

European Parliament, Committee on Economic and Monetary Affairs | Brussels, 2nd December 2019
Monetary Dialogue Preparatory Meeting: The Future of Money

The Impact of Digitalization on the Monetary System

Stefan Kooths
(Salomon Fiedler, Klaus-Jürgen Gern, Ulrich Stolzenburg)
Forecasting Center



Monetary fundamentals

- Money = generally accepted means of exchange
 - » store of value
 - » unit of account

} subordinate, non-constitutive characteristics
 - Money once emerged as a product of the free market (Menger 1892)
 - Money constitutes a good category sui generis
 - » No consumption good (no direct satisfaction of human needs)
 - » No production factor (productivity does not depend on its quantity)
- ⇒ **Global network good: Optimal currency area = world**
(if not used as policy tool for macro-management)

Historical perspective

▪ Monetary regimes in retrospect

- » Series of upheavals escaping the high-frequency radar
- » No obvious tendency towards a steady-state

▪ Today's global monetary system

» Key features

- Debt-backed
- Fractional-reserve system
- State-owned central bank

⇒ **Public-private-partnership**

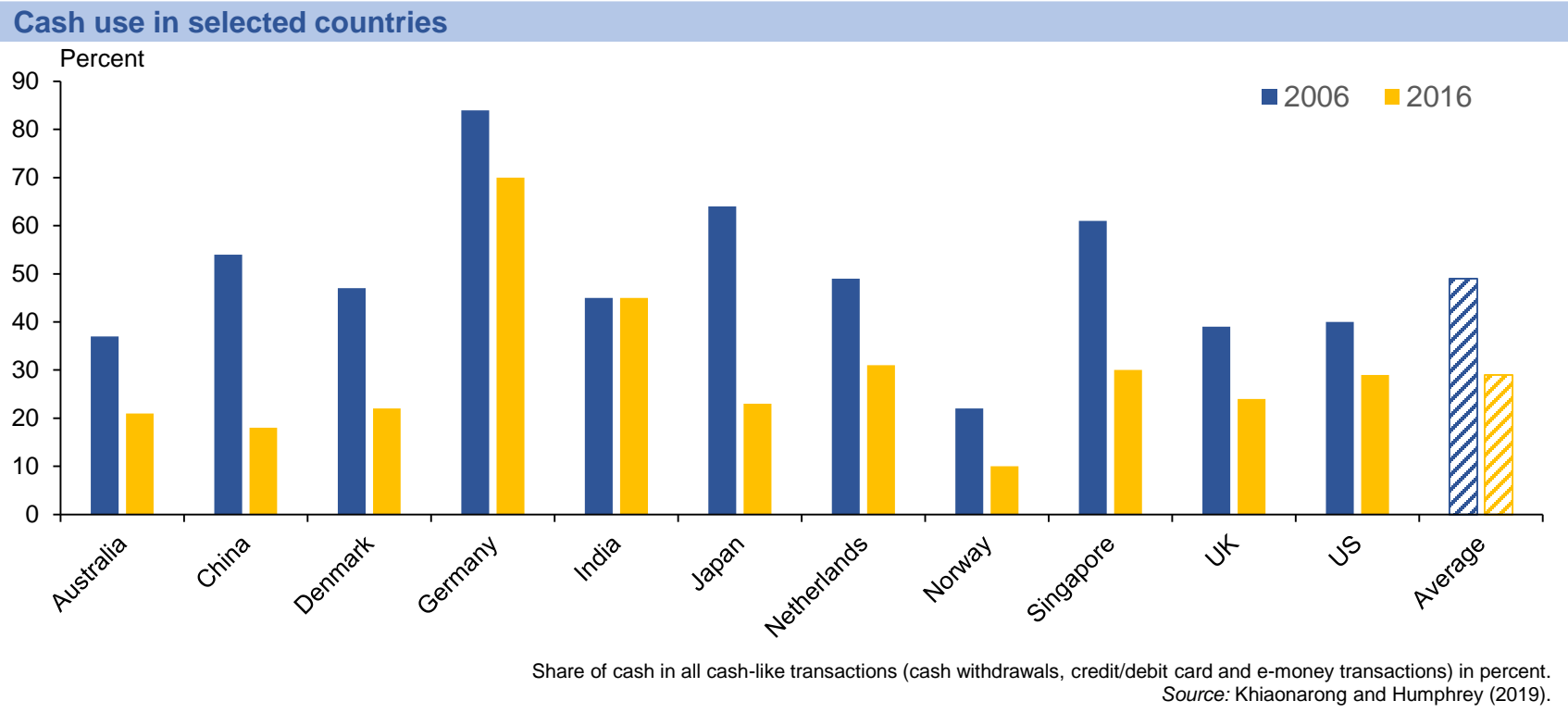
- » Short episode in the history of finance (48 years only)
- » Should not be taken for granted/permanent/normal/natural
- » Costly (money half-life: 35 years), fragile (financial crises)

