

Digital Currencies and Fast Payment Systems

Asian Monetary Policy Forum

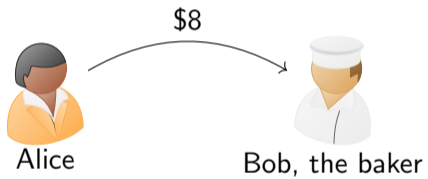
Darrell Duffie

Graduate School of Business, Stanford University

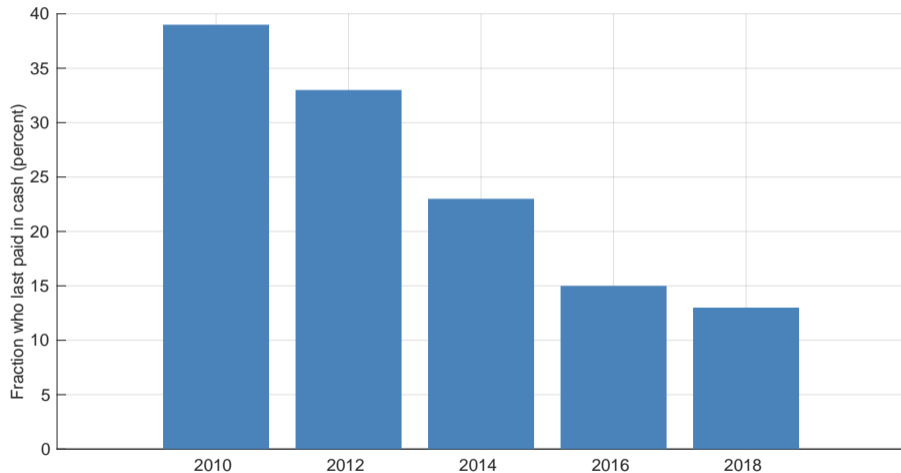
MAS, Singapore, May, 2019

With research assistance from Hanna Tian and David Yang

Token-based payment

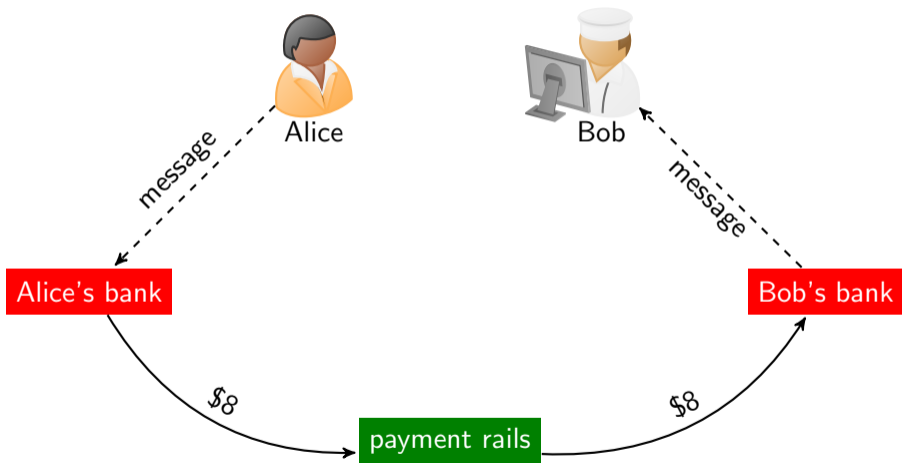


Swedes now rarely use cash

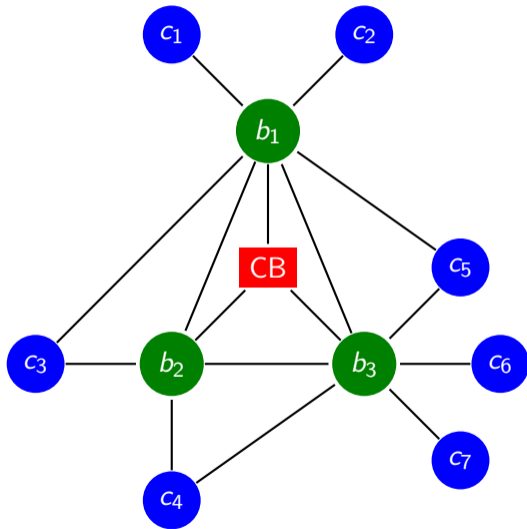


Source: Riksbank eKrona Report (2018).

