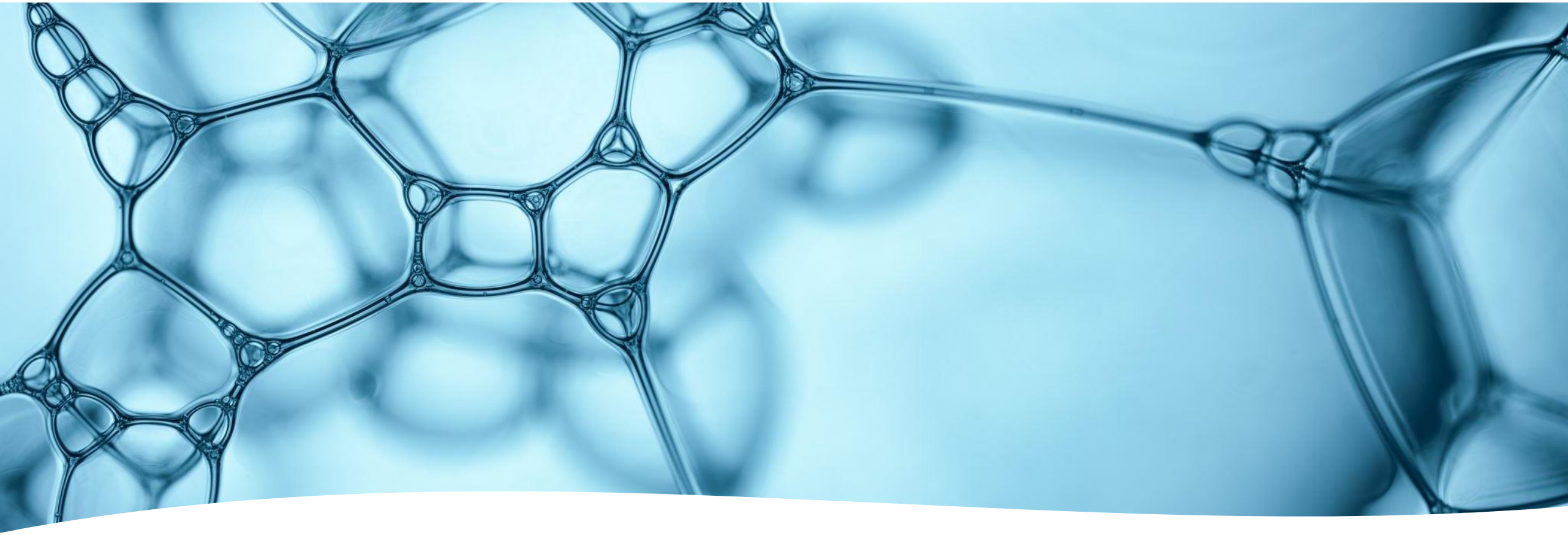


Money Reimagined

Michael J. Casey, Chief Content Officer
CoinDesk

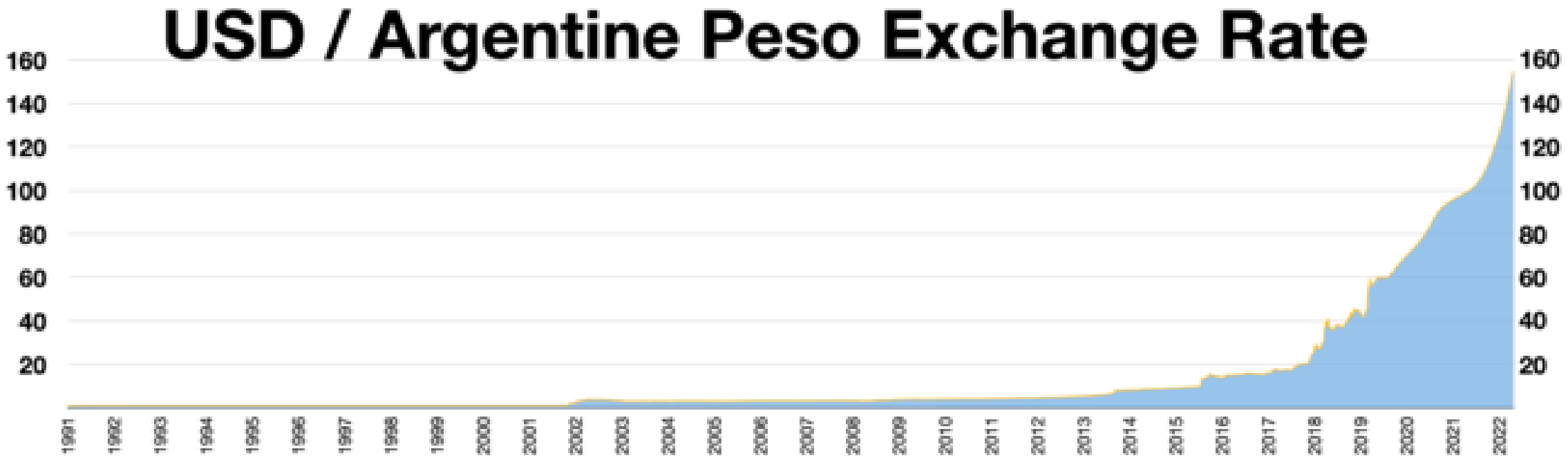
Washington, DC
Nov. 15, 2023

11th IMF Statistical Forum
Measuring Money in the Digital Age

CoinDesk


BANCOS LADRONES
DEVUELVAN
NUESTROS DÓLARES
LOS DEPÓSITOS
EN DÓLARES
BANCO CIUDAD
PARA COMPRAR MI
SOY DOCENTE MUNICIPAL