⇒ **Not necessarily the end of history**

Legal tender

So far:
Cash only

Cash use is declining



Cashless society: Currency implications

Currency competition:
Scope for private digital currencies

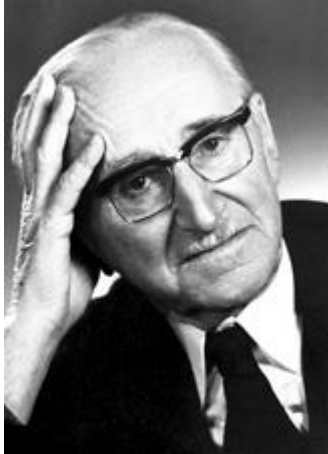
Central Bank Digital Currencies:
Impact on monetary system/policy

Cashless society: Currency implications

**Currency competition:
Scope for private digital currencies**

Central Bank Digital Currencies:
Impact on monetary system/policy

Denationalization of money



Friedrich A. v. Hayek (1899 – 1992)

- Denationalisation of Money: An Analysis of the Theory and Practice of Concurrent Currencies (1976)
- Denationalisation of Money: The Argument Refined. An Analysis of the Theory and Practice of Concurrent Currencies (1978)

Currency competition in the digital age

- Private digital money: Issuers outside the banking sector
 - » Google, Microsoft, Amazon, Apple, Facebook, ...
 - » Digital currency areas (DCAs)
- Guaranteed convertibility to boost acceptance and reputation-building while also promoting initial stability (regression theorem)
 - » Peg to existing fiat money: No new money, legal tender regulations
 - » Physical reserve media or basket of goods: Global free banking
- Limiting conduct of monetary policy via potential competition already
- Room for experimenting with parallel currencies

