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How technology, finance and geopolitics
redefine the future of money

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Dr. Martijn van der Linden

Professor of Practice in New Finance at THUAS

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Deborah Mevissen

Dean of the Faculty of Business, Finance & Marketing at THUAS

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What is the “true” price of bitcoin?

e

Rafael Marcus *Student moderator*

Jeroen Blokland *Multi-asset investor and the founder of the Blokland Smart Multi-Asset Fund*

Dr. Mathis Mourey *Researcher & Lecturer in Data Science and Finance at THUAS*

Thomas Bollen *Financial economist and investigative journalist Follow The Money*

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“bitcoin has no intrinsic value”



**Bitcoin
Mining Costs**

USD 35K-70K



**Metcalfe's Law
(Network Growth
from Users)**

USD 70K-200K



**Power Law
(Network Growth
over Time)**

USD 130K-150K

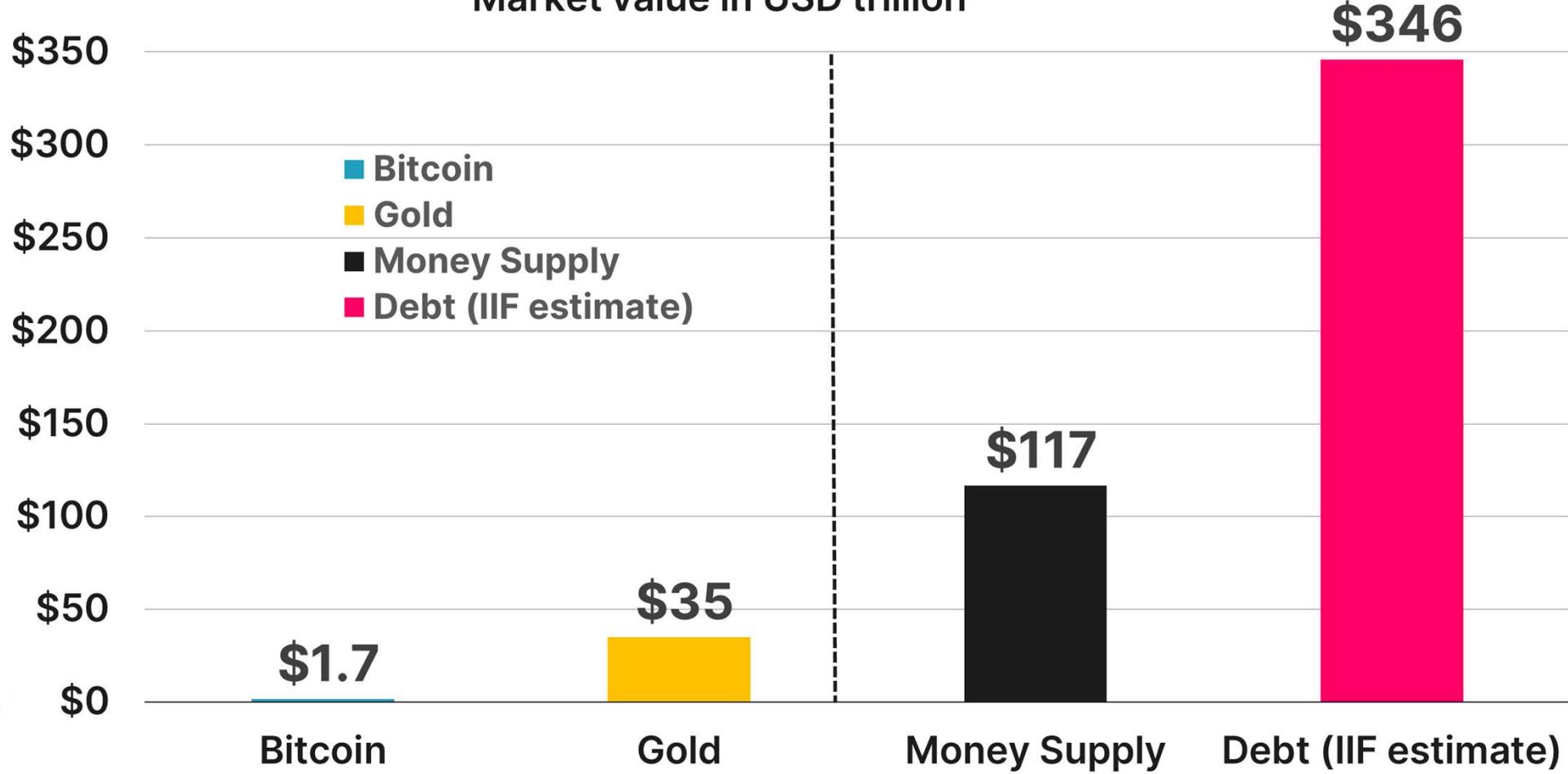
USD 850K?



BITCOIN, GOLD, MONEY & DEBT



Market value in USD trillion



Source: Blokland Smart Multi-Asset Fund

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The True Price of Bitcoin

Separating Fundamental Value from Speculation

Mathis Mourey
Senior Researcher & Lecturer – THUAS
Associate Researcher – UGA

"The fundamental price of Bitcoin is zero."

