香港金融科技行業協會

# Fintech & Web3: Behind the Scene

26Feb2025

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President
Hong Kong Fintech Industry Association
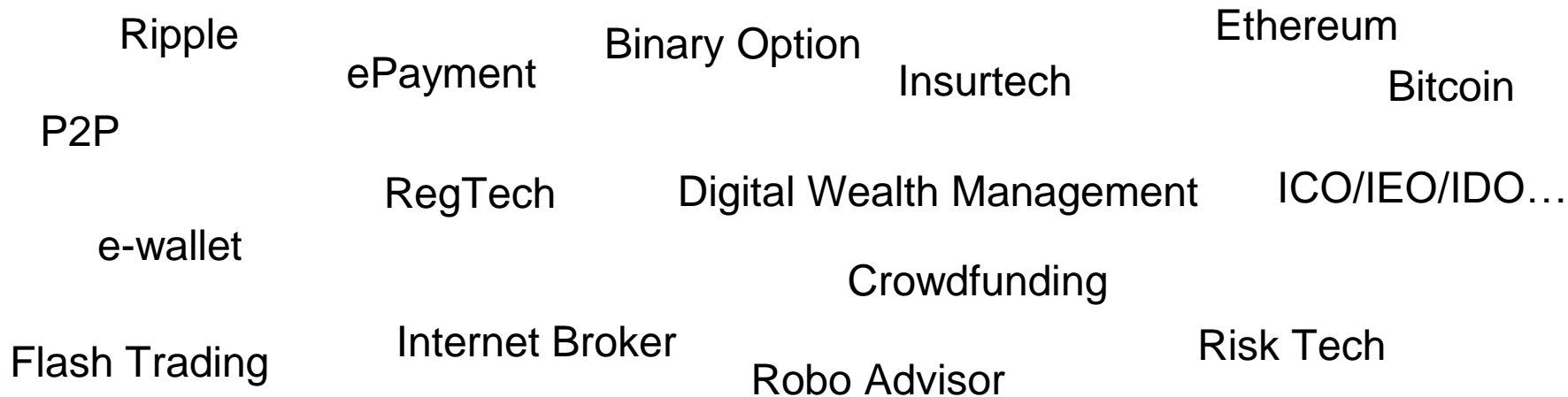
https://www.hkfia.org/

# What is Fintech?

According to PwC:

*Financial technology—FinTech for short—describes the evolving intersection of financial services and technology.*

*The term can refer to startups, technology companies, or even legacy providers. The lines are blurring, and it's getting harder to know where technology ends and financial services begin.*

Translation to human language:

Whatever technology that enables financial services.

# What is Fintech?

Ripple

ePayment

Binary Option

Ethereum

Insurtech

Bitcoin

P2P

RegTech

Digital Wealth Management

ICO/IEO/IDO…

e-wallet

Crowdfunding

Flash Trading

Internet Broker

Risk Tech

Robo Advisor

AI   Blockchain   Cloud   Big Data   Cybersecurity   Internet

"Banking is Essential,
Banks are Not"

by Bill Gates

# Fintech 3.0

from Unbundling a Bank
to Resembling a Bank
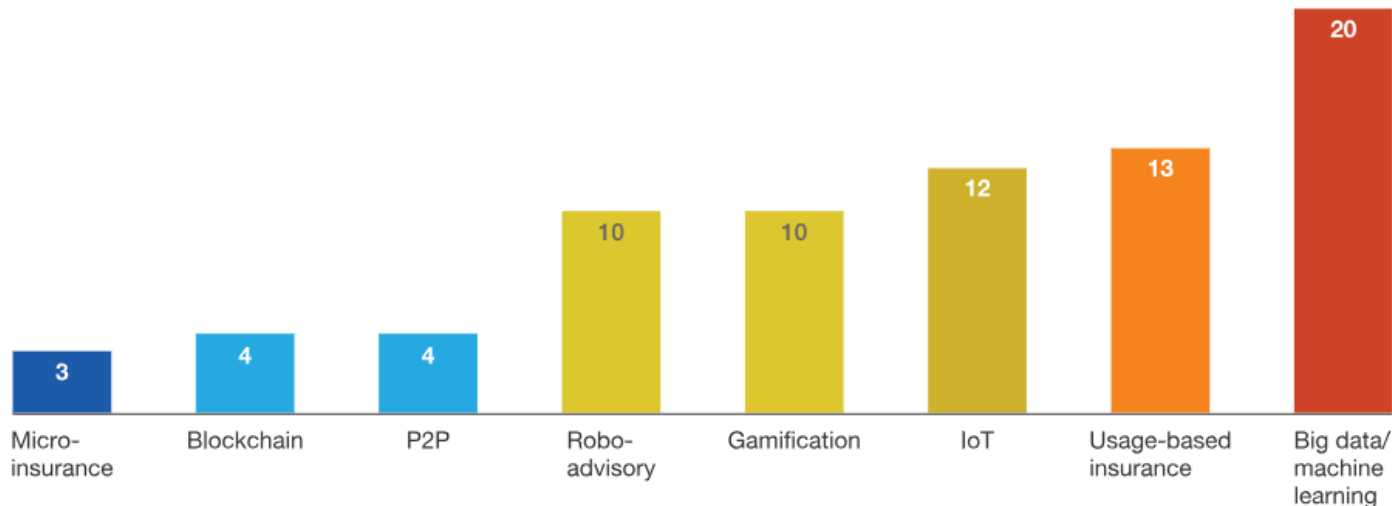
# Doing old things in new ways

| Old solutions | Our Needs | New solutions |
|---|---|---|
| Cash / Tele-transfer / Swift | Money Transfer | Bitcoin / e-wallet |
| Bank loan / Credit Card | Borrowing | P2P Lending / Micro financing |
| Bank deposit / ETF | Deposit / Investment | P2P lending / Digital Wealth Management |
| IPO / VC / PE | Equity Fund Raising | Crowdfunding / ICO |
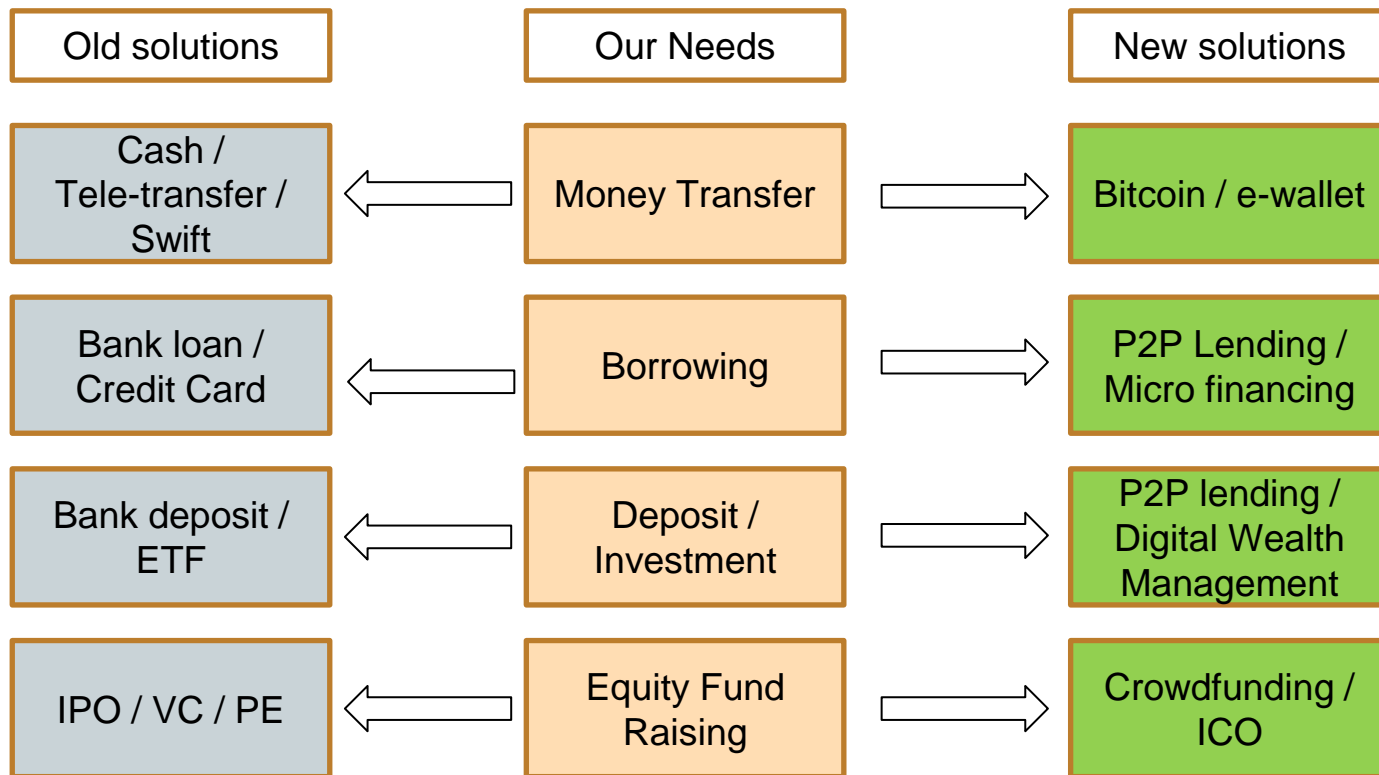
# P2P Lending vs Bank Loan and Deposit

