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Is there social added value in digital currencies?

10th Meeting of the Fintech Working Group – 29 November 2022
'Money at a crossroad: retail CBDCs vs. privately issued crypto-assets'

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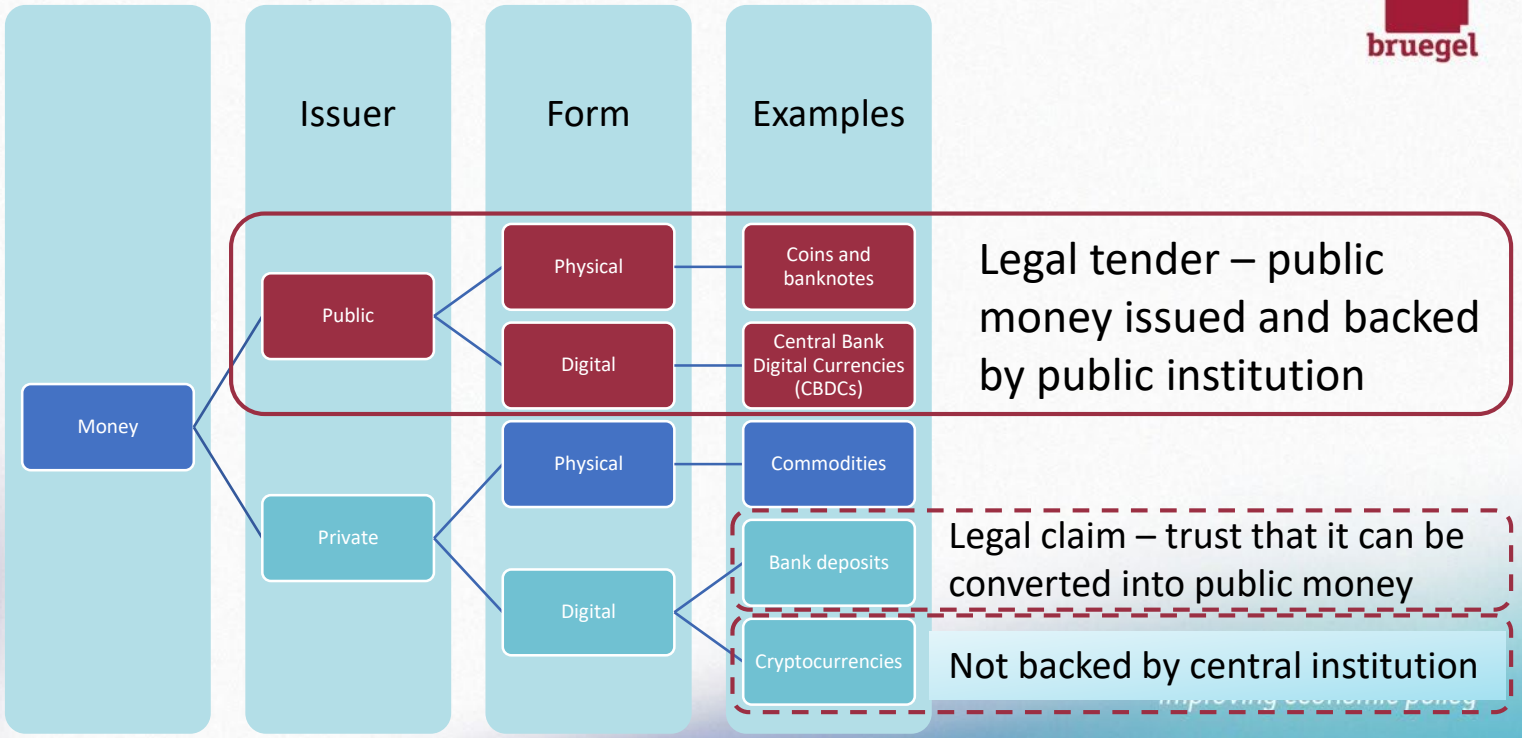
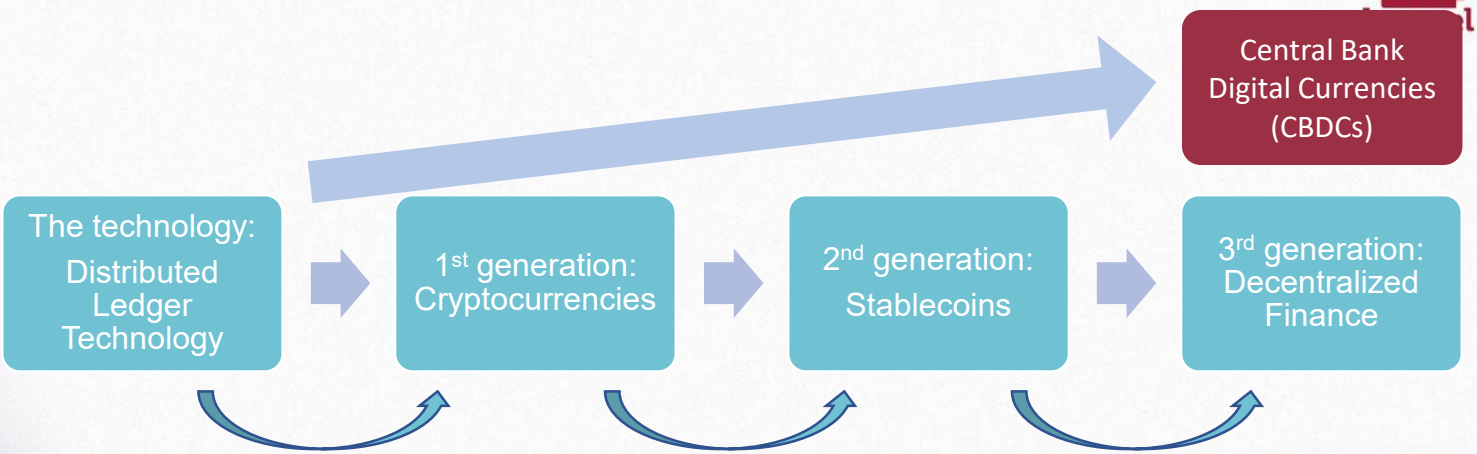
Taxonomy of money