— Cheah & Fry (2015), Economics Letters

Unit of Account

142%

Annualized volatility vs 7-12% for fiat

Medium of Exchange

~10 min

Block confirmation time

Store of Value

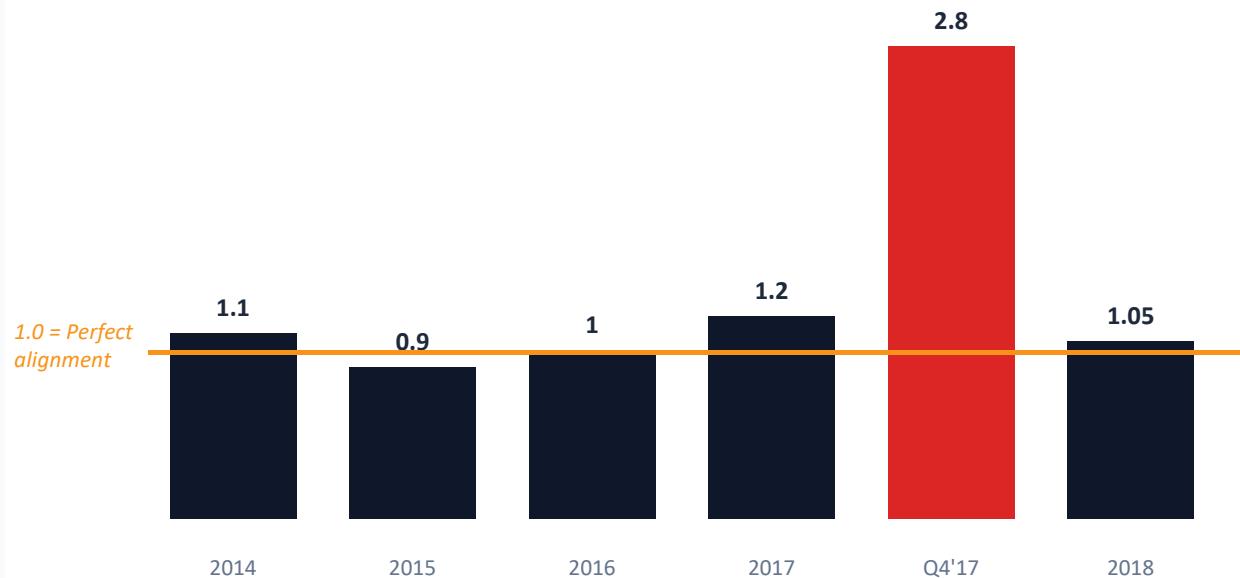
≈0

Correlation with gold & currencies

Source: Yermack (2015), *Handbook of Digital Currency*. DOI: 10.1016/B978-0-12-802117-0.00002-3

The Production Cost Floor

Price / Model Ratio Over Time



Source: Hayes (2019), *Applied Economics Letters*. DOI: 10.1080/13504851.2018.1488040

81%

of Bitcoin's price explained by
marginal mining costs

*After the 2017 bubble burst, prices converged
to the cost floor*

Technical Fundamental Value

What gives Bitcoin intrinsic utility



Decentralization

- No single point of failure
- Censorship resistance
- 15,000+ nodes worldwide



Scarcity

- 21M hard cap (coded)
- Halving every 4 years
- 94% already mined



Security

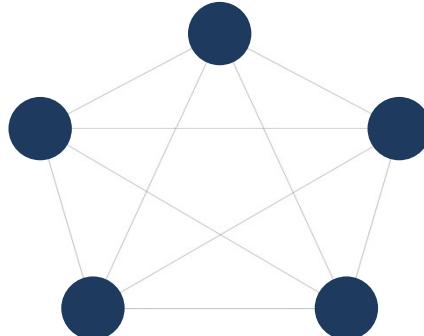
- \$6B+ attack cost/week
- 15+ years zero downtime
- Immutable ledger

Sources: Nakamoto (2008) | Harvey (2025) | Tschorsch & Scheuermann (2016) DOI: 10.1109/COMST.2016.2535718