**LendingClub**

Borrowers

Investors

$$

Added Values:
1. Information
2. Tenor
3. Amount
4. Risk Assessment

Interest + Principal

# What mean by Insurtech?

Insurtechs are adopting new technology and concepts, especially within big data and machine learning and usage-based insurance.

Insurtech adoption of new technology and concepts,[1] %



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | 4 | 4 | 10 | 10 | 12 | 13 | 20 |
| Micro-insurance | Blockchain | P2P | Robo-advisory | Gamification | IoT | Usage-based insurance | Big data/machine learning |

[1]~500 commercially most well-known cases registered in the database.

McKinsey&Company | Source: McKinsey Panorama Insurtech Database

# Value of Fintech to the real economy?

# "Mother of all industries/百业之母"
# Old + New = ?

- Ecommerce
- Restaurant going IPO
- KOL
- Inclusive Finance
- 。。。

# Unintended Consequence of Fintech

The financial market is healthy ...
until it is not.

# Getting tougher to run a bank. Why?

| Bank | City | State | Year | Assets at time of failure | | Ref. |
|---|---|---|---|---|---|---|
| | | | | Nominal | Inflation-adjusted (2022) | |
| Washington Mutual | Seattle | Washington | 2008 | $307 billion | $417 billion | [3] |
| First Republic Bank | San Francisco | California | 2023 | $229 billion | $229 billion | [4][5] |
| Silicon Valley Bank | Santa Clara | California | 2023 | $209 billion | $209 billion | [6] |
| Signature Bank | New York | New York | 2023 | $118 billion | $118 billion | [7] |
| Continental Illinois National Bank and Trust | Chicago | Illinois | 1984 | $40.0 billion | $113 billion | [3][8] |
| First Republic Bank Corporation | Dallas | Texas | 1988 | $32.5 billion | $80 billion | [9] |
| American Savings and Loan | Stockton | California | | | | |
| Bank of New England | Boston | Massachusetts | | | | |



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**U.S. Banks are sitting on $1.7 trillion in unrealized losses, research says. That's not a problem—until it is**



FRED — Deposits, All Commercial Banks

Wed, Apr 2, 2014: 10,013.3037
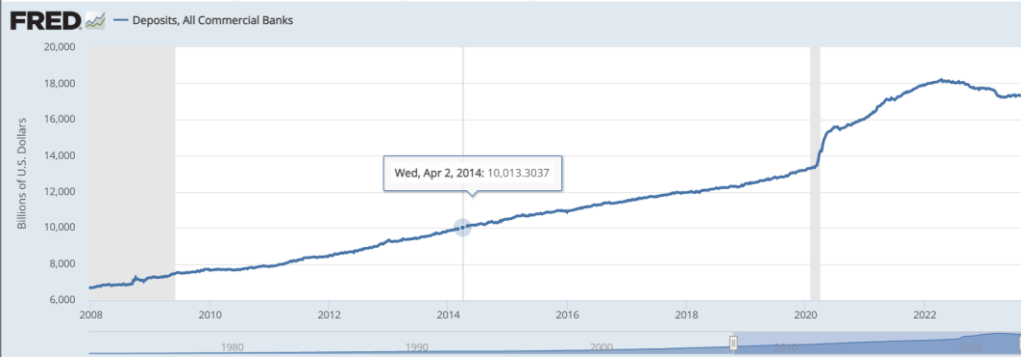
# GameStop short: Wall Street vs Retail Investors

- Stock price from USD45 to 400+ in 5 days

- Then from 400 to 100 in another 5 days

- Daily turnover USD10bn (similar to Apple)

》》 issues:

Regulator, Internet Platform and

Wall Street overpower….

# Initial purposes （初心）of stock market lost?

- Market vs Casino

- Distorted Price Discovery: Liquidity Driven

- "Index-isation" of stock market（股市指数化）: Relationship between company and investors



Bloomberg

● Live Now   **Markets**   Economics   Industries   Tech   AI   Politics   Wealth   Pursuits   Opinion

Markets

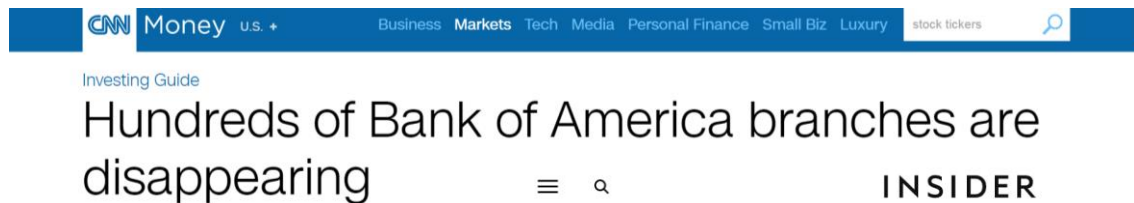## Index-Fund Trillions Are Distorting Prices in the S&P 500

- Study shows passive flows are creating valuation distortions
- Smaller stocks neglected by index cash eventually outperform

# Dark Industry + Fintech
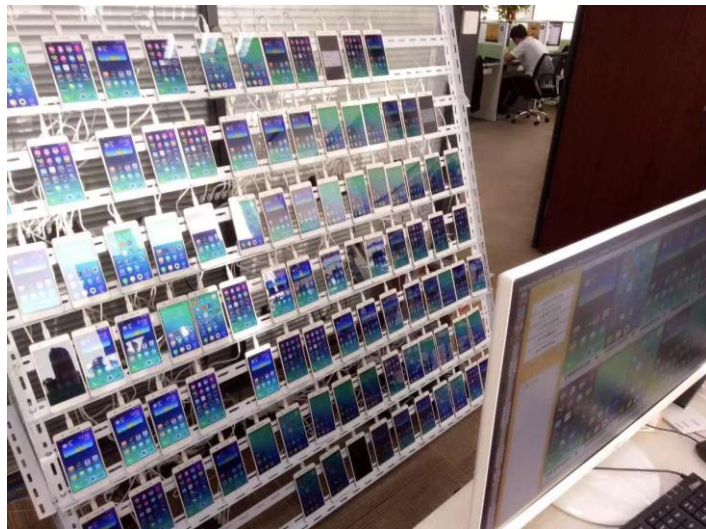
# AI + Fintech = less staff

- Fund Manager

- Compliance

- Trader

- Financial Advisers

- Analyst

- …
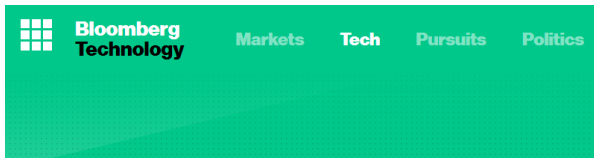
# Fintech doesn't solve moral issues