Source: Claeys, Demertzis and Efstathiou (2018), Policy contribution Issue n˚10.

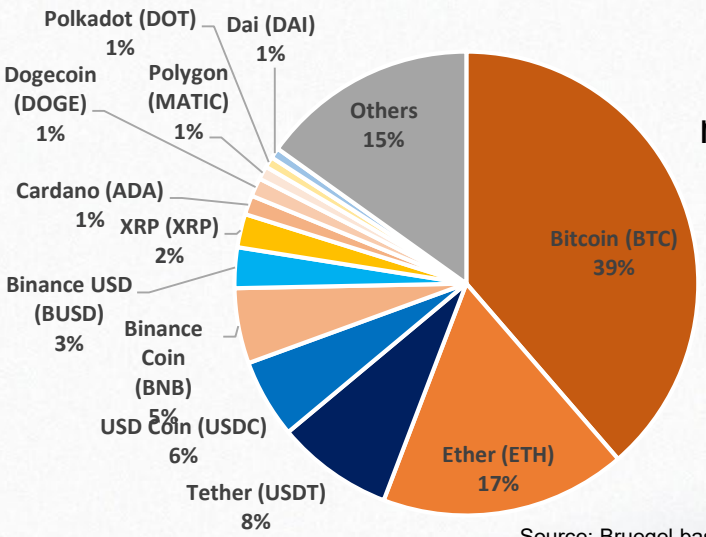
The evolution in the digital space



The evolution in the crypto space

1st generation: cryptocurrencies

2nd generation: stablecoins



Distribution of total market capitalisation as of Nov 2022

12 coins account for 85% of the cryptocurrencies market

Source: Bruegel based on CoinMarketCap.
Note: Composition as of 22 Nov 2022 based on market cap.

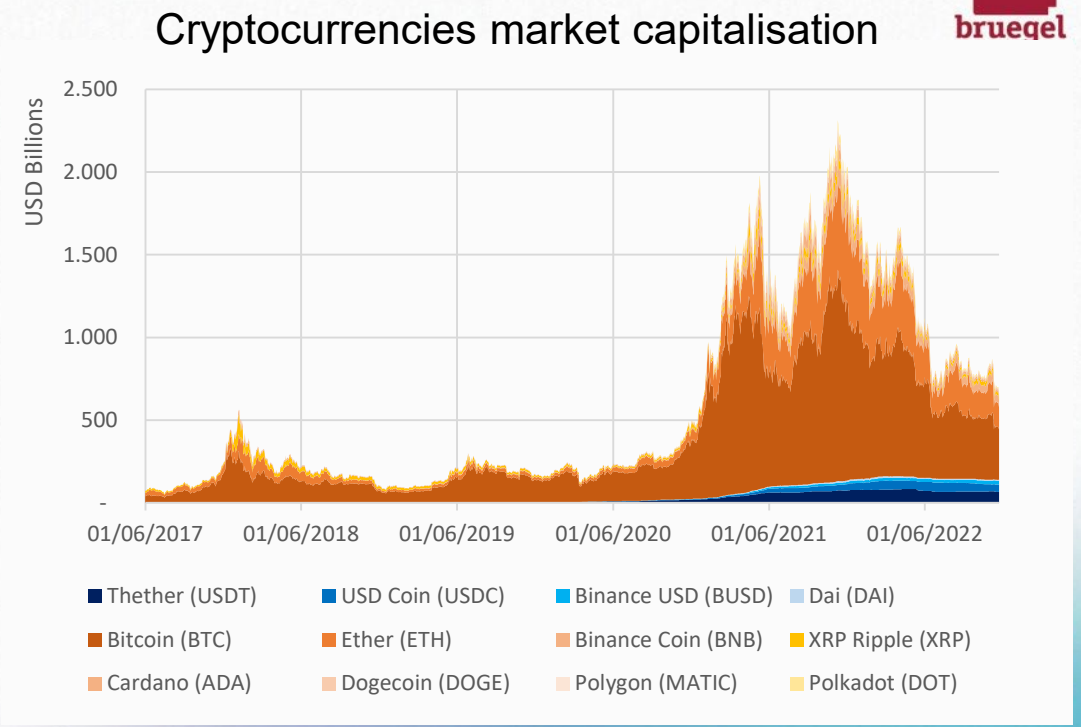
- **Cryptocurrencies** – No intrinsic value, no underlying economic fundamentals, price purely determined by demand and supply → High volatility
- **Stablecoins** (pegged to fiat) – Value linked to underlying currency, with economic fundamentals