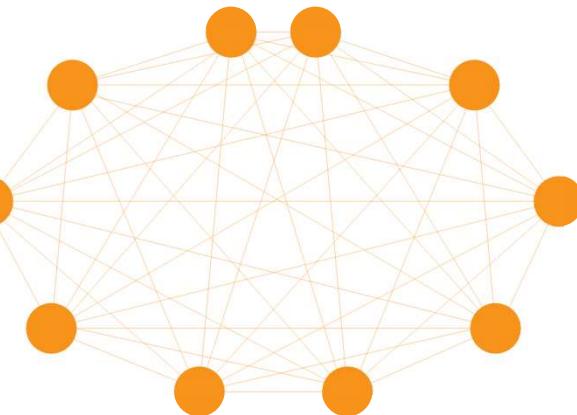
Network Effects: Metcalfe's Law

Network Value \propto Active Users²

5 Users = 10 Connections



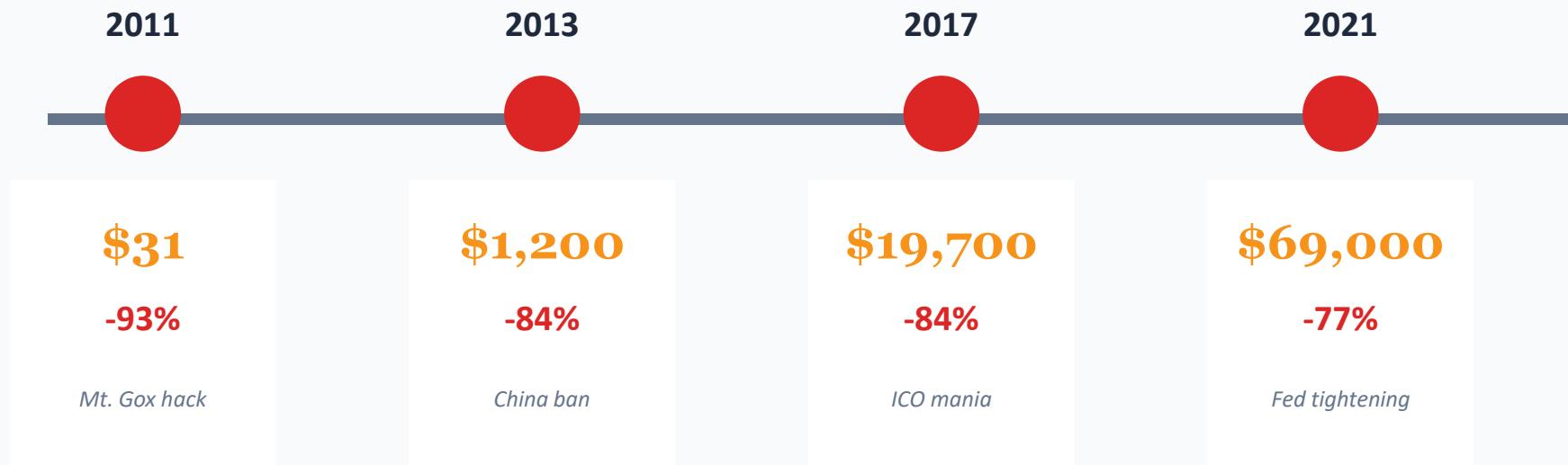
10 Users = 45 Connections



2x users
4.5x value

Detecting the Bubbles

GSADF Test: Identified Bubble Periods with Peak Prices



88% correlation between Google Trends and price
— Kristoufek (2013)

6 explosive bubbles detected (2011-2018)
— Li et al. (2019)

Sources: Corbet et al. (2018) DOI: 10.1016/j.frl.2017.12.006 | Kristoufek (2013) DOI: 10.1038/srep03415 | Li et al. (2019) DOI: 10.1007/s11135-018-0728-3

Social Media Attention & BTC Bubbles

The Attention-Price Loop



Key Research Findings

1. 88% Google Trends-price correlation
2. Twitter sentiment predicts returns
3. Bi-directional causality detected
4. Media attention triggers price breaks

"Bitcoin prices are closely connected to media attention... jumps in this indicator lead to structural changes in price behavior."

Herdng & Momentum: The Speculative Engine

What is Herding Behavior?

Investors mimic the actions of others rather than relying on their own analysis. In crypto:

- Momentum-following ("price went up, so I buy")
- Social media amplification (FOMO)
- Small coins follow Bitcoin's lead

Empirical Evidence

Ballis & Drakos (2020):
Strong herding in top 5 cryptos

King & Koutmos (2021):
Herding triggers momentum

Bouri et al. (2019):
Herding varies with uncertainty

Vidal-Tomás et al. (2018):
Small coins herd with large

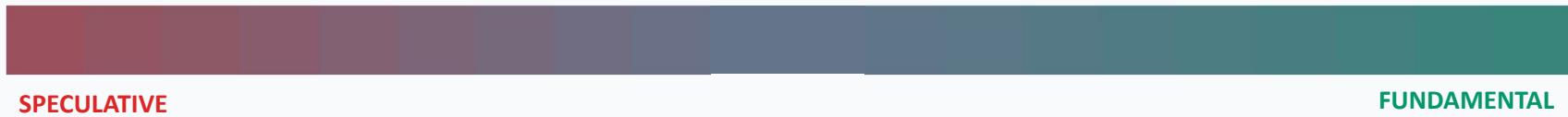
Consequences of Herding

Excess Volatility: Price swings beyond fundamentals • **Market Inefficiency:** Mispricing persists • **Bubble Formation:** Self-reinforcing price spirals

Sources: Kyriazis (2020) DOI: 10.1016/j.heliyon.2020.e04752 | King & Koutmos (2021) DOI: 10.1007/s10479-020-03874-4

The Dual Nature of Bitcoin

Bitcoin's price is most likely a combination of fundamental and speculative components, and this mix changes over time.

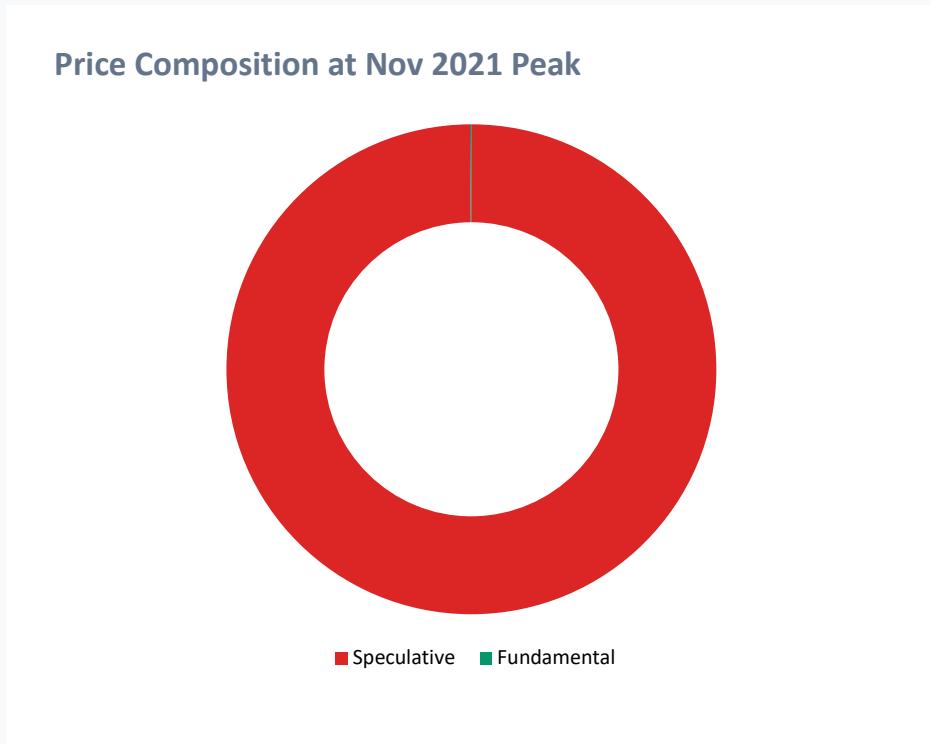


How can we know when price is purely speculative vs. purely fundamental?