Storm in a coffee cup? Hong Kong-based Nbition tells angry Kickstarter backers their Arist smart coffee maker is coming - just not the one they ordered

Explore business potentials in China's most talked about cities and industries

# Suit Alleges Rampant Fraud at Collapsed HUD Helmet Maker Skully

Market will showcase its rationality
in the wildest way

市场会用最疯狂的方式
来展示它的理性

# Money Evolution

# Money History



Source: Tencent

Base on Credit/Debit Cards

Digital Currency (CBDC/Stablecoin)
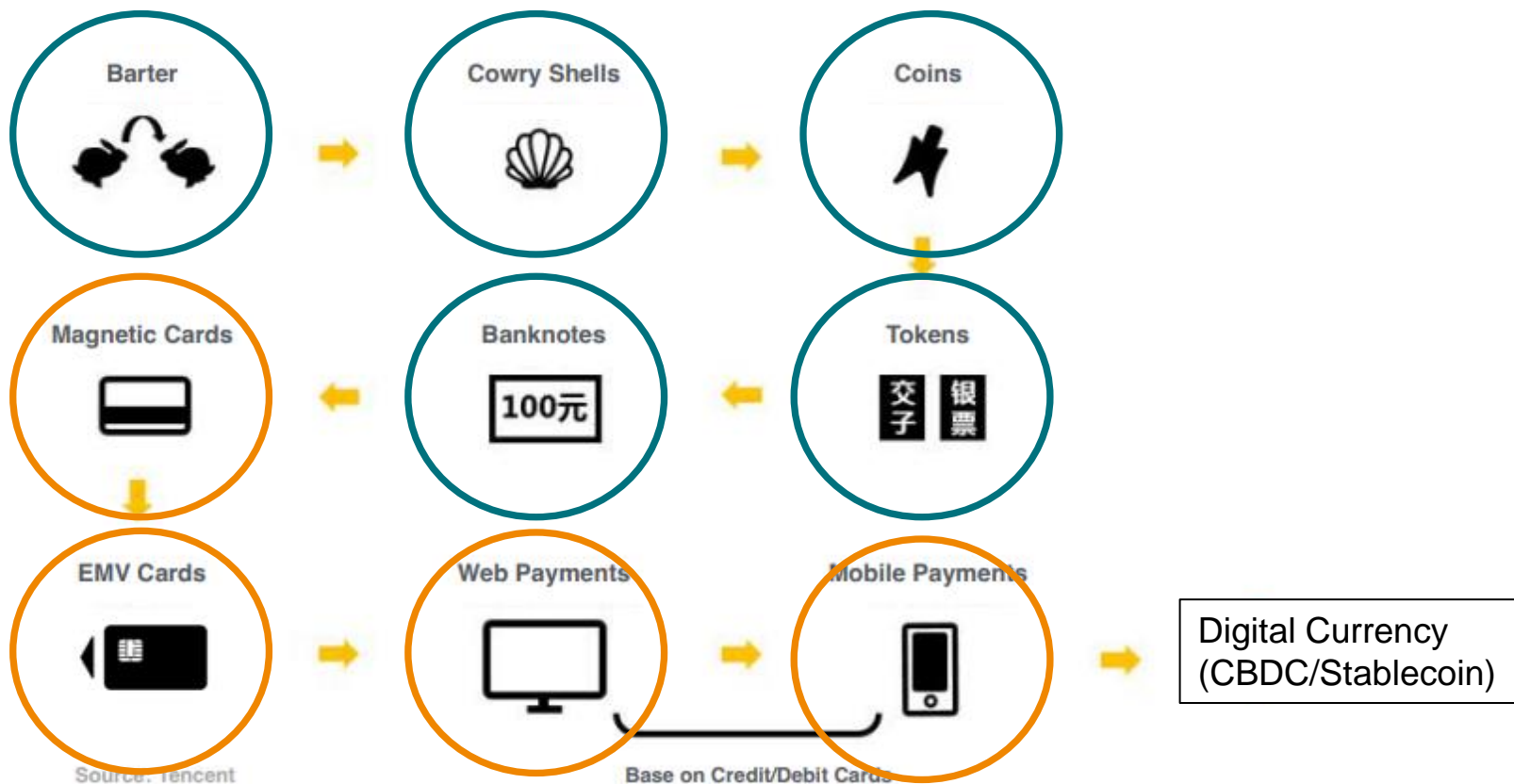
# M2 Money Supply : Global Comparison

US M2
China M2
Japan M2
Euro M2
Canada M2

*Approximately **-4%** Growth rate for US M2 is indicating the contraction of money supply

Over **20%** of USD in circulation was created in 2020 alone.

M2 Money Supply in Trillions (USD)
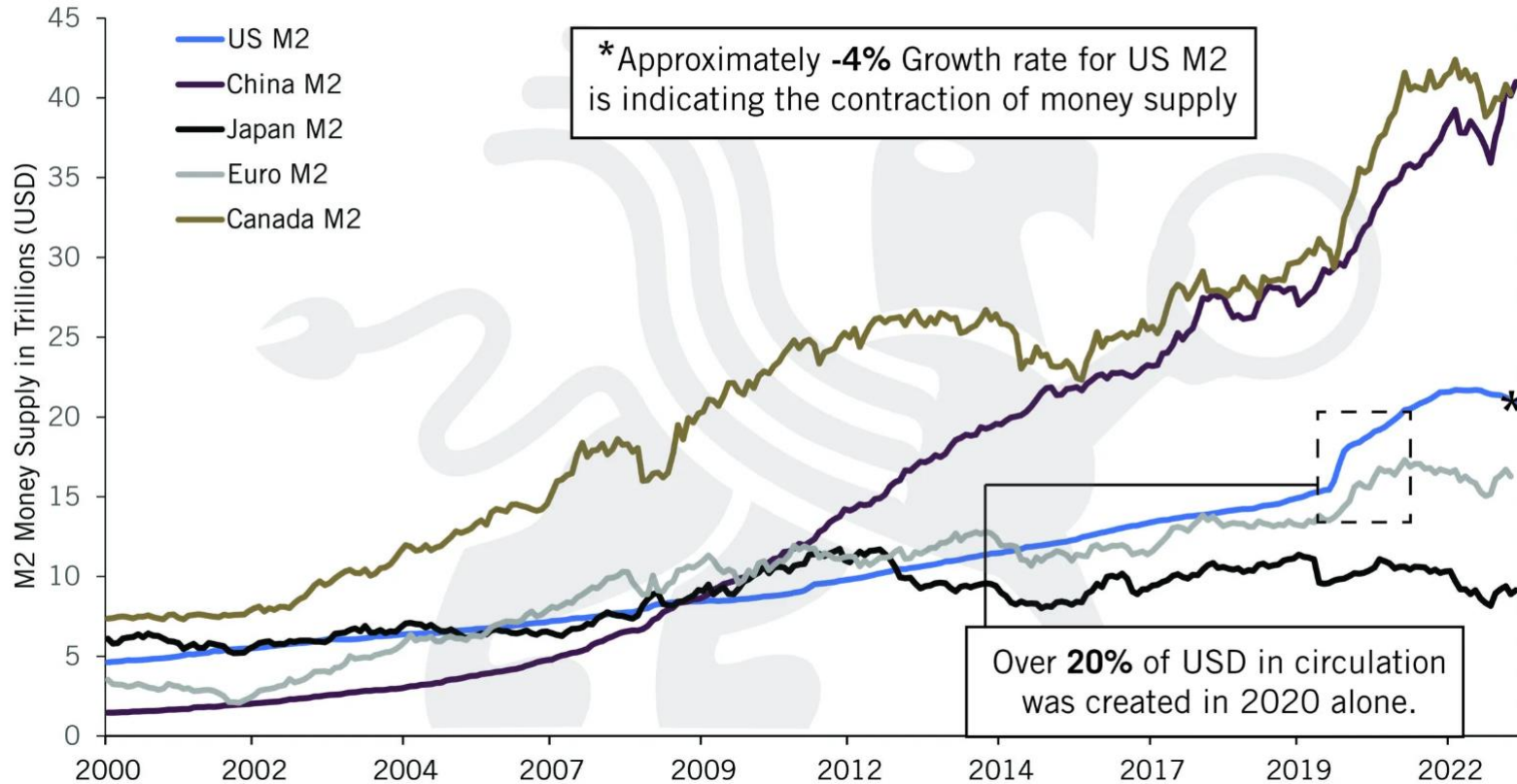
*Source: Ycharts; fred.stlouisfed.org; BOJ; Quandl; BMG Group Inc.*