The evolution in the crypto space

1st generation: cryptocurrencies

2nd generation: stablecoins

- Recent surge in use of stablecoins
- Stablecoins as enabler of decentralised finance: relatively stable and predictable transactions



Source: Bruegel based on CoinGecko.

The evolution in the crypto space

1st generation: cryptocurrencies

2nd generation: stablecoins

3rd generation: Decentralised Finance

- Decentralised Finance:
  - decentralized and non-custodial financial services
- Examples of financial services provided:

Category	Description
Dexes	Protocols where you can swap/trade cryptocurrency (Decentralised exchanges)
Lending	Protocols that allow users to borrow and lend assets
Bridge	Protocols that bridge tokens from one network to another
CDP	Protocols that mint its own stablecoin using collateralized lending
Derivatives	Protocols for betting with leverage

The evolution in the crypto space

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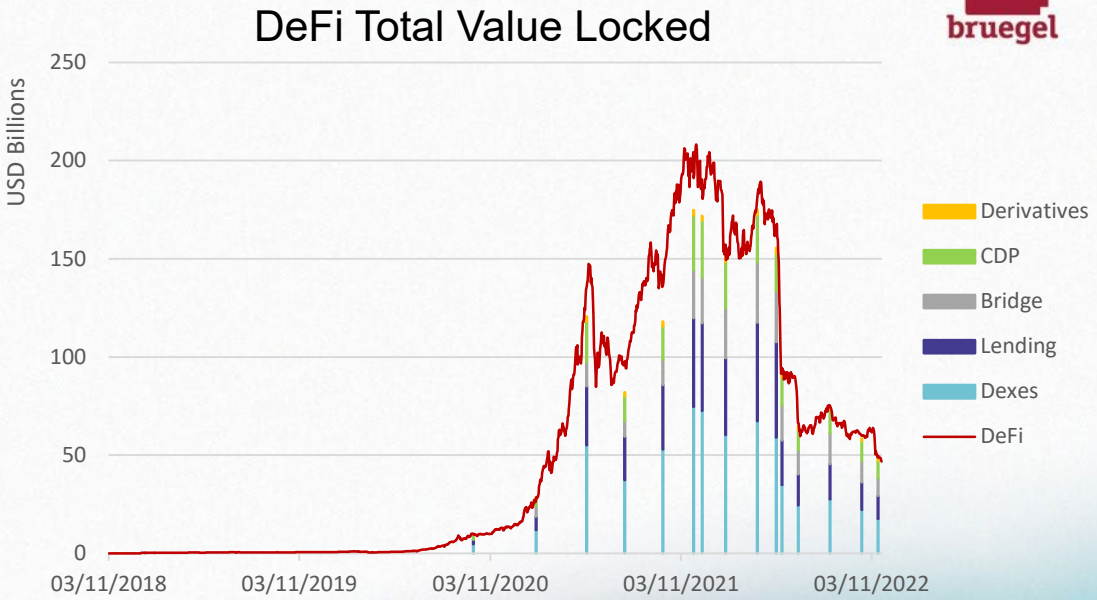

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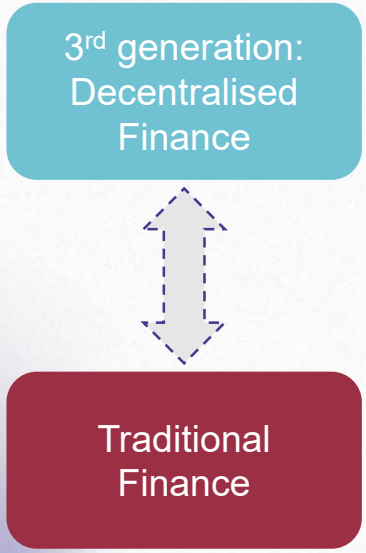
Source: Bruegel based on DeFi Llama. Note: Total Value Locked (TVL) excluding double counting and staking, but including borrowing. TVL is a measure of the total value of all assets locked into DeFi protocols.