Can bubble detection methods be used in real-time for investment decisions?

What indicators signal a transition between regimes?

Decomposing the Price



Sources: Hallwood (2024), PA Economic Review | Kukacka & Kristoufek (2023), Financial Innovation. DOI: 10.1186/s40854-023-00465-7

Lots of unanswered questions

Regulation

- Should we regulate Bitcoin? And, if yes, how so?
- Can bubble dynamics be used to trigger regulatory interventions?

Monetary Policy

- Does Bitcoin challenge central bank monetary sovereignty?
- How do CBDCs compete with or complement Bitcoin?

Financial Stability

- At what scale does Bitcoin become systemically important?
- How should pension funds and ETFs manage crypto exposure?

Economic Theory

- Is scarcity sufficient to create value without cash flows?
- What will happen when the mining costs will be higher than the production cost?

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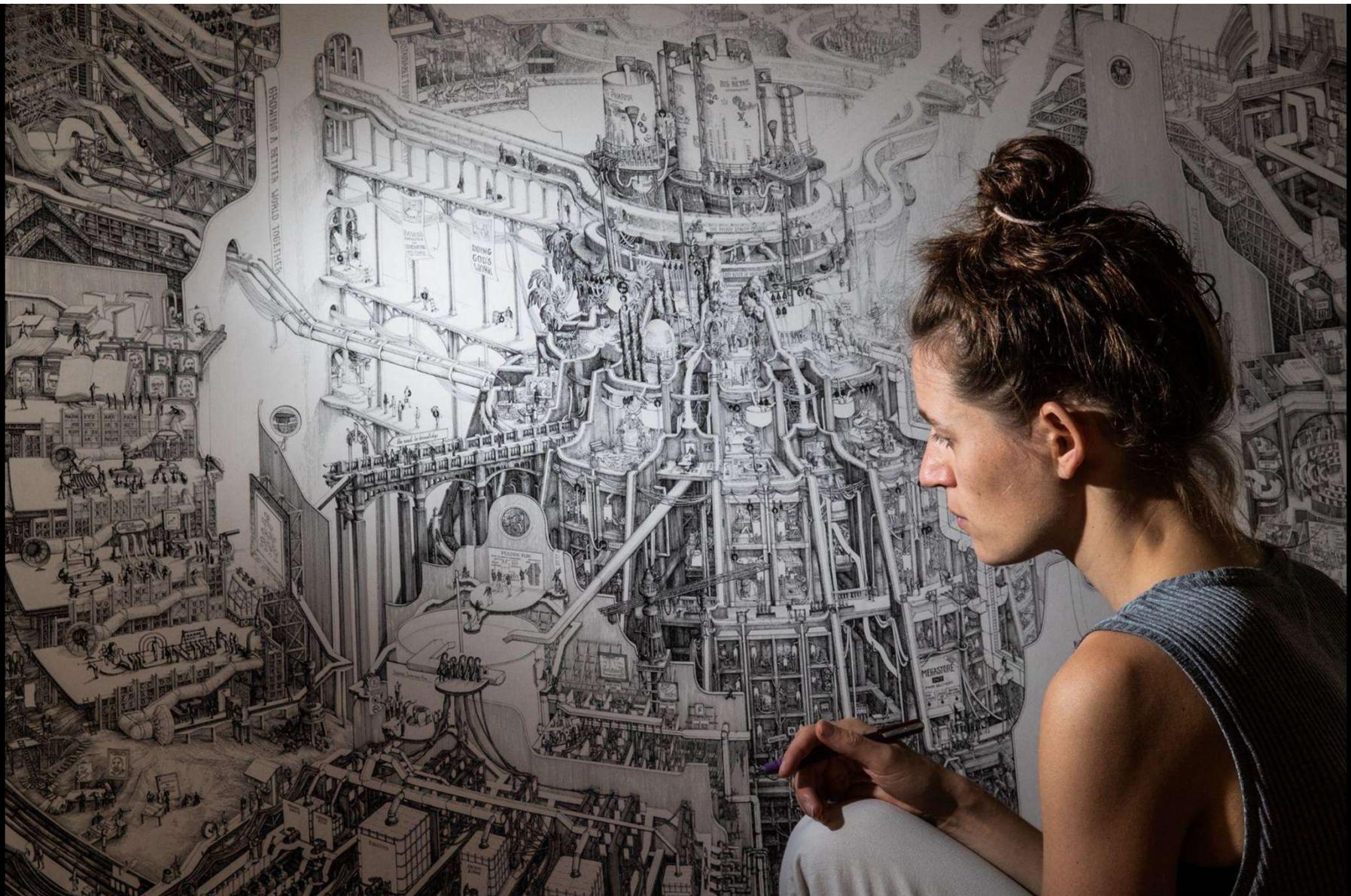
Financial economist and investigative journalist Follow The Money

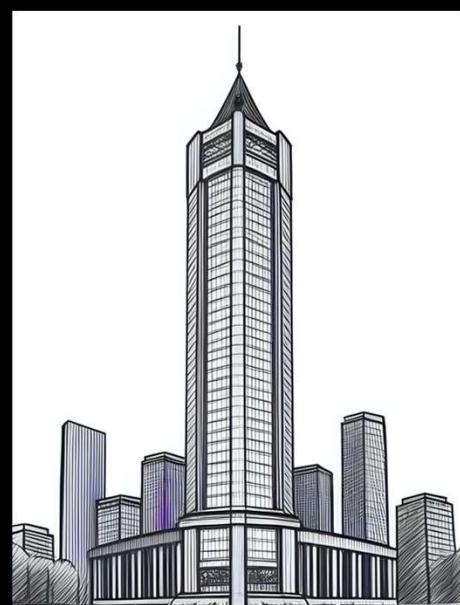
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de centrale bank