# The Beginning of the Beginning

## Bitcoin: A Peer-to-Peer Electronic Cash System

Satoshi Nakamoto
satoshin@gmx.com
www.bitcoin.org

**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.

Cryptocurrency | Decentralised platform | DAPP | DeFi | NFT | Metaverse
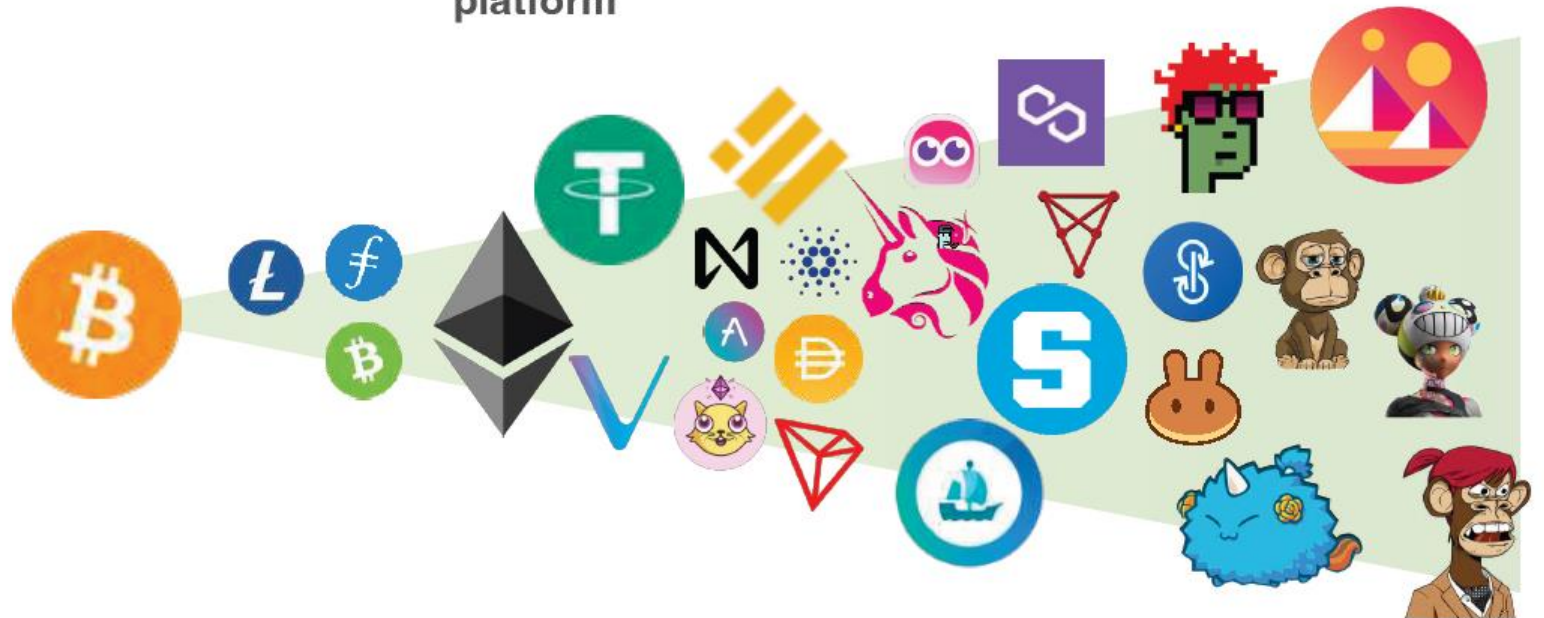
2009     2014     2016     2018     2020     2022

"Money is the most universal and efficient systems of mutual trust ever devised"

Yuval Noah Harari
a historian, philosopher, and the bestselling author of Sapiens: A Brief History of Humankind, Homo Deus: A Brief History of Tomorrow, 21 Lessons for the 21st Century, the series Sapiens

# Denationalisation
# of Money

## F. A. HAYEK

**Friedrich Hayek哈耶克**

# Very few problems truly worth using blockchain solutions but they are importance

**Cost of Blockchain < Value of Blockchain (transparency, decentralised…)**

1. Only the most valuable asset worth storing on blockchain
- Financial Assets
- Personal identity, social relationship and reputation

2. Only the most important process worth using smart contract
- Financial transactions
- High value business contract

| Web1 | Web2 | Web3 |
|---|---|---|
| **Read** | **Read, Write** | **Read, Write, Own** |
| Decentralization of location | Decentralization of media and content | Decentralization of finance, governance and ownership |

Right time, right place, right people

# Hundred flowers bloom at the same time
# 百花齐放
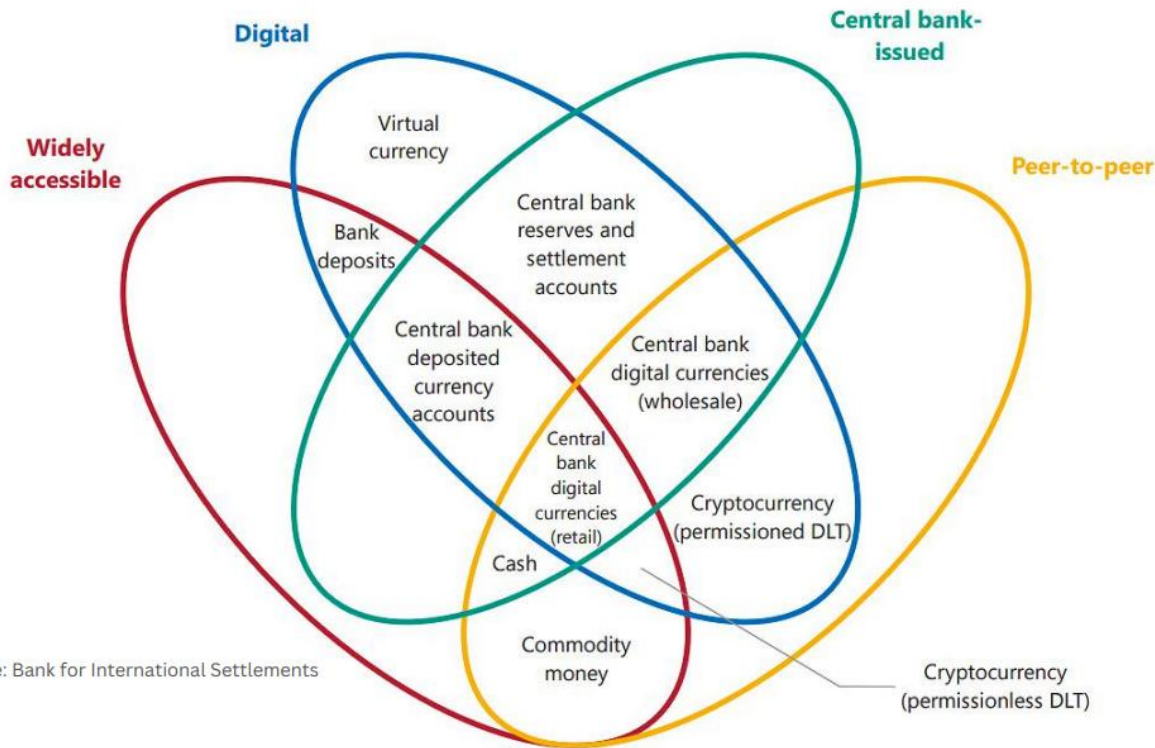
# Escort company = Payment Company