The evolution in the crypto space



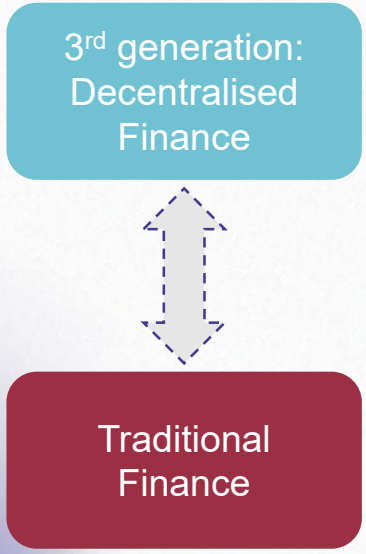
The resemblance with traditional financial services

- FTX was a decentralised crypto exchange (Dex) platform, equivalent to traditional stock exchanges
  - **Traditional exchanges**: match buyers and sellers
  - **Dexes**: typically hold clients' assets for extended periods of time, to facilitate trading for customers → Users more vulnerable in case of Dex troubles

- FTX filled for bankruptcy on 11 Nov 2022
  - Investors perceived that FTX was in trouble → run on deposits (~ USD 5bn)
  - BUT only USD 900mn worth of sellable assets against USD 9bn in liabilities

Traditional bank run trigger and mechanism

The evolution in the crypto space



The links with traditional financial services

- A lot of traditional financial institutions exposed to FTX failure
  - "Situation reminiscent of Lehman Brothers in 2008, which left billions of dollars of hedge funds' assets trapped for years. […] And, unlike the Lehman situation, where creditors were eventually paid back more than 100 per cent of assets, it is far from clear how much will be left to recover." FT article

Potential risks for financial stability, if links get deeper

- FTX bankruptcy attributed to failure of corporate controls and poor risk analysis → lack of due diligence probably induced by lack of regulation

Source FT article: https://www.ft.com/content/125630d9-a967-439f-bc23-efec0b4cdeca

… but still not a systemic issue

3rd generation: Decentralised Finance

Traditional Finance

Increase in total value linked to accentuated increase in valuation relative to the EUR in 2021

Bitcoin price to EUR (2016-2022)

		Total value (bln EUR)	Nr transactions (bln)	Average transaction value (EUR)
2021	Non-cash payments (Euro Area)	196,951	114	1,725
	Bitcoin (globally)	41,433	0.10	415,505
	Bitcoin (globally) - in bitcoins	1.0	0.10	10
2017	Non-cash payments (Euro Area)	148,175	84	1,771
	Bitcoin (globally)	3,582	0.10	34,228
	Bitcoin (globally) - in bitcoins	0.9	0.10	9

Source chart: CoinGecko. Source table: Bruegel based on ECB Payment Statistics and tradeblock.com.

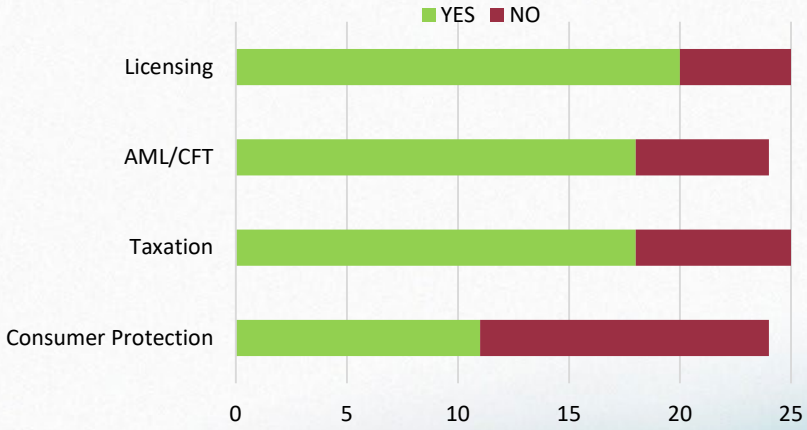
Crypto legal status and regulation

Cryptocurrency legal status – 25 countries

Legal status	nr countries	Countries
Legal	12	Australia, Brazil, Canada, France, Germany, Italy, Japan, Philippines, South Africa, UK, Ukraine, US
Partial ban	10	Argentina, India, Indonesia, Iran, Mexico, Russia, South Korea, Thailand, Turkey, Vietnam
General ban	3	China, Pakistan, Saudi Arabia

What is typically forbidden: use of crypto as means of payment, use or facilitation by financial institutions, trading.

Type of regulation – 25 countries



Reflecting main areas of concern for governments

Source: Bruegel based on Atlantic Council cryptocurrency regulation tracker. Notes: Coverage encompasses 25 countries (G20 + countries with highest crypto adoption rates)

The need for public digital money

Central Bank Digital Currencies (CBDCs)

Public money

- banknotes and coins
- only type of central bank money available to the public: Issued by the central bank and backed by the public sector

Private money

- money created by commercial banks
- cryptocurrencies
- Payments with debit/credit cards or online payment service are all transfers of private money

*"Cash is not the same thing as an electronic payment: one is **central bank money** and the other is **private money**."*

Public money acts as an anchor for the monetary system. It is the reason why people can have trust in the value of the private money issued by banks.