Parallel currencies: Easy to handle, no concerted action needed



Left-hand
traffic



Right-hand
traffic

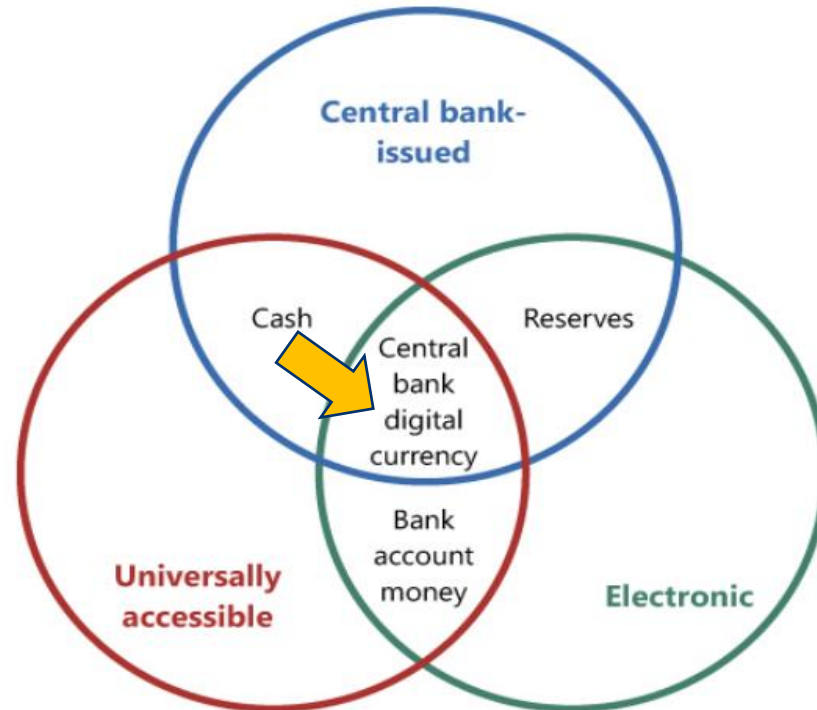
Sweden
3 September 1967

Cashless society: Currency implications

Currency competition:
Scope for private digital currencies

**Central Bank Digital Currencies:
Impact on monetary system/policy**

Taxonomy of money



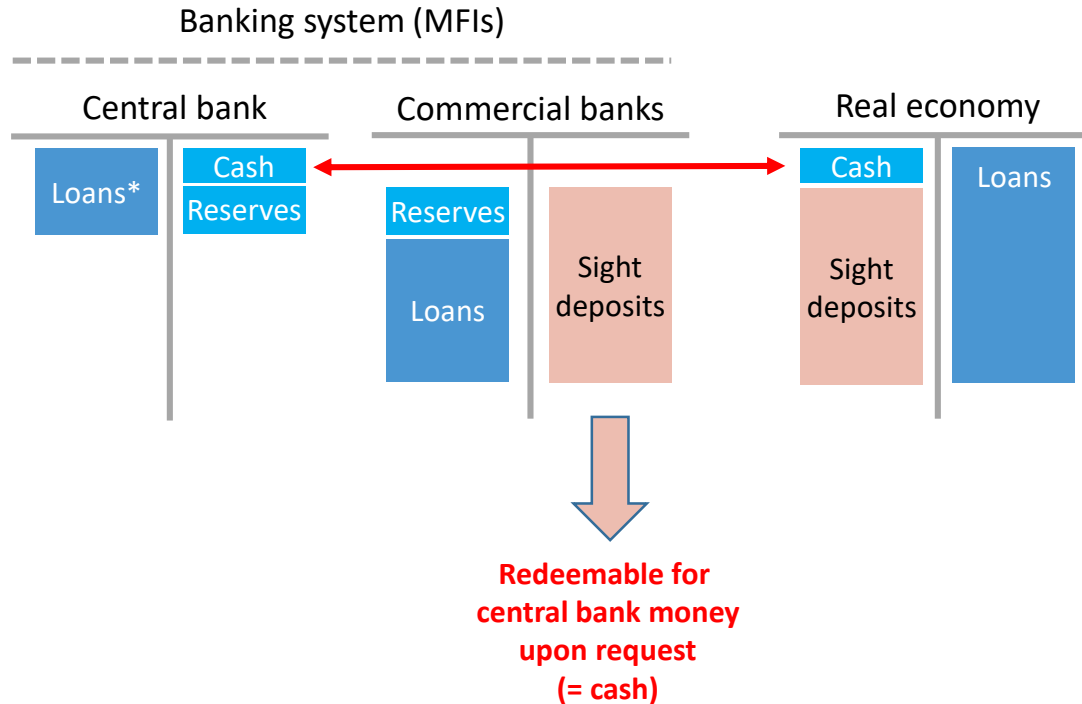
© Bank for International Settlements

Impact on monetary system

- Non-cash high powered money circulating beyond the commercial banking sector (Fedcoin accounts for everyone)