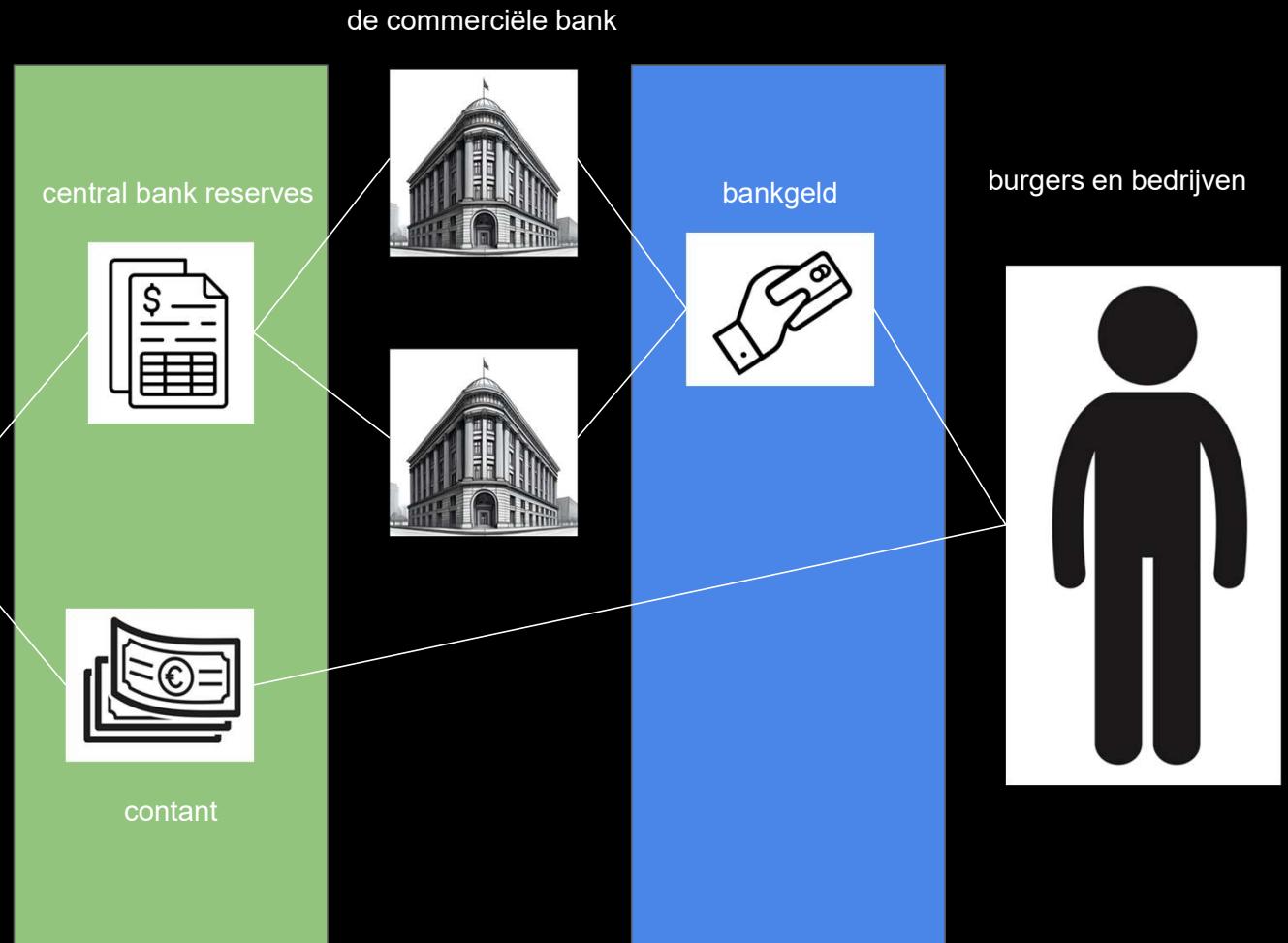
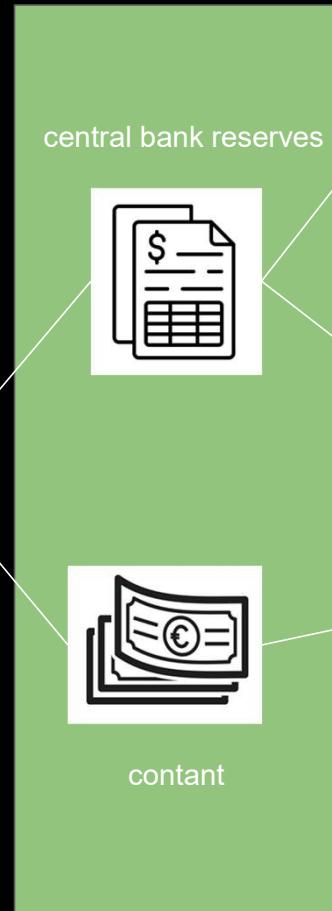
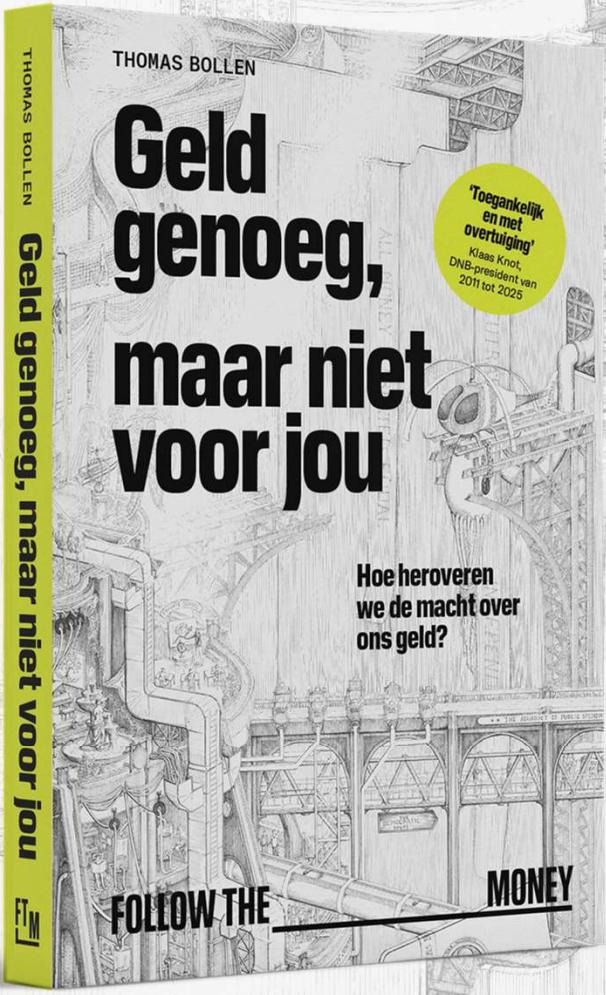


