

E-krona and international CBDC cooperation

EPSM, 24 June 2021

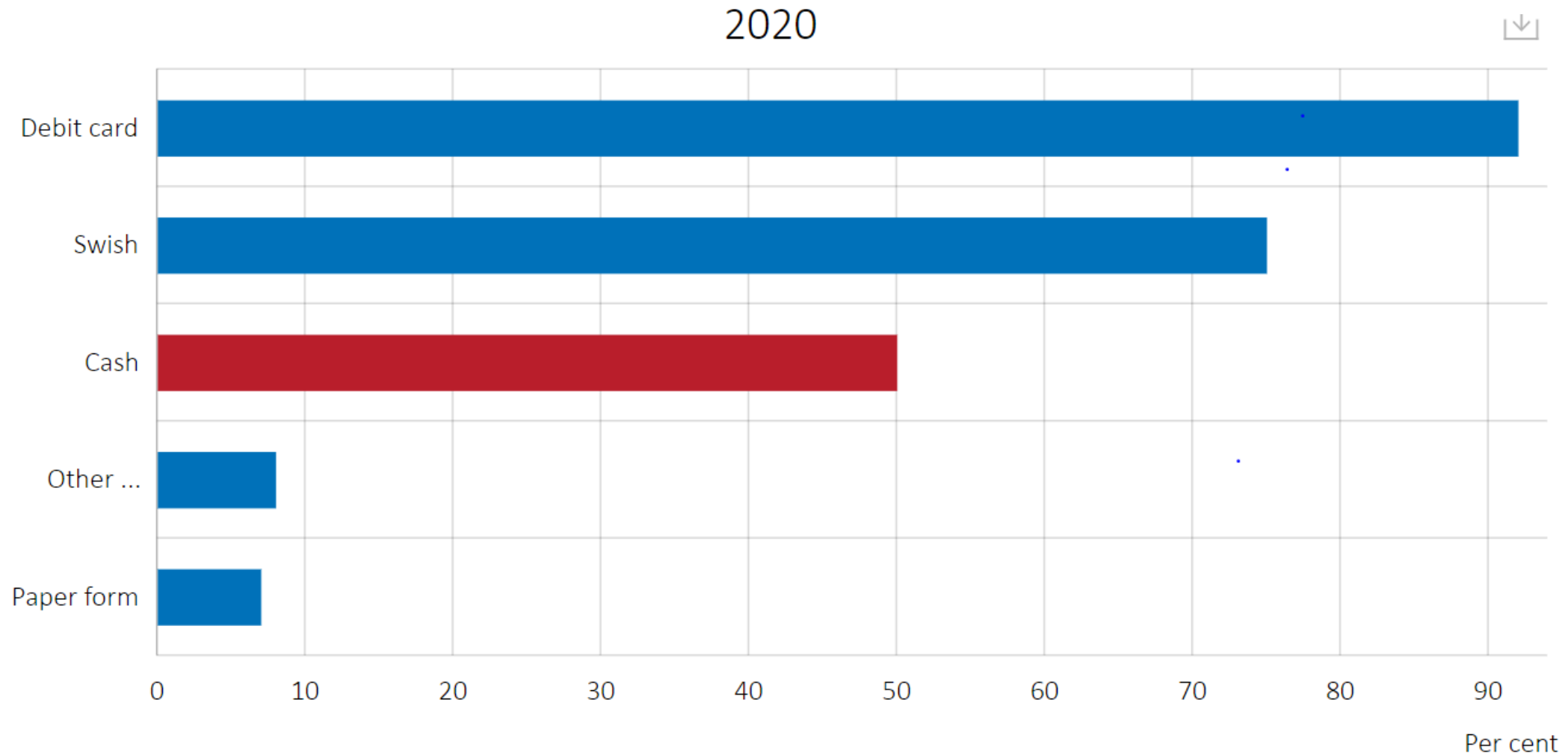
S V E R I G E S R I K S B A N K

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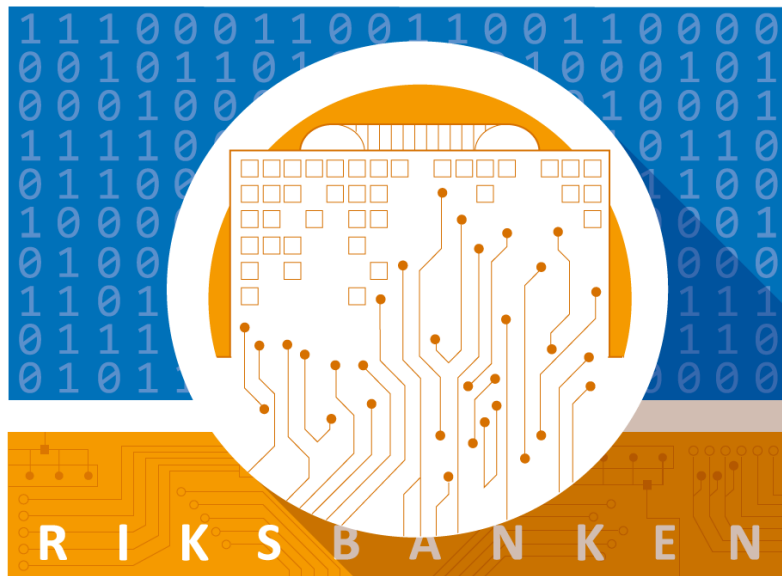
Head of Policy and Analysis
Payments Department

The payment app Swish has overtaken cash

“What means of payment have you used in the last 30 days? Several response alternatives are possible.”