Source: ECB explainer 5 Oct 2022 https://www.ecb.europa.eu/ecb/educational/explainers/html/digital_euro_central_bank_money.en.html

The need for public digital money

Central Bank Digital Currencies (CBDCs)

- CBDCs as public money in electronic form, in addition to cash

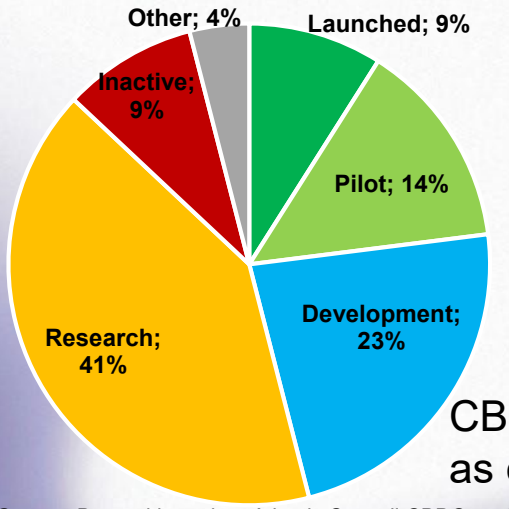
A way to catch up with how people use money and pay today

Benefits of central bank money: guaranteed and backed by the Central Bank

Increase resilience (and preparedness) of the monetary system against risks for financial stability originating in the private system

Public digital money – catching up

Central Bank Digital Currencies (CBDCs)



CBDC progress as of May 2022

Examples:

- **Launched: Nigeria - eNaira (Oct 2021) –** motivation: increase financial inclusion from 64% to 95%; could add 29 billion dollars to the GDP over the next 10 years.
- **Pilot: China - e-CNY –** advanced pilot stage. Motivation: improving the efficiency of the central bank payments systems, providing a back-up to the commercial retail payments system, and greater financial inclusion.
- **Development: Euro Area - digital euro –** ECB to start pilot phase in 2023. Motivation: retail payments as primary use-case, not store of value.
- **Research: United States –** Since President Biden's Executive Order on 'Ensuring Responsible Development of Digital Assets', 9 reports have been released. The reports encourage further CBDC research, experimentation and evaluation.

Geopolitical risks

Source: Bruegel based on Atlantic Council CBDC tracker.

Oportunities and risks – Is there added value for society?

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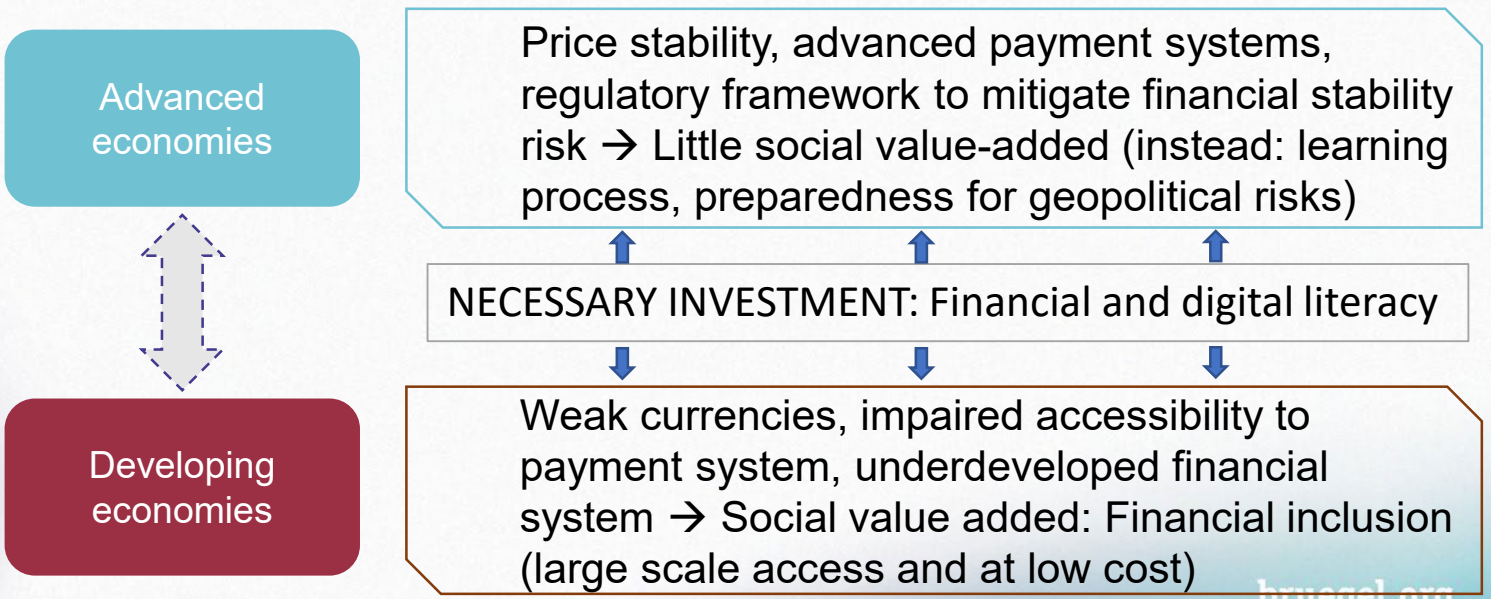
Privately issued crypto-assets