# Digital Currency's Impact to payment

# Why clearing & settlement?

## Double Spending

**Double-spending is a problem that arises when transacting digital currency that involves the same tender being spent multiple times. Multiple transactions sharing the same input broadcasted on the network can be problematic and is a flaw unique to digital currencies. The primary reason for double-spending is that digital currency can be very easily reproduced.**

# How to solve? In the old way

**Traditional Solutions**

- **Centralized Clearing Counterparty/ Trusted Third Party**
  **Ie Central Clearing Houses**

- **Trusted counterparties**
  **Ie only allow banks / PSPs to hold balance**

- **Continuous account reconciliations between ALL the parties.**
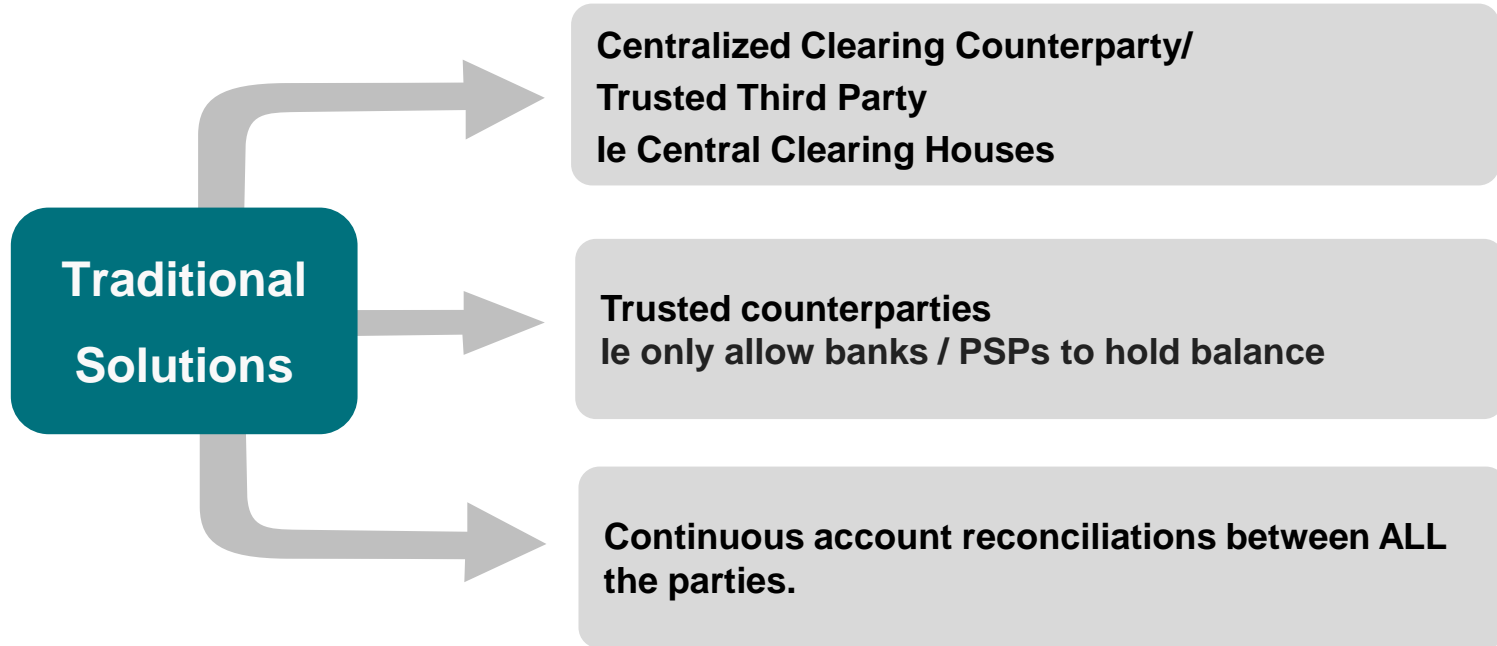
# How blockchain solve "double spending"?

## Payment == Settlement (支付即结算)

- Transaction is on the chain ie achieved
  swift GPI by default
- Distributed Ledger eg easy reconciliation
- Unified timestamp for all transactions

## New Problems

- 51% Attack
- Forking
- Finney attack – wait for 6
  confirmations
- Blockchain Impossible Triangle: Low
  TPS
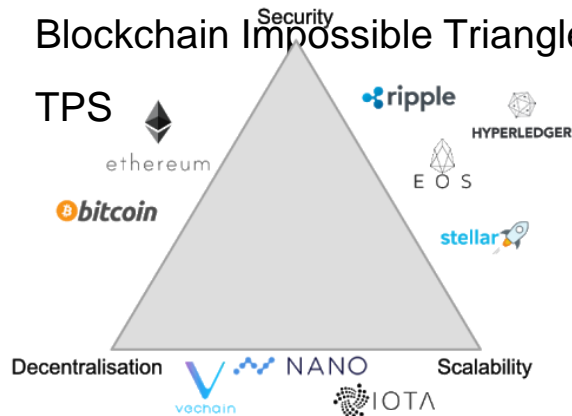
# Pain points for cross border payments



Challenges and frictions in cross-border payments
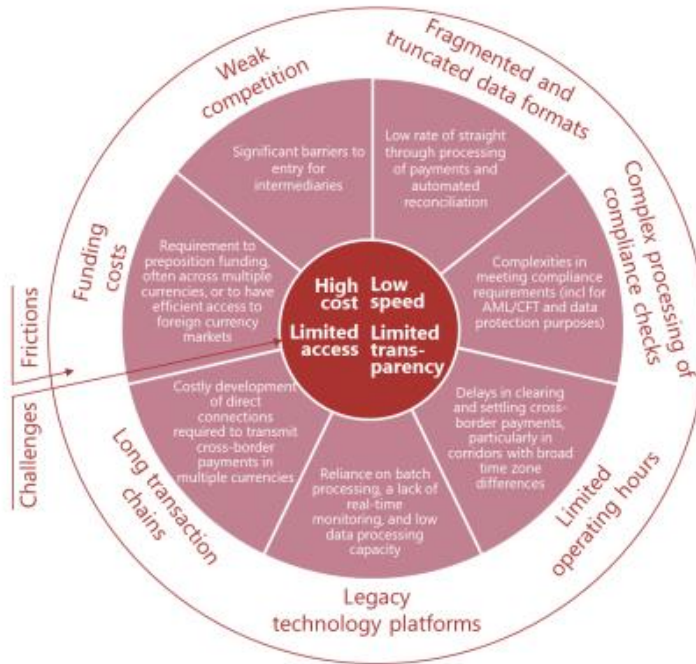
**Pain Points:**

- **Costly**
- **Slow**
- **Not enough Coverage**
- **Low transparency**

**Reasons:**

- **Non standard data**
- **Complicated compliance process**
- **Limited operation time**
- **Old infrastructure**
- **Many parties involved**
- **High funding cost**