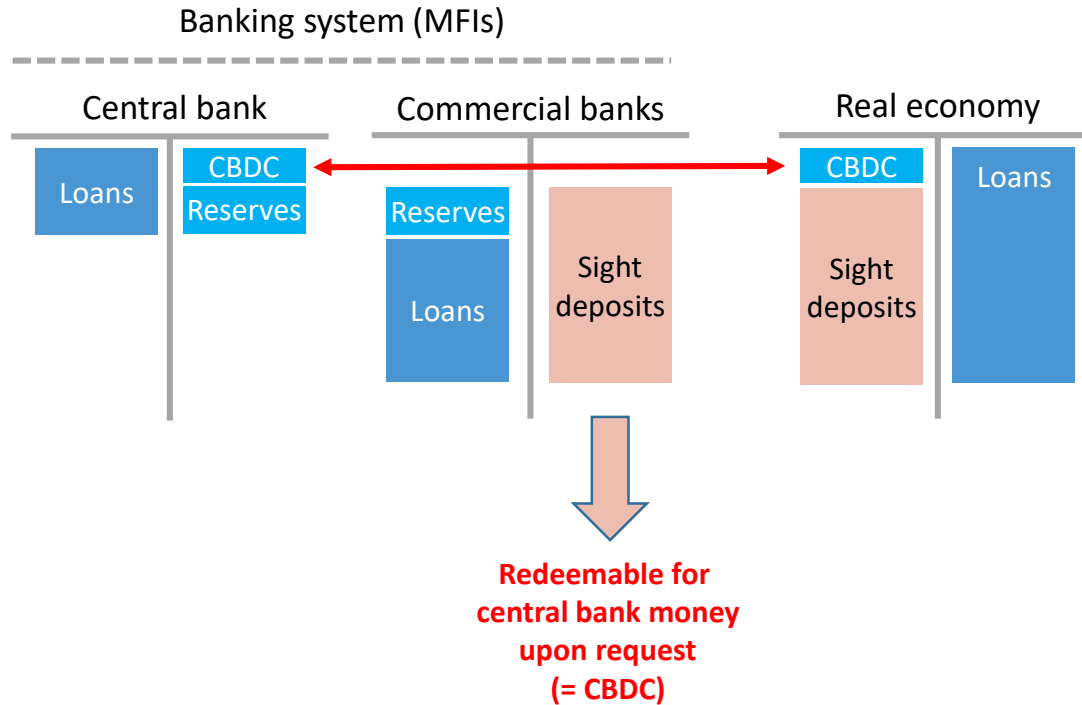
 - Potential substitute for bank deposits challenging the present fractional reserve system at its core
 - » Short-run impact on commercial banks may be similar to a bank run
 - » Trend towards fewer maturity transformation
 - » Sharp increase of base money, higher seignorage gains for CB
 - » Lower elasticity of money and credit creation
 - » If parallel to fractional reserve banking: Higher risks of pro-cyclical shifts between bank deposits and Fedcoins
- ⇒ **Drift towards 100-percent banking (Chicago Plan 2.0)?**