- No underlying value due to lack of fundamentals – purely supply and demand driven
- Not legal tender: Not backed or managed by any central institution. No guarantee that you will be able to exchange crypto-assets for money when you need to.
- Real identity kept anonymous, therefore real digital cash

Central Bank Digital Currencies (CBDCs)

- Underlying economic fundamentals linked to economy issuing the currency
- Legal tender: Issued by a public institution – the central bank – and therefore backed by the public sector.
- Private, but not anonymous, therefore not a full substitute to cash

Oportunities and risks – Is there added value for society?



Thank you!

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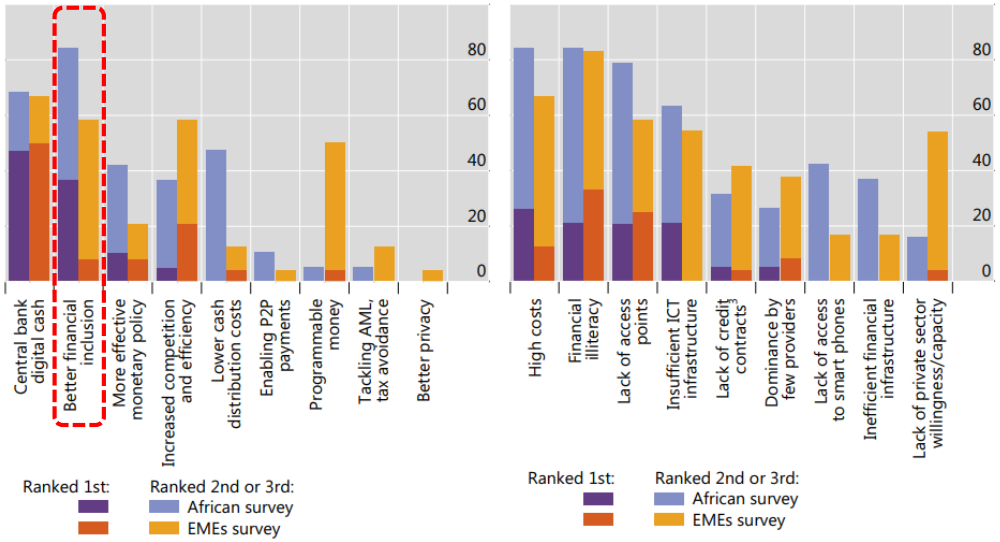
Motivation for CBDCs in developing countries

Fostering financial inclusion is one of the main motivations for CBDCs in Africa[1]

Percentage of participating central banks[2] Graph 1



[1] Each bar indicates the percentage of central banks that choose a given motivation as one of their top three benefits of CBDC/barrier to financial inclusion. [2] Unless otherwise stated, the percentage is computed over all the central banks that participated in the surveys (19 and 24 central banks in the African and EME survey, respectively), including those that did not answer the specific question. [3] Lack of credit contracts and procedures suitable for individuals and/or firms with erratic and/or undocumented cash flows.

Sources: BIS African and EMEs 2022 surveys on central bank digital currencies.

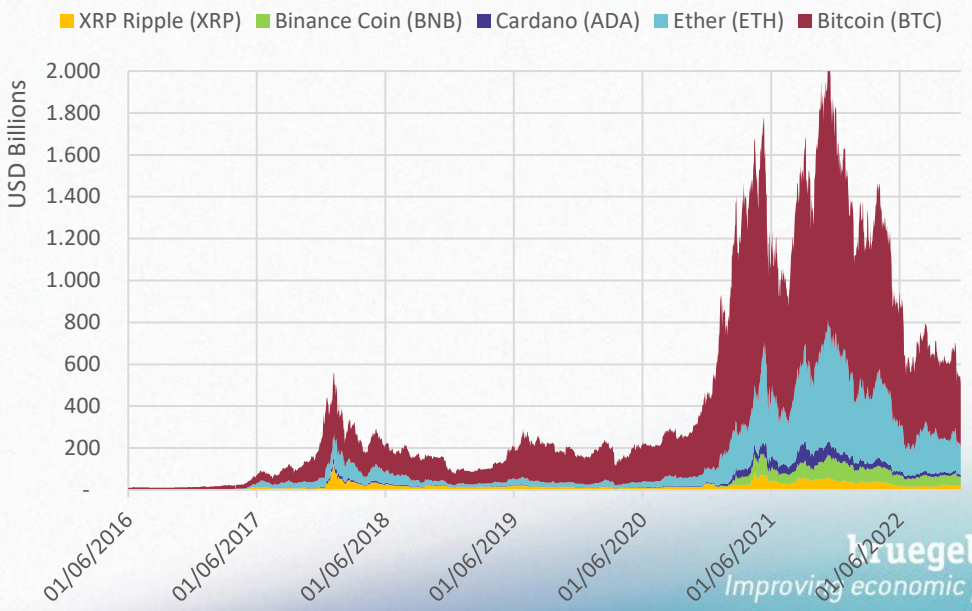
Source: https://www.bis.org/publ/bppdf/bispap128.pdf