# Solutions



Overview of the five focus areas and associated building blocks — Figure 4

1. Develop common cross-border payments vision and targets
2. Implement international guidance and principles
3. Define common features of cross-border payment service levels

Public and private sector commitment (A)

4. Align regulatory, supervisory and oversight frameworks
5. Apply AML/CFT consistently and comprehensively
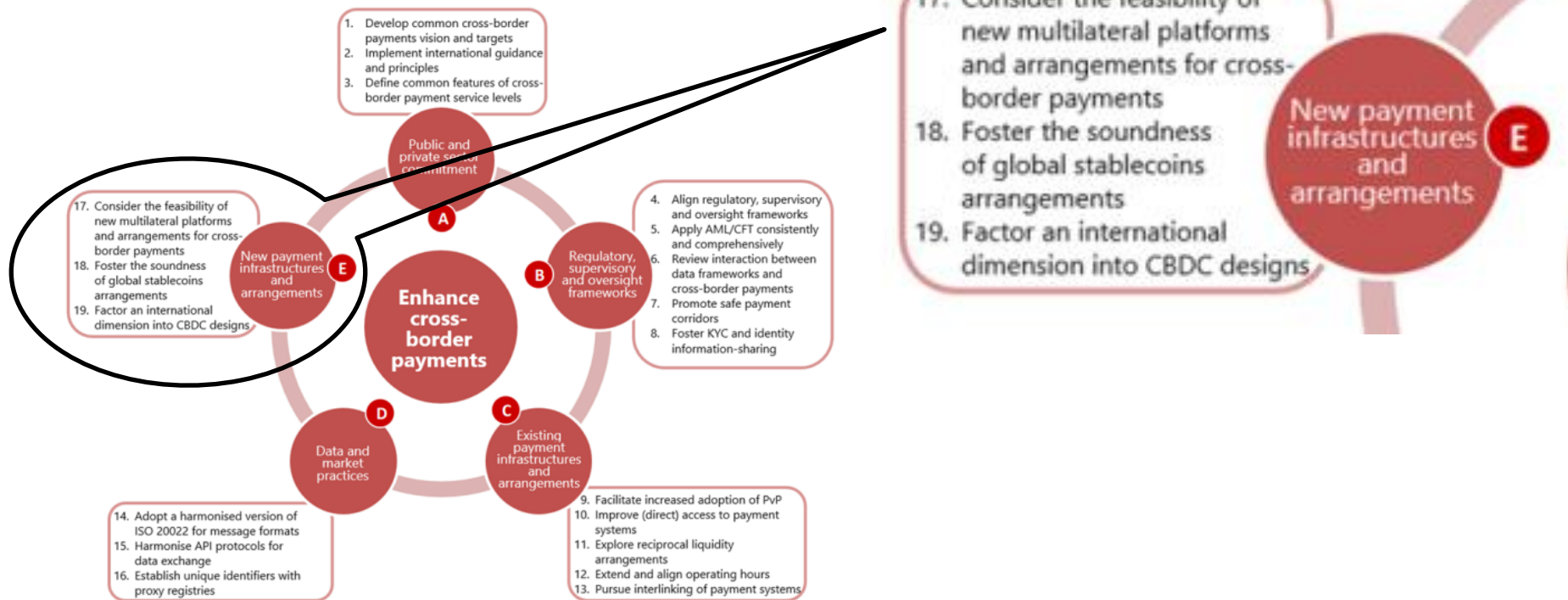6. Review interaction between data frameworks and cross-border payments
7. Promote safe payment corridors
8. Foster KYC and identity information-sharing

Regulatory, supervisory and oversight frameworks (B)

Enhance cross-border payments

New payment infrastructures and arrangements (E)

17. Consider the feasibility of new multilateral platforms and arrangements for cross-border payments
18. Foster the soundness of global stablecoins arrangements
19. Factor an international dimension into CBDC designs

Data and market practices (D)

14. Adopt a harmonised version of ISO 20022 for message formats
15. Harmonise API protocols for data exchange
16. Establish unique identifiers with proxy registries

Existing payment infrastructures and arrangements (C)

9. Facilitate increased adoption of PvP
10. Improve (direct) access to payment systems
11. Explore reciprocal liquidity arrangements
12. Extend and align operating hours
13. Pursue interlinking of payment systems

Source: BIS —— 《Enhancing Cross-Border Payments: Building Blocks of A Global Roadmap》

# What is CBDC ("Central Bank Digital Currency") ?

CBDCs are digital currencies issued by central banks. Their value is linked to the issuing country's official currency. Various types of use cases:
- Retail vs Wholesale
- Domestic vs Cross-border

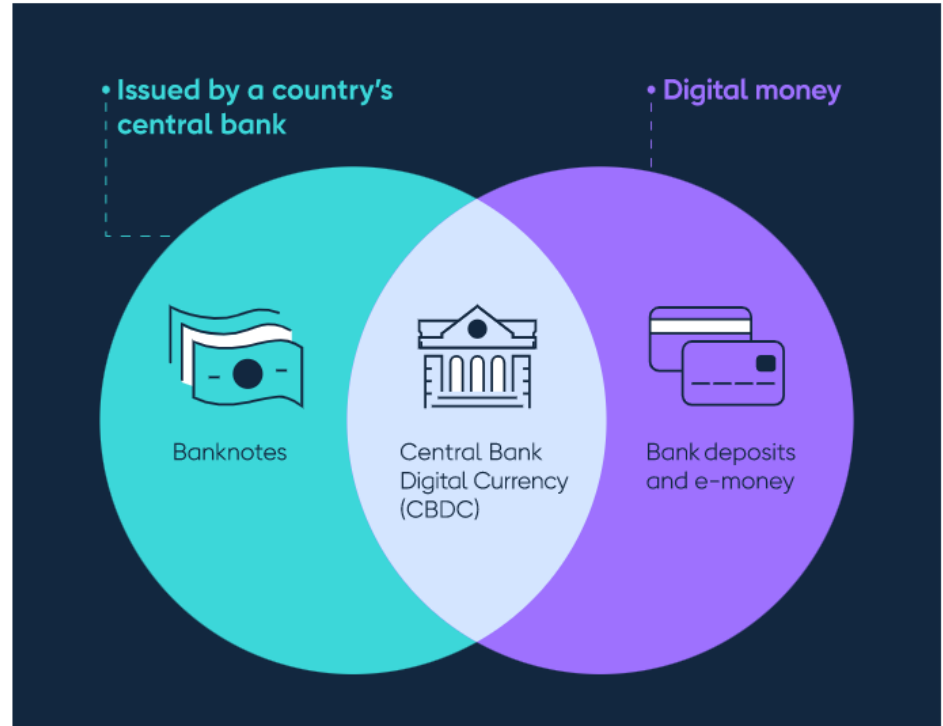A digital currency backed and governed by a central bank

Universally accepted; can be used to make payments

More secure and less volatile than other digital currencies



Central bank digital currency is a type of digital money

• Issued by a country's central bank

• Digital money

Banknotes

Central Bank Digital Currency (CBDC)

Bank deposits and e-money

# CBDC : E-CNY

**Key Features:**
- **Centralised Management中心化管理**
- **Two layers operation双层运营**
- **Technology neutral 技术中性设计**

# What is stablecoin?



Types of Stablecoin — Fiat Backed: Tether USD (USDT), USDC, PayPal; Commodity Backed: Paxos Gold (PAGX), Digix Gold (DGX); Crypto Backed: DAI, Wrapped BTC (WBTC); Algorithmic Backed: Terra, OHM Token