Cash-based monetary system

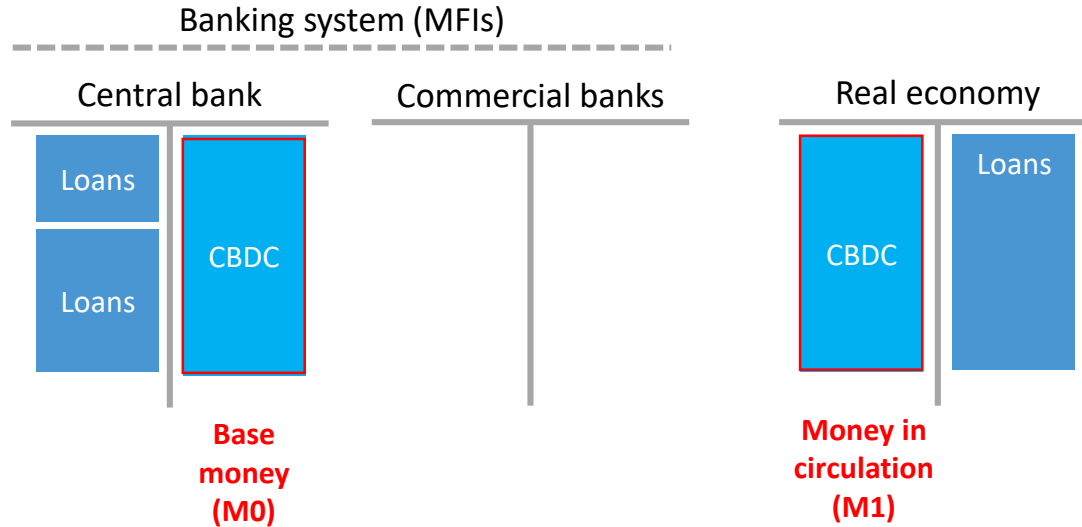


*All (financial) assets acceptable as collateral

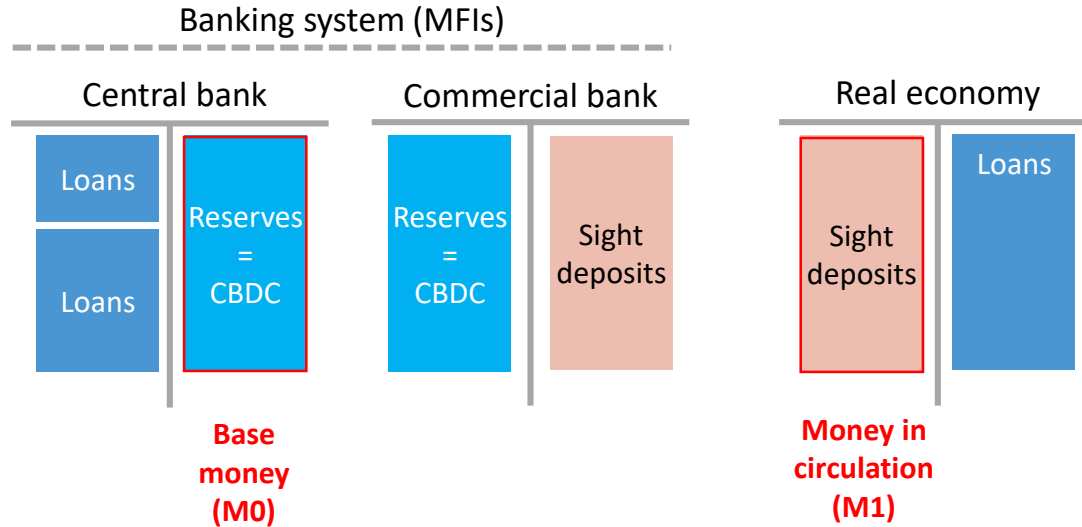
Cashless monetary system (I)



Cashless monetary system (II)



Cashless monetary system (III)



Impact on monetary policy: Deeper negative territory for interest rates?

- EBC interest rate (deposit facility)
 - » Jul. 2012 0.0 percent
 - » Jun. 2014 -0.1 percent
 - » Sep. 2014 -0.2 percent
 - » Dec. 2015 -0.3 percent
 - » Mar. 2016 -0.4 percent
 - » Sep. 2019 -0.5 percent

