 Maker MKR • 0.68% 154,250,310 HT .0.97% \$1,852.97 \$782,416,476 () USD Coi O PAX Gold PAXG \$8,893,594 \$777.20 62 \$616,086,6 **~** 0.38% 9,155,887 USDN - 27.84% 54 -0.92% IOTA MIOTA 805,491,729 USDN \* 31.23% \$0.2421 \$759,818,282 Fantom \$583,2 \$68,167,461 \$0.2677 - 37.68% •0.98% 87,709 MKR 55 - 9.21% eCash XEC \$1.76 \* 22.08% 977,631 MKR \$744,157,790 pchain \$18,045,958 67,404,099 MIOTA \$0.0000387 + 17.84% \$5 • 1.67% • 22.97% • 0.95% Carda \$0.09756 BitTorrent-New BTT 2,779,530,283 MIOTA Chiliz CHZ \$738,849,756 \$0.0000007812 - 3.29% - 28.42% \$12,107,984 \$31.71 312,830,905,064 XEC \* 2.14% \$45.28 19,089,473,423,303 XEC \$71,967,583 211,564,913 BAT \*25.56% \$728,065,816 2) Quar \$509,421,894 **\$67,938,228** 86,970,696,854,766 BTT \$0.05753 + 13.22% - 3.73% 1,330,082,007 LRC w \$0.3402 \$94,036,488 932,028,892,857,000 BTT Sasic Attenti 246,548,269 LRC \$507,309,342 1,036,200,000 FLOW OGE Toke \$33,613,861 -0.76% -24.70% O Dogec 23,295,989 FLOW \$0.3814 \$1,495,136,447 10 **-**8.29% **-**41.55% Loopring LRC \$1.44 68 \$ Flow FLOW 33

#### But crypto has seen a bewildering proliferation of coins...

#### ...with over 10,000 crypto coins jostling for a place in the limelight



Fragmentation of crypto arises because of the rents that go to validators; network congestion and high fees are a feature, not a bug



#### Finding the right capacity at the outset is to balance on a knife edge





"Guys, no one's using our 8 lane highway." "We need 32 lanes." "You're a genius."#Overheard #TransactionSuperhighway #Bcash 9:06 AM - May 8, 2018

 $\bigodot$  1,595  $\,\,\bigcirc$  397 people are talking about this

## Fragmentation of crypto: initially, most decentralised finance (DeFi) collateral was posted on the Ethereum blockchain...





## ...but increasingly, other crypto platforms exploited congestion and high fees to gain DeFi market share



#### By early May 2022, the Terra blockchain was the fastest growing platform...





#### ...right until its collapse in May 2022





#### It is becoming clear that crypto only works with inflows of new users







Metaphor for the future monetary system:

a tree with central bank money as its solid trunk, supporting a rich and diverse ecosystem The foundation: central bank money (M0)...



...supporting bank and non-bank payment service providers (PSPs)



#### Wholesale central bank digital currencies (wCBDCs) enable new capabilities



Central bank money in decentralised settings use distributed ledger technology (DLT) with real user names, rather than hiding behind private keys...



...participants prove the "provenance" of the tokens – obtained from valid past transactions, much as someone proves that the "banknote" is not counterfeit...



...and, unique to the digital world, a need to ensure that the same funds are not spent twice ("double-spending")



This notary role can be played by the central bank



Enhanced functions include programmability – with self-executing smart contracts...



...composability – capacity to combine different functions ("money legos")...



...and tokenisation, such as the digital representation of commercial bank deposits (tokenised deposits)...





#### ... or even real assets, allowing for fractional ownership and instant settlement

#### Retail CBDCs extend digital central bank money to households and businesses



They are a close cousin of retail fast payment systems (FPS)



#### For both, application programming interfaces (APIs) enable interoperability



#### Retail FPS harness network effects and enhance financial inclusion: Pix in Brazil



#### They can lower costs for merchants and other users



#### CBDCs can also link across borders, much like the canopy of a forest



#### Multi-CBDC (mCBDC) platforms show particular promise



# Canopy from above: a seamlessly integrated global system





#### A diverse global monetary (eco)system, rooted in central bank money