Figure 1: Cash in the Netherlands, 1900-2019 as a percentage of non-cash and cash money.



Source: Statistics Netherlands and DNB.³



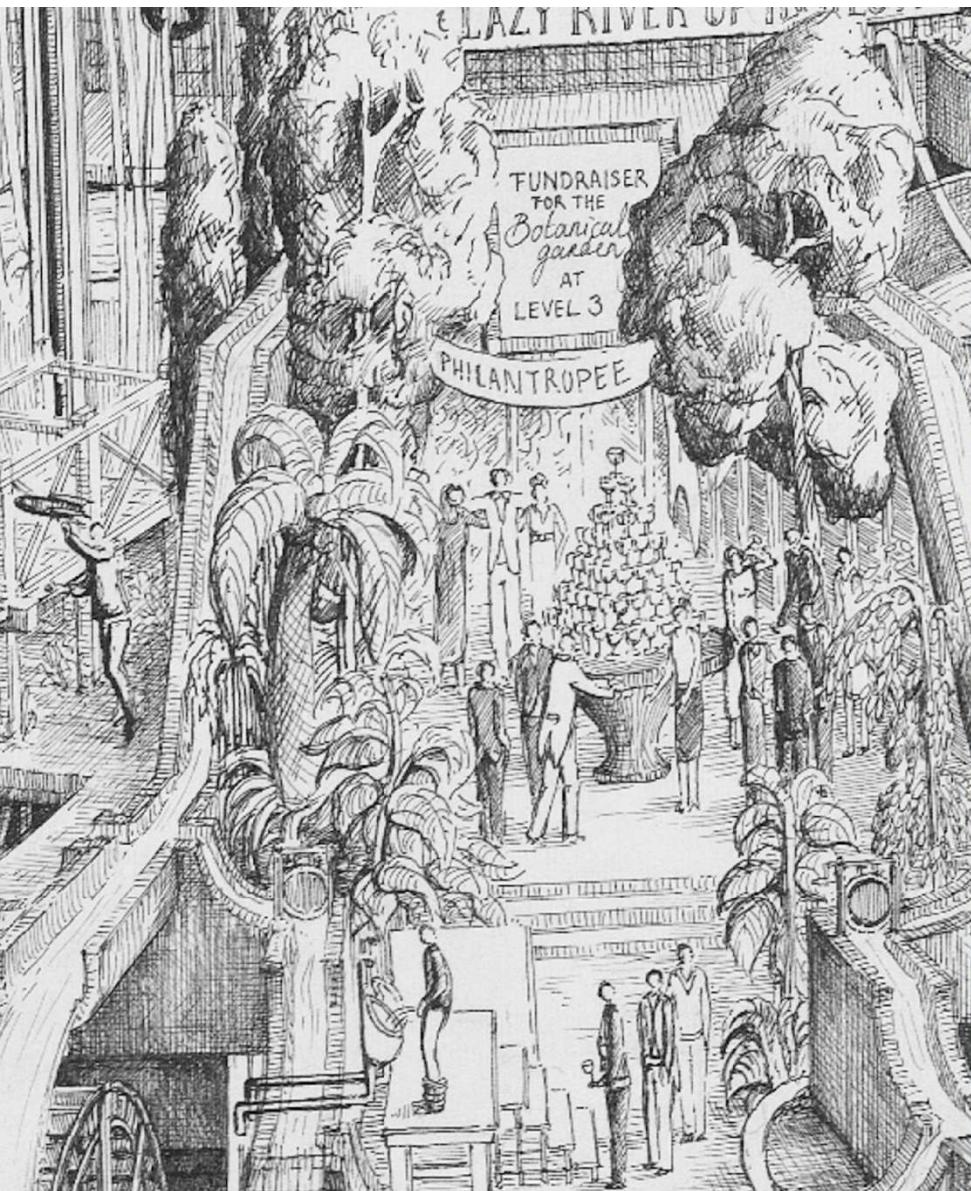
OnsGeld.