SOURCE: THE BLOCK
UPDATED: AUG 19, 2024
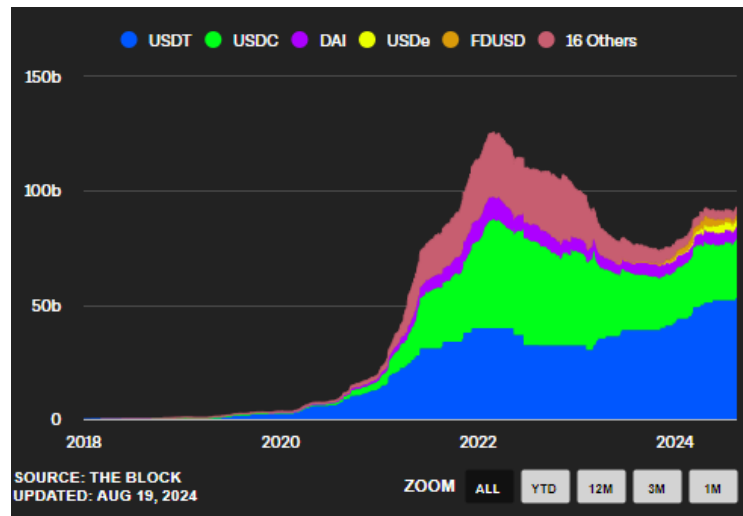
# HKD: oldest stablecoin & CBDC， just not digital

The Hong Kong government has authorized three commercial banks to issue bank notes (except Ten-dollar polymer note) in Hong Kong through the Monetary Authority. The three banks are:
- HSBC
- Standard Chartered Bank
- Bank of China
- When the note-issuing bank issues banknotes, it must surrender US dollars to the Exchange Fund at the specified exchange rate in accordance with the linked exchange rate system, that is, 1 US dollar to 7.80 Hong Kong dollars;
- When redeeming issued bank notes, the corresponding US dollars must also be withdrawn from the Exchange Fund at the same exchange rate.
- Banknotes issued by Note Bank are printed in Hong Kong by Hong Kong Note Printing Limited (Hong Kong Note Printing).
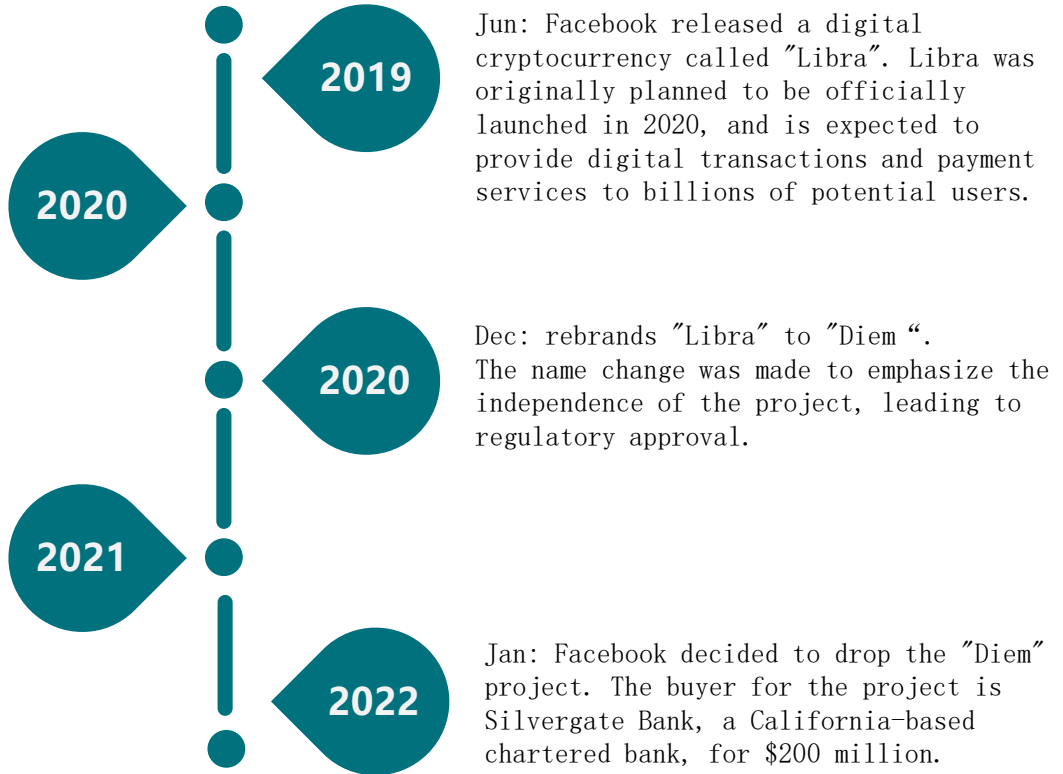
# Facebook Libra （aka Diem）

Apr: adjustments to the Libra project, which will support multiple versions of digital currencies, that is, "stable coins" backed by a single currency.
Facebook's original plan was for Libra to be backed by a mix of currencies (the U.S. dollar, euro, Japanese yen, British pound and Singapore dollar) and government bonds.

**2020**

End of 2021, Diem's founder David Marcus leaved Facebook.

**2021**

**2019**

Jun: Facebook released a digital cryptocurrency called "Libra". Libra was originally planned to be officially launched in 2020, and is expected to provide digital transactions and payment services to billions of potential users.

**2020**

Dec: rebrands "Libra" to "Diem ".
The name change was made to emphasize the independence of the project, leading to regulatory approval.

**2022**

Jan: Facebook decided to drop the "Diem" project. The buyer for the project is Silvergate Bank, a California-based chartered bank, for $200 million.
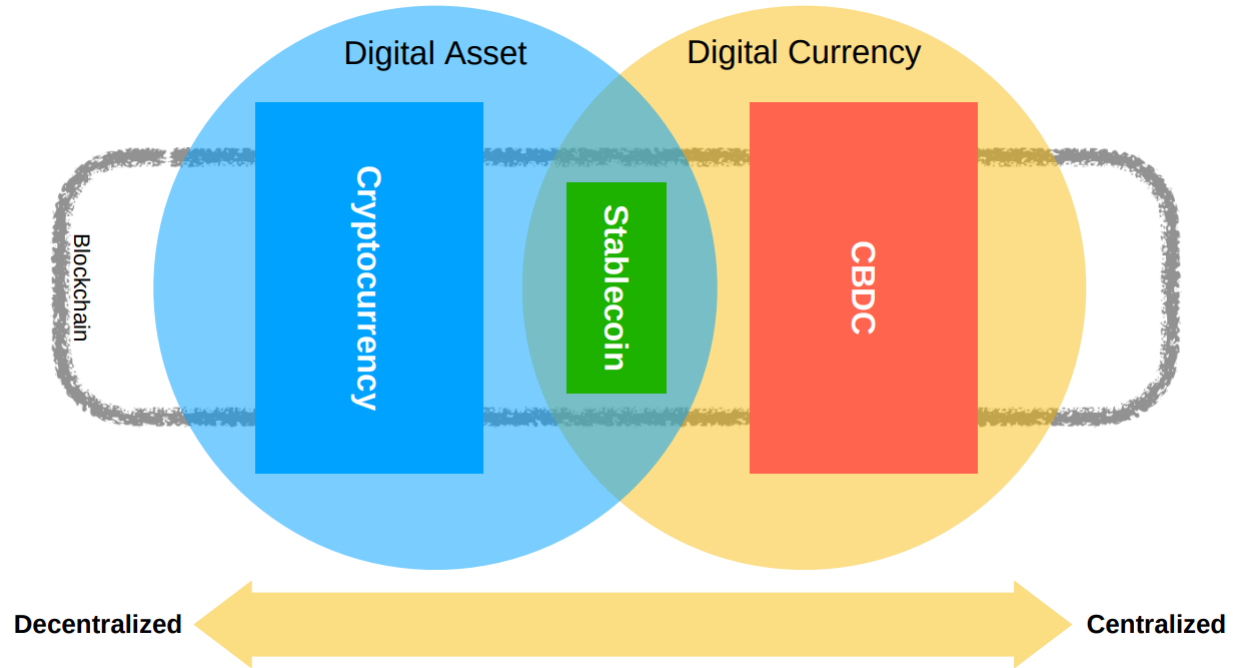
# Common Pitfalls