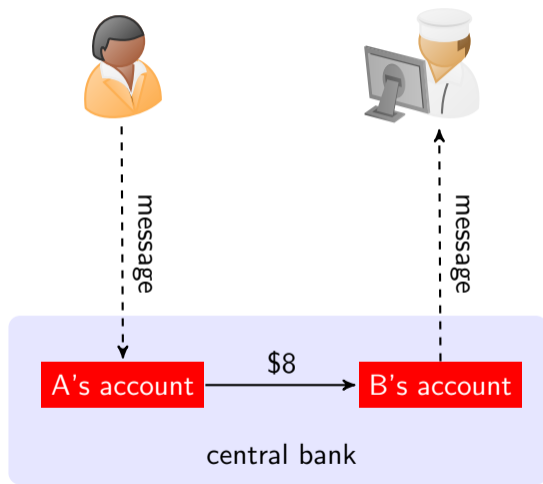
Bank-account-based payment



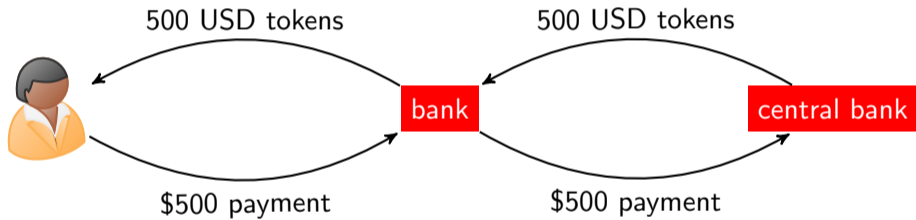
Banks form the backbone of the payment rails



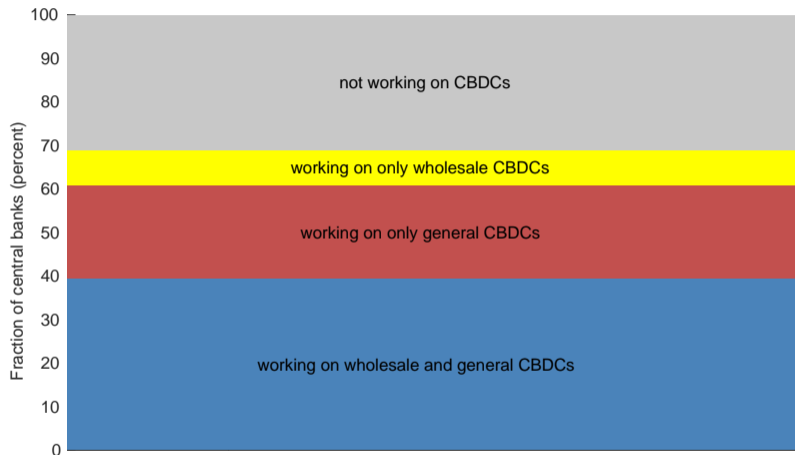
CBDC account payment



CBDC token issuance

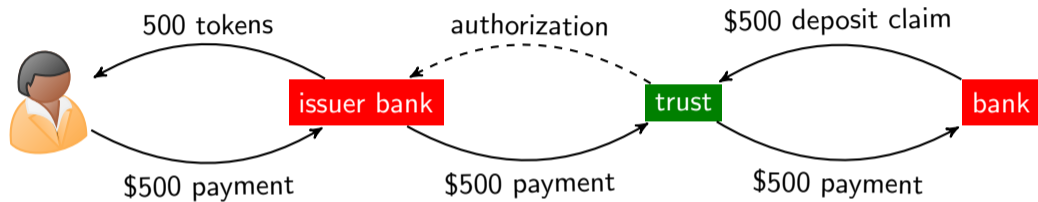


Most central banks are now working on digital currencies



Data source: CPMI survey of 80 central banks, Coeuré (2018).

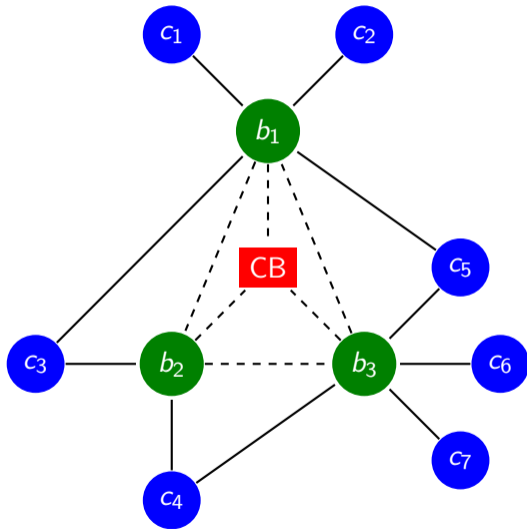
Private stablecoin issuance



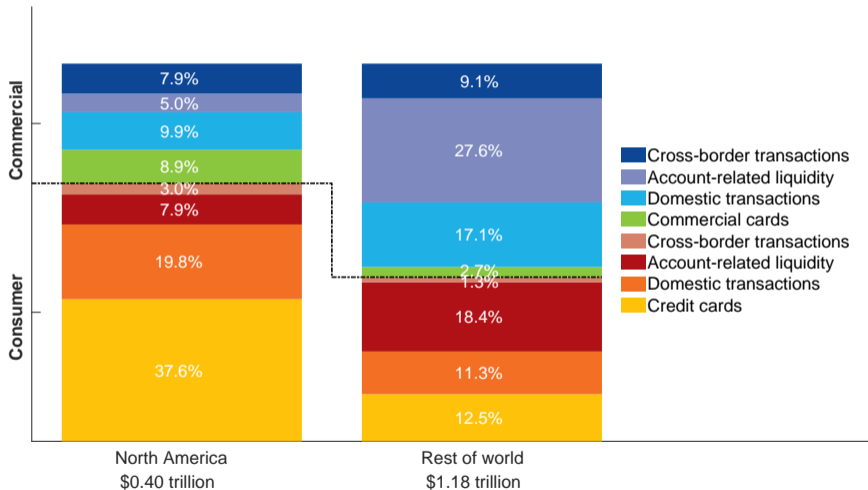
Examples of fast 24 x 7 bank-based payment systems