GELDSCHEPPING IN ALGEMEEN BELANG



STICHTING
FULLRESERVE

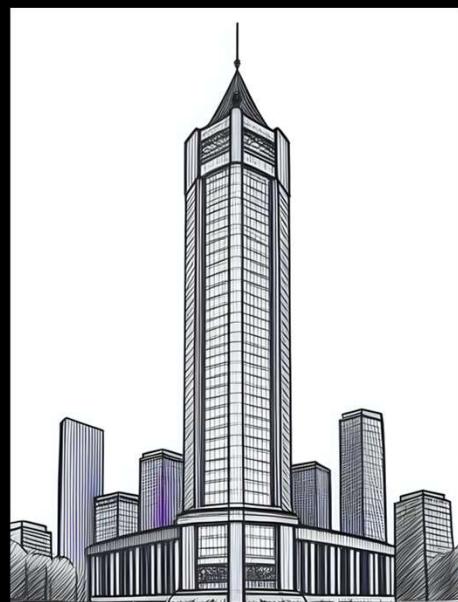








de centrale bank



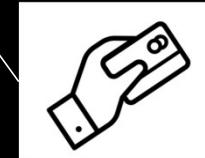
Rente op centrale
bank reserves
4%



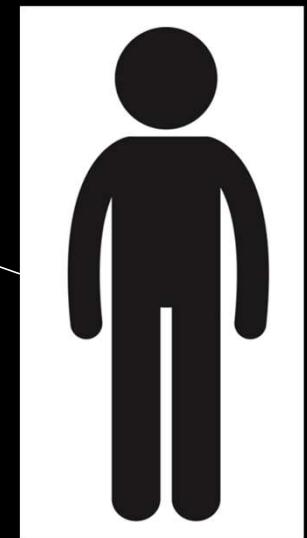
de commerciële bank



Rente op
banktegoeden
1,5%



burgers en bedrijven



DNBULLETIN

DNB boekt negatief resultaat van 3,5 miljard euro in 2023

NOS Nieuws • Donderdag 8 februari, 19:05 • Aangepast vrijdag 9 februari, 10:07

Grootste banken boeken hun hoogste winsten ooit

European banks [+ Add to myFT](#)

European banks promise €120bn of shareholder returns on interest rate gains

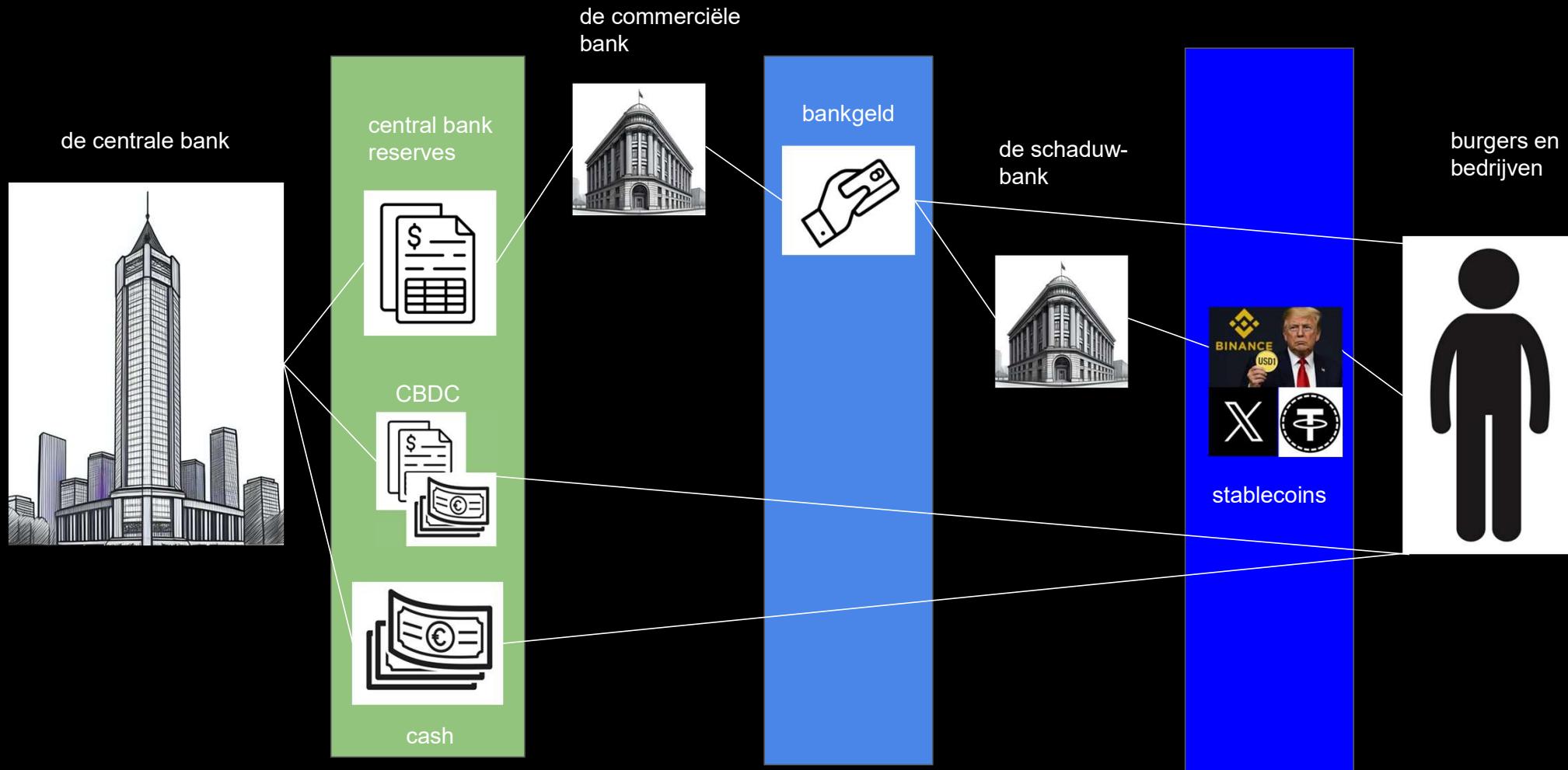
Returns via buybacks and dividends higher than any year since before the financial crisis



Four years ago, the European Central Bank ordered lenders to halt their capital return policies at the start of the Covid-19 outbreak
© Cavan Images/Alamy

Owen Walker, European Banking Correspondent FEBRUARY 26 2024

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World Liberty Financial

Token Sale Governance How to buy



Donald J. Trump

Chief Crypto Advocate



Eric Trump

Web3 Ambassador



Donald Trump Jr.