The evolution in the crypto space

1st generation: cryptocurrencies

Bitcoin and Ether account for approx. 55% of total cryptocurrencies market (including stablecoins)

Market capitalisation top 5 cryptocurrencies

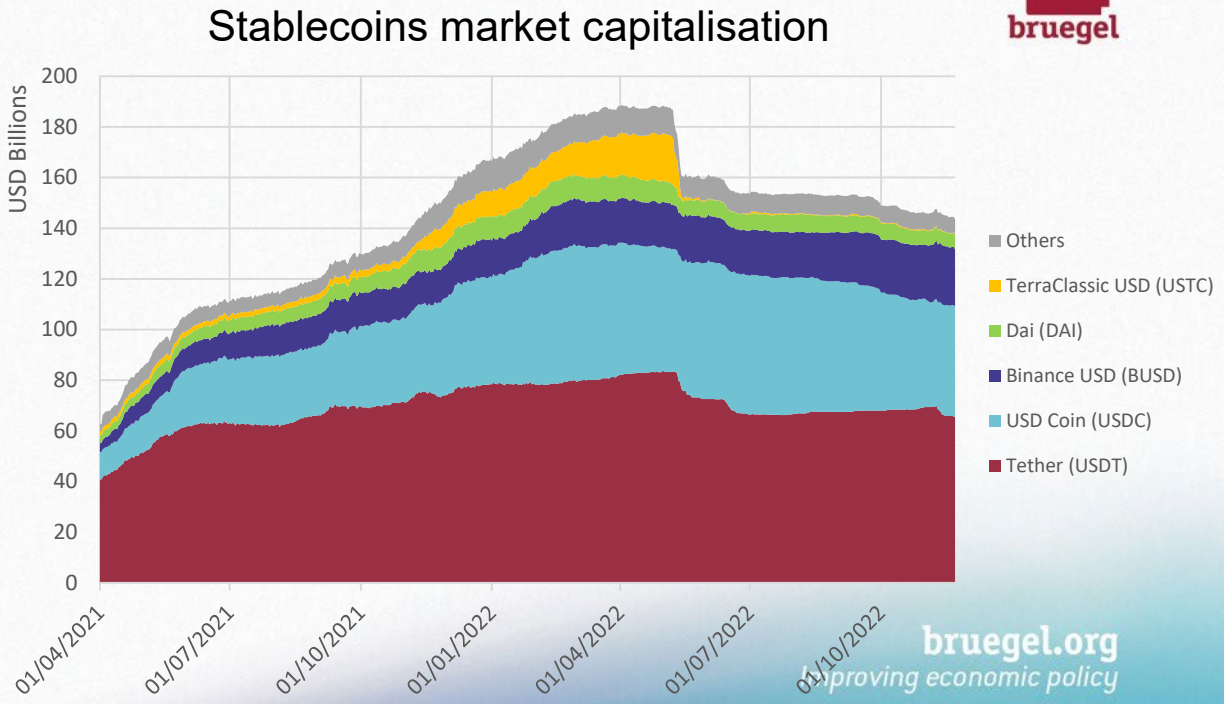


Source: Bruegel based on CoinGecko.

The evolution in the crypto space

2nd generation: stablecoins

- Tether and USD Coin approx. 76% of total stablecoins.
- Around 94% of stablecoins are USD fiat-backed.