- ▶ Korean Electronic Banking System, established 2001.
- ▶ Bank of Mexico's Sistema de Pagos Electrónicos Interbancarios.
- ▶ Swish, a private mobile payment system available in Sweden.
- ▶ The United Kingdom's non-profit utility, Faster Payments.
- ▶ Singapore: Fast and Secure Transfers (FAST).
- ▶ The European Central Bank TARGET Instant Payment Settlement (TIPS), based on the SEPA Instant Credit Transfer platform.
- ▶ The US: Real-Time Payments System (private sector) and a proposed Fed RTGS fast payment system.

A new form of fast payments: Open-API 2-ledger system (Token)

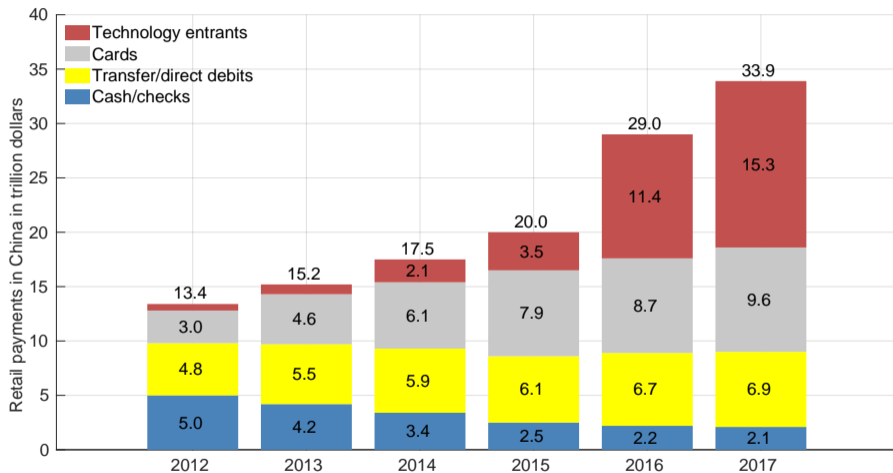


Bank-based payment system revenues will probably be disrupted



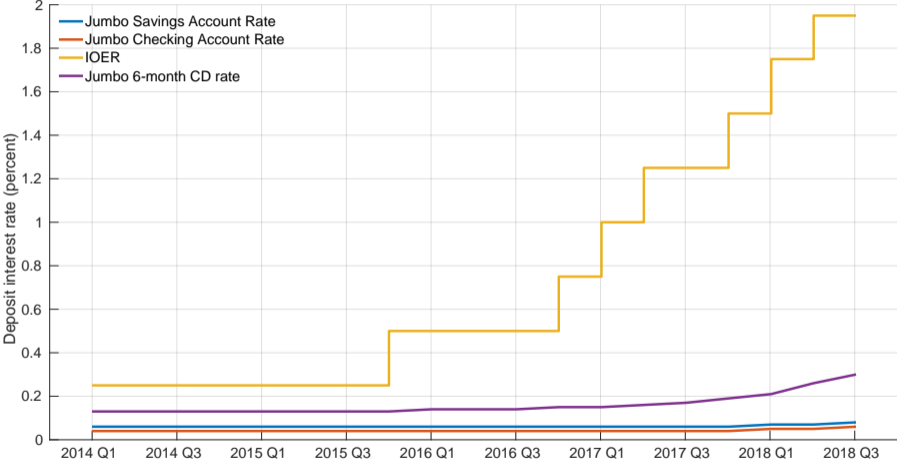
Data: McKinsey Global Payments Map 2017.

Technology firms entered China's payment system



Source: McKinsey Global Banking Annual Review 2018.

U.S. banks do not offer competitive rates for retail deposits



Data sources: U.S. Federal Reserve and Federal Deposit Insurance Corporation.

Implications for monetary policy transmission and financial stability

- ▶ Increased passthrough efficiency through rate competition:
 - ▶ Entry of technology firms and digital banks.
 - ▶ Open-banking APIs and fast payment systems
 - ▶ Potential use of CBDCs or private stablecoins.
- ▶ Moderately reduced control by the central bank of its balance sheet.
- ▶ Potential financial stability concerns.
 - ▶ Facilitating flight from stressed banks to other banks, CBDCs, or stablecoins.
 - ▶ New operational risks.

A few predictions

- ▶ Instant payments of some form will dominate within, say, 10 years.
- ▶ Effective forms of instant payment are feasible now or will be within a few years:
 - ▶ instant bank-account payment systems.
 - ▶ central bank digital currencies.
 - ▶ private stablecoins.
- ▶ Large bank business franchises will be disrupted, whether by non-banks or banks.
- ▶ Most developed-market central banks will support the ranking:

fast bank-account payment systems > CBDCs > non-bank stablecoins.