Digital Currency vs Crypto Currency vs Crypto Asset

Digital Currency vs Digital Payment
Digital Currency & Blockchain?
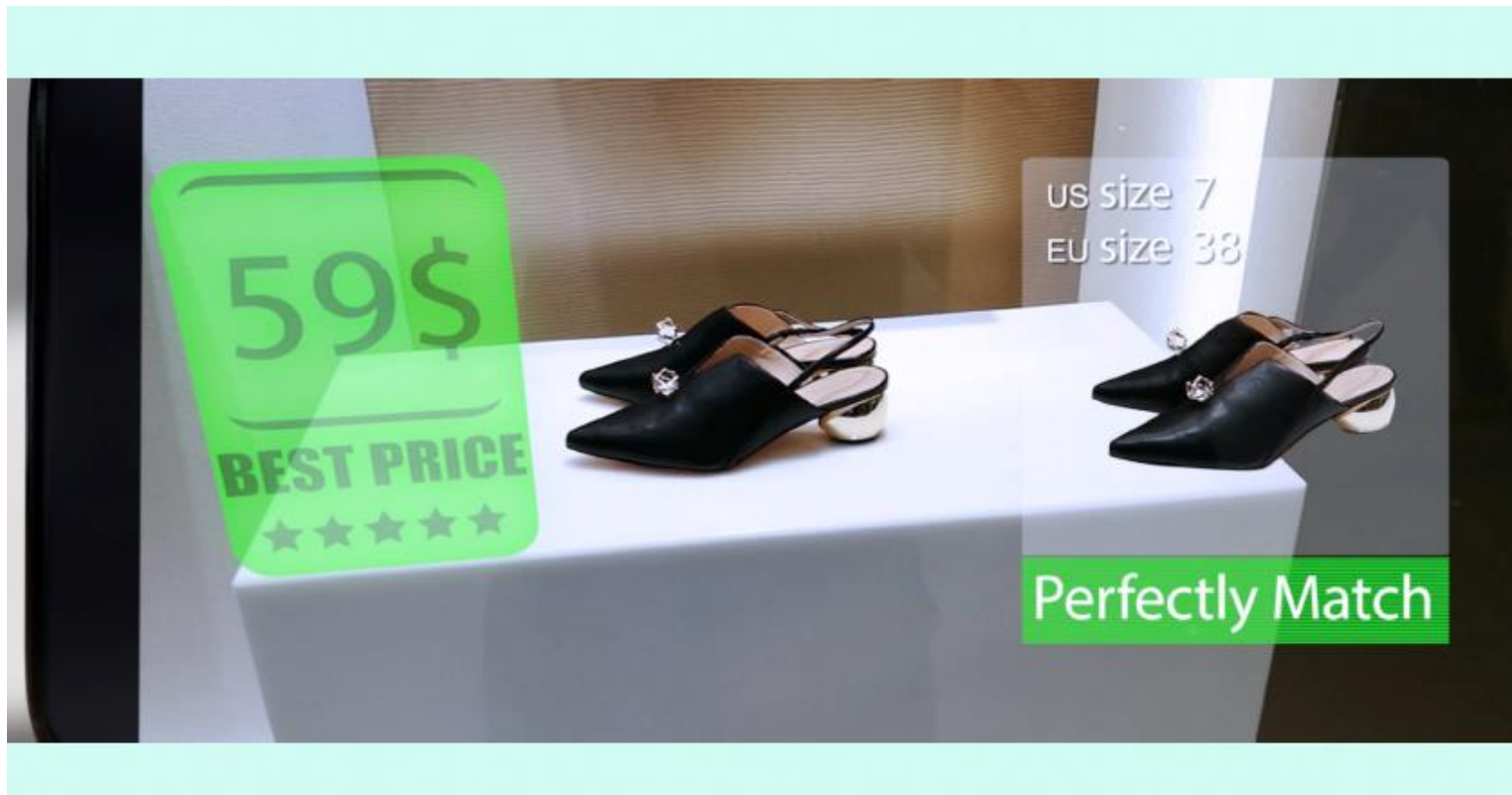
Decentralisation?

# New Species:

# Blockchain + AI

# New species: Programable Asset + AI

Programmable money is **digital money that can be programmed to act in a certain way based on predetermined criteria.**
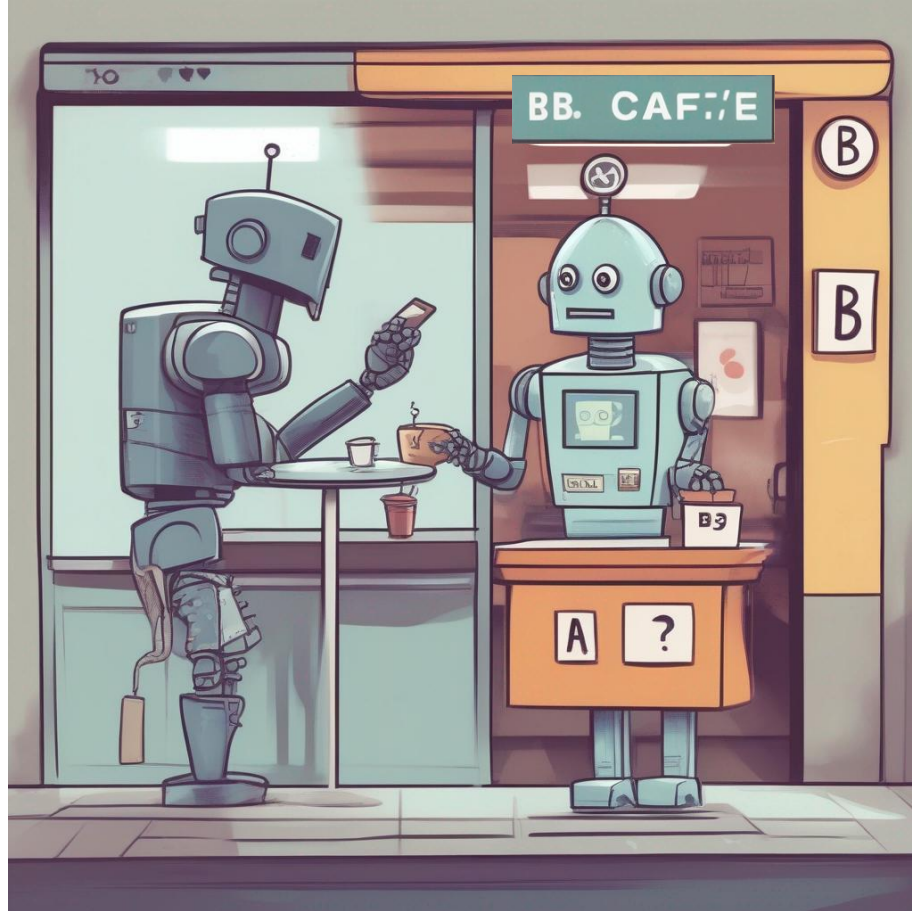




- **Transaction & Payment combined（无因 vs 有因支付）**
- **Airdrop of government subsidies**
- **Auto collection of negative interest (eg Europe & Japan)**
- **Limit the usage of charity donation**
- **Remote freeze of money**
- **-> AI program can be the owner of money**

# Shopping Experience Reimagine

# Commerce in the Future: Program Entity

Wealth is redistributing rapidly to new centres under the banner of decentralization.
在去中心化的旗帜下，
财富正在快速转移到新的中心。

# Thank you!

Q&A