Why?


USD / Argentine Peso Exchange Rate
160
140
120
100
80
60
40
20
1991
1992
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Bitcoin: A Peer-to-Peer Electronic Cash System

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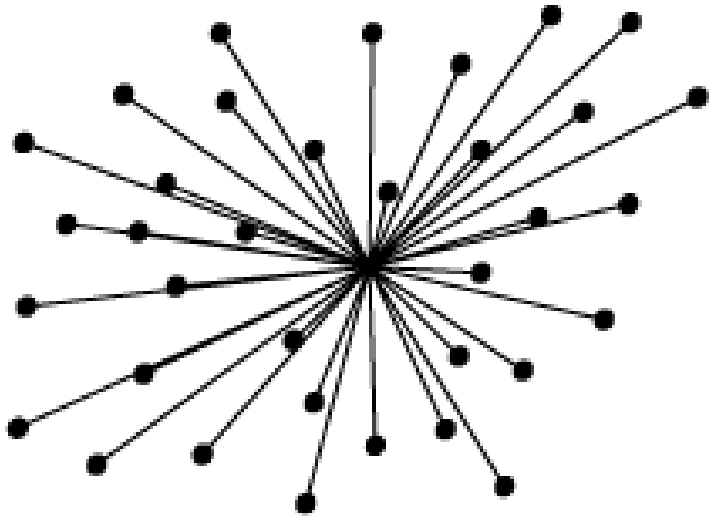
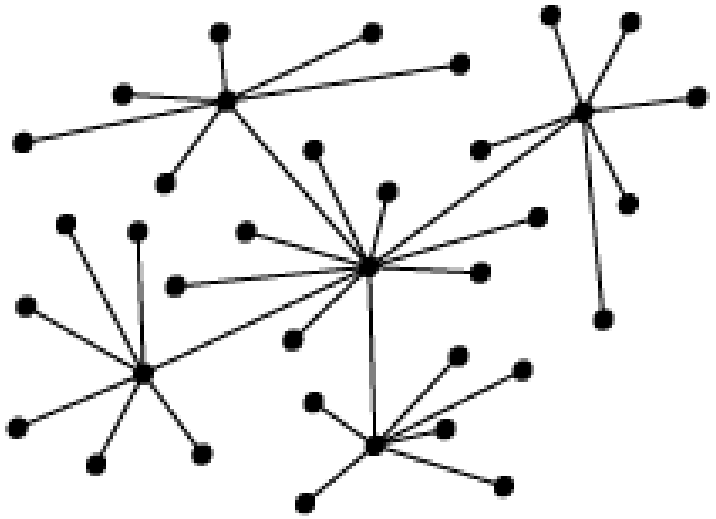
Abstract. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