Web3 Ambassador



Barron Trump

Web3 Ambassador



Chase H.

Co-Founder



Steven Witkoff

Co-Founder Emeritus



Zach Witkoff

Co-Founder



Alex Witkoff



The digital euro: maintaining the autonomy of the monetary system



Philip R. Lane
Member of the Executive Board of the European Central Bank



Opinion **Stablecoins**

Why the world should worry about stablecoins

Dollar-based digital currencies offer benefits for the US, but Britain and the EU are better off resisting them

MARTIN WOLF

Added





KPMG

Home > Our Insights > Value Creation > Deposit Tokens: Bridging Traditional Banking and the Digital Economy

Deposit Tokens: Bridging traditional banking and the digital economy

Exploring deposit tokens and tokenized deposits in banking as a bridge between traditional finance and the digital economy



VAN WIE IS ONS GELD? ▾

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ANALYSE · 1 MAART 2024 · 13 MIN

Waarom banken niet willen dat jij met digitale euro's gaat betalen ↗



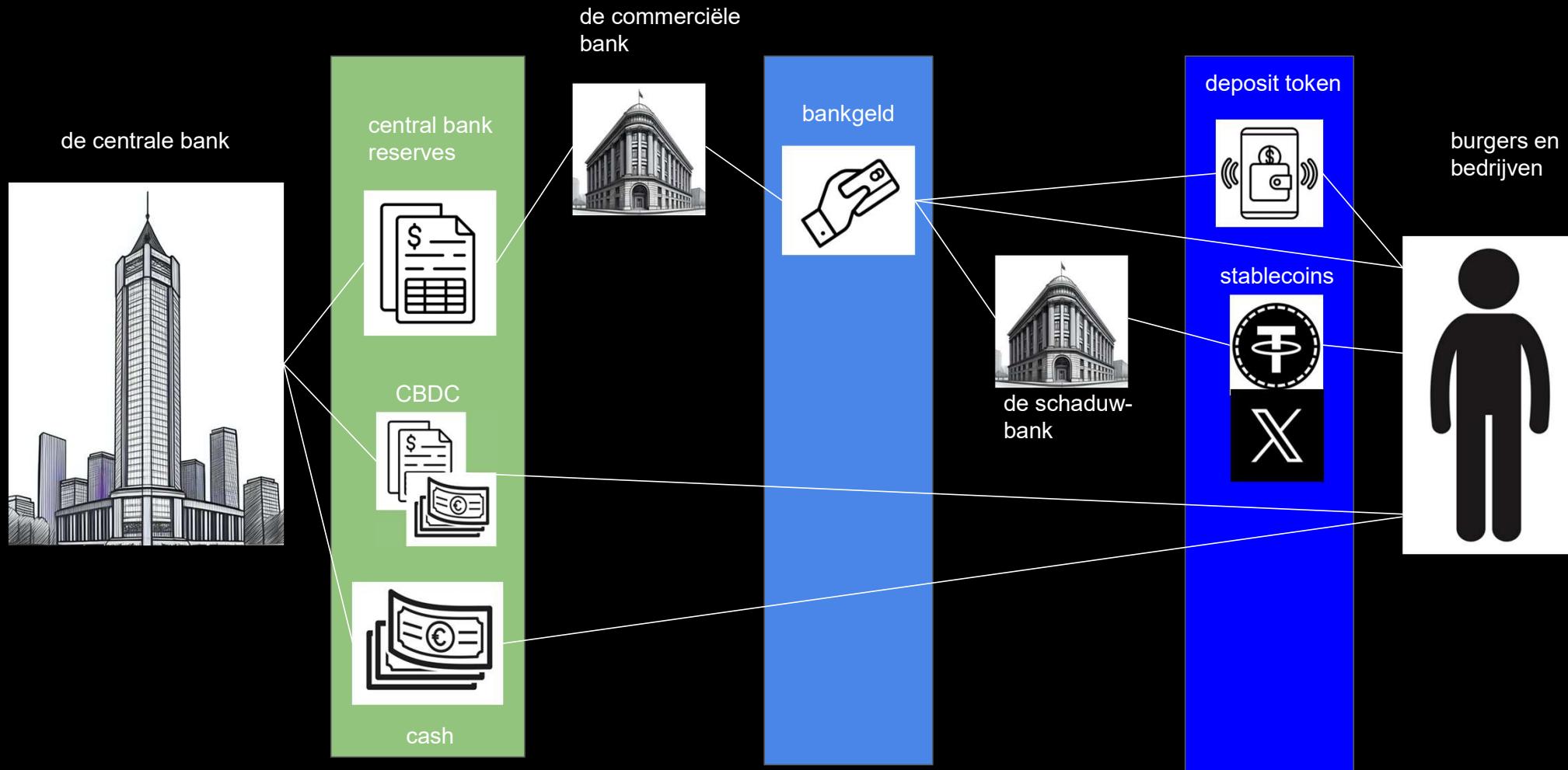
THOMAS BOLLEN



ALEXANDER FANTA

The Silicon Valley Bank fallout makes the case for digital currencies

If we think all deposits must be safe, what is the point of banks?





THOMAS BOLLEN

Geld genoeg, maar niet voor jou

FHM

THOMAS BOLLEN

Geld genoeg, maar niet voor jou

'Toegankelijk
en met
overtuiging'
Klaas Knot,
DNB-president van
2011 tot 2025

Hoe heroveren
we de macht over
ons geld?

FOLLOW THE

MONEY

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