The Riksbank is investigating the possibility of issuing an e-krona



- Driver: marginalization of cash
- E-krona project since 2017
- Pilot with Accenture on technical aspects
- No decision taken
- A parliamentary committee will review the public sectors role with regard to means of payment in a digitalised economy

E-krona – a digital complement to cash



- Gives the general public access to state-issued money
- Easily accessible, simple and user-friendly
- Strengthens the resilience of the payment system
- Competitively neutral infrastructure that promotes competition and innovation

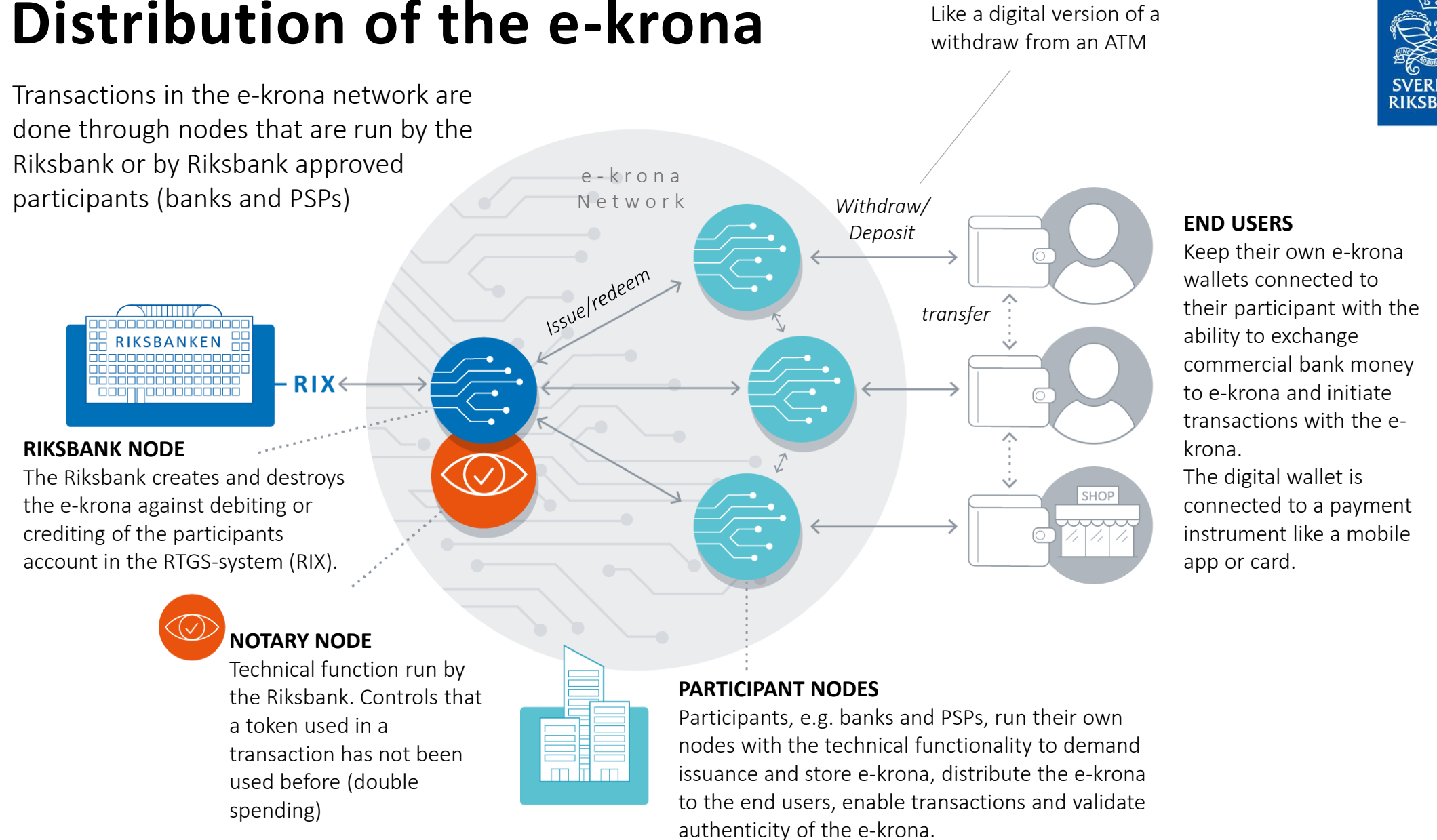
The e-krona pilot: Build and test technical solutions

- Proof of concept (POC) in order to increase the knowledge base
- Objective: Technical solution (POC) and a rule-book (scheme)
- Objective of the pilot is to increase the Riksbank's knowledge of the technical possibilities and issues with a CBDC



Distribution of the e-krona

Transactions in the e-krona network are done through nodes that are run