1. Introduction

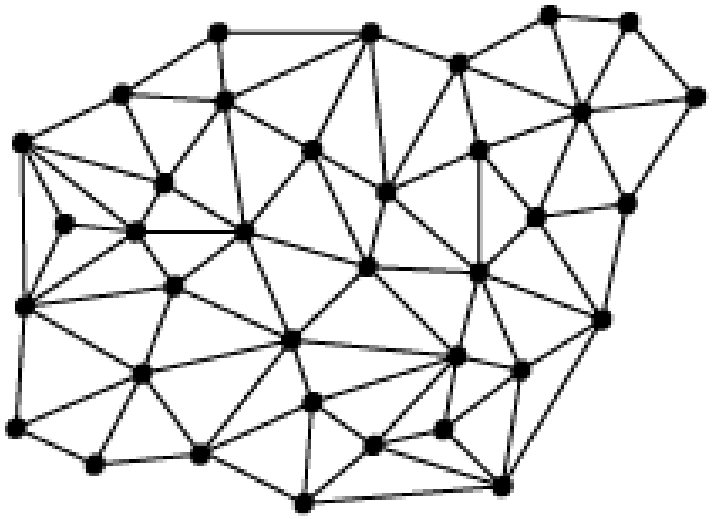
Commerce on the Internet has come to rely almost exclusively on financial institutions serving as trusted third parties to process electronic payments. While the system works well enough for most transactions, it still suffers from the inherent weaknesses of the trust based model. Completely non-reversible transactions are not really possible, since financial institutions cannot avoid mediating disputes. The cost of mediation increases transaction costs, limiting the minimum practical transaction size and cutting off the possibility for small casual transactions, and there is a broader cost in the loss of ability to make non-reversible payments for non-



centralised

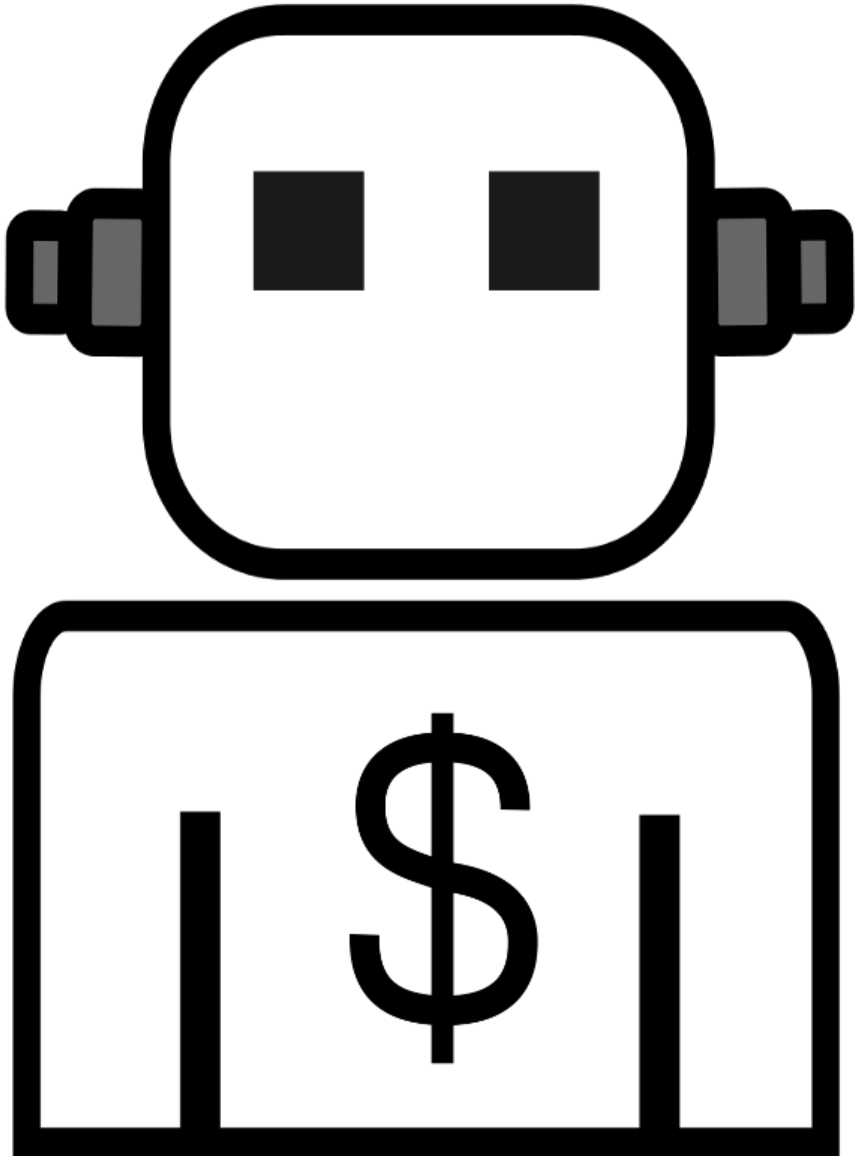


decentralised



distributed

Programmable Money



Trust = Truth

Thanks!

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