The future of digital retail payments in Europe: A role for central bank issued crypto cash?

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Overview

• Introduction
• Literature Review
• Role and Evolution of Money
• Retail Payment developments in Europe
• Rationale for Euro cryptocash
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• Considerations
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• Recommendation
**Era of profound paradigm shift**

Technological innovation/digital economy/decentralization and impacts on financial markets, infrastructures and processes

**Old world**: old money/Financial Market Infrastructures (FMIs) – regulated, relatively secure, not always efficient

**New world**: new money (e.g. Bitcoin)/new systems based on Distributed Ledger Technology (DLT) – unregulated/experimental/ephemeral, but also faster, sometimes cheaper, potentially more secure

The ability to transfer funds in a legally sound, safe and efficient way forms the centrepiece the world’s global economy.

DLT will fundamentally transform operations and market structure in the financial industry.
Introduction (2/2)

• Wave # 1: Bitcoin
• Wave # 2: Distributed Ledger Technology
• Wave # 3: Central Bank Crypto Currency (CBCC)

Backdrop:
• De-risking in global payments
• From dollarization to Bitcoinisation
• Competition for fiat currencies?
• Some live examples of fiat cryptocash
Literature

Cash studies on cost, usage, behaviour
- Schmiedel, Kostova, Ruttenberg (2012)
- EC Merchant Indifference Test (2015)
- Van Hove (2015)
- Bagnall et al (2014)
- Kahn (2015); McAndrews (2017)

CBCC/CB digital currency
- Bech, Garratt (2017)
- Riksbank (2017)
- Experiments: Project Jasper, Stella, FedCoin, MAS Ubin (I+II), E-Krona...
Role and Evolution of Money
The Future of Retail Payments in Europe

**Different forms of money and their transactional, operational, regulatory and legal properties**
- Fiat money
- Electronic commercial bank money
- E-money
- Private cryptocurrency (e.g. Bitcoin)

**Payment instrument evolution**
- SEPA Credit Transfers & Direct Debits & Cards
- SEPA Instant Payments
- Trend shifts from card to account based payments

**Settlement Space**
- SEPA Pan-EU ACH
- Eurosystem TIPS for 2018

**Regulatory Environment**
- Payments Services Directive
- Payment Services Directive 2
- General Data Protection Regulation
- NIS Directive
- E-IDAS Directive
- ....and more

**Technology Developments**
- Application Programming Interface (API)
- Cloud Technology
- DLT

...Could this accelerate the switch from physical cash to commercial bank electronic payment solutions?
Rationale for Euro Cryptocash (1/2)

• 3 possible future scenarios:

1) Significant acceleration of electronic payment adoption and demise of cash due to PSD2, SEPA Instant and other drivers (see Sweden, Denmark, Finland as examples): Questions around independence, risk free asset, payment system stability

2) A pronounced increase of the importance of private cryptocurrencies with the risk of crowding out fiat money of all forms: Questions around sovereignty, legal tender, trust

3) A backlash of open banking/access PSD2 related and other market developments (e.g. the rise of Alipay and WeChat): Questions around trust, increased demand for cash and CB digital retail payment solutions, financial inclusion

Flipside: if physical cash is gone and commercial banks operate on DLT without need to store balances at CB...what would that mean for the role of a CB?
Rationale for Euro Cryptocash (2/2)

- Competition and alternative to private cryptocurrencies
- Privacy of transactions
- Financial Inclusion
- Step towards x-border
- Efficiency
- ECB Independence
- Financial Stability
- Removal of SPF
- Distributed Eurosystem
- A digital means for consumer payment and saving
- ECB Independence

Financial Stability
Design Suggestions

CBCC key elements
- liability of the central bank (Eurosystem)
- cryptocurrency form
- denominated in Euro
- Value based
- 1:1 exchange

Holders – restrictions imposed on financial institutions and businesses based on central bank policy; primarily a consumer retail instrument (with limits)
Records of transfers and holdings – on the Eurosystem distributed ledger
Conversion – supported by commercial banks, subject to KYC/AML checks
Transfer mechanism - peer to peer
Transparency – anonymity of transactions for holders; transaction value limit of EUR 250
Availability - 24/7/365 online only
Convertibility - into cash and commercial bank deposits
Interest bearing – no
Legal Status – potential to designate as legal tender
Considerations

Economic perspective

- Monetary policy impact (cash substitution, interest, seigniorage)
- Financial stability implications (Positive impact expected due to the balance between digital commercial bank money and digital central bank money)
- Impact on banks business models (bank deposits, credit provision) and market infrastructure
- Cost-benefit analysis for CBCC
- Acceptance by users

Technical perspective

- Maturity not yet reached; need for further experimentation in a rapidly evolving market
- Safety, efficiency, neutrality

Operational perspective

- Role of Eurosystem in maintaining DL, organise issuance, verification, redemption, destruction, vetting crypto wallet applications and setting security standards

Policy perspective

- Consumer protection, financial education
- Data privacy
What CBCC should not be

• Destroyer of commercial banking model
• Accelerator of systemic bank runs
• A monetary policy tool to pass on negative interest rates
• A corporate payment and investment solution
• An option for limitless creation of euro-crypto cash (QE on steroids)
• A means to control the population
• A facilitator for money laundering abuse
• A cyber security risk
Recommendation

- Experiment with different technologies to test for a new form of central bank cash as a retail payment instrument for our digital future
- DLT, zero-knowledge proof, cloud are all relevant technology components that look promising
- Through experimentation identify gaps and relevant questions across technical, operational, policy related aspects
- A step on the journey to improve domestic and cross-border payments