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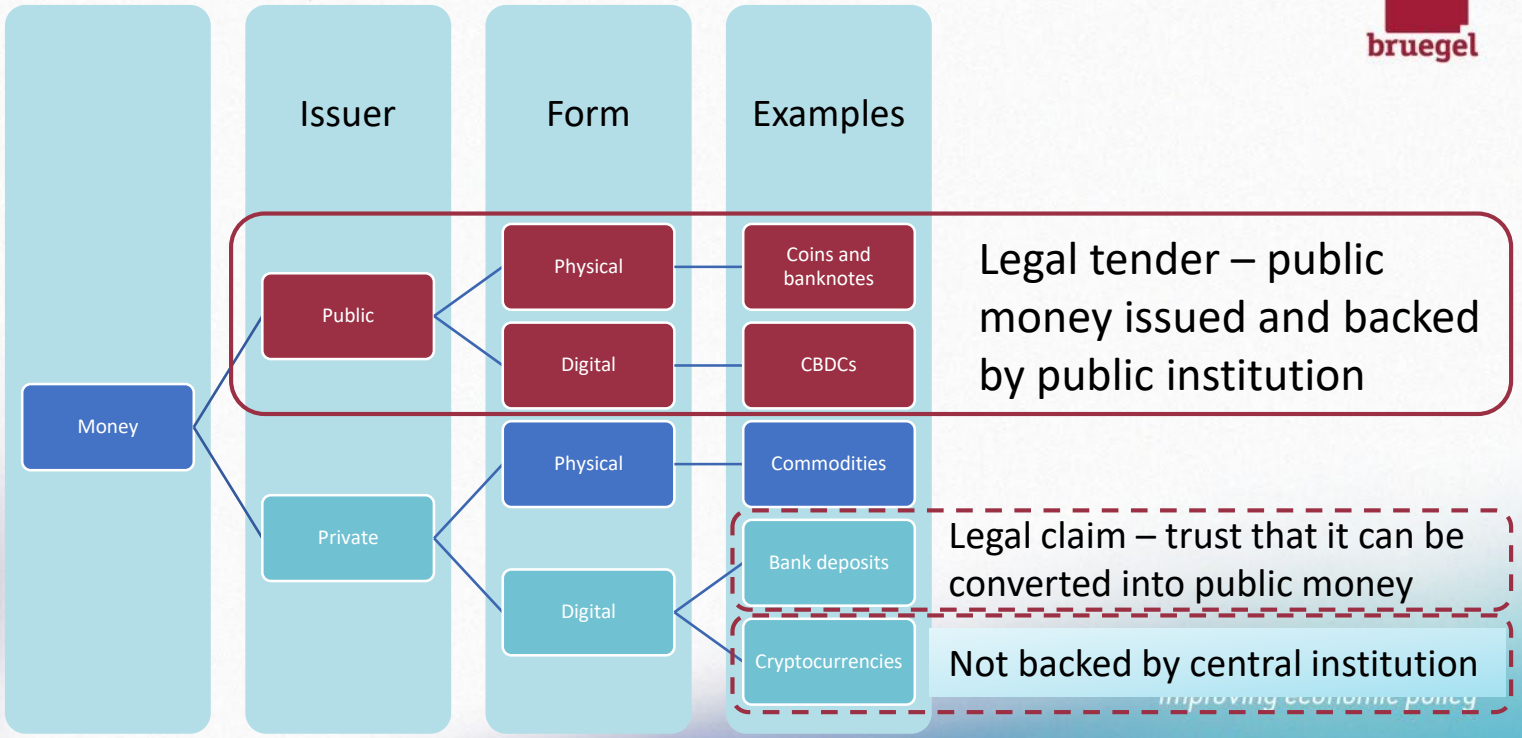
Taxonomy of money

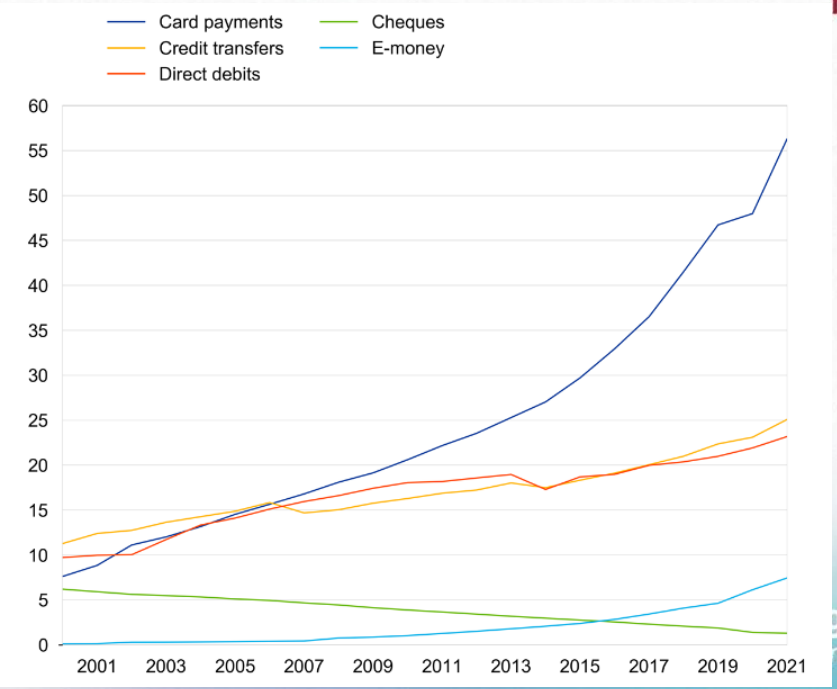


Source: based on Claeys, Demertzis and Efstathiou (2018), Policy contribution Issue n˚10.

The need for public digital money

Use of the main payment services in the euro area
(number of yearly transactions - EUR billions)

Upward trend in the use of electronic means of payment



Source: ECB payment statistics 2021, released July 2022. Note: number of transactions per year in billions.