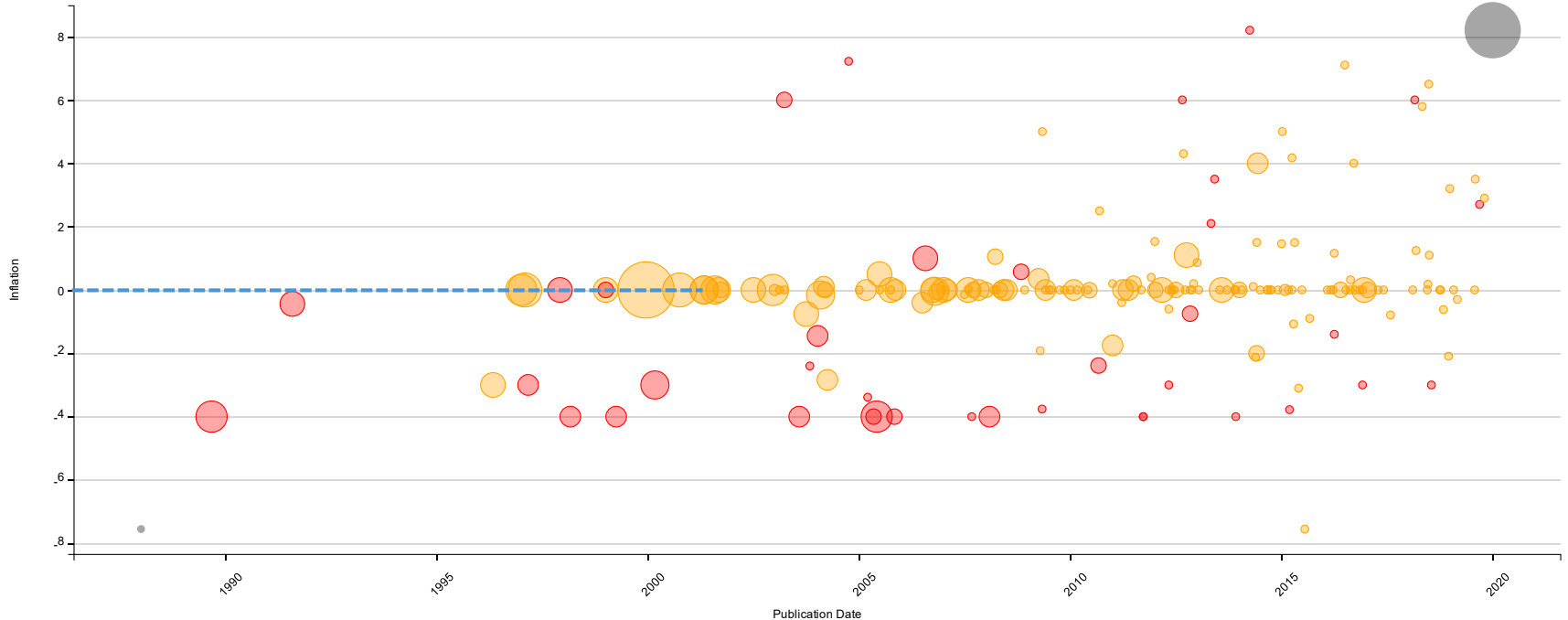
- Evasive response: Cash holdings
 - » Insurance/safety
 - » Transaction cost } ~ 0.7 percent

⇒ **CBDC as substitute for cash: Electronic demurrage currency**



Johann Silvio Gesell
1862-1930

Monetary policy: Optimal inflation rate?



Dots scaled by citations; red dots: paper uses flexible prices, yellow dots: paper uses sticky prices.

Source: [Diercks and Langlois \(2019\)](#)

CBDC business cases (beyond monetary policy)

Pro-active

- Backup payment system
- Higher seigniorage
- Payment system efficiency
- Cash phase-out
- Financial inclusion
- Surveillance

Defensive/responsive

- Upholding the public monopoly of money
- Countering competition from foreign CBDCs
- Countering competitive devaluations
- Countering the challenge of Libra

Substituting/abolishing cash

Technically

Relaxing the lower zero bound for monetary policy

BUT

Market participants in search for reliable means of exchange
since the beginning of the monetary era

Increased potential competition from private/foreign e-currencies
leaves central banks with less room for maneuver

Q&A



Prof. Dr. Stefan Kooths

Head of Forecasting

T +49 431 8814-579

F +49 431 8814-525

M stefan.kooths@ifw-kiel.de

 @StefanKooths

  @kielinstitute

www.ifw-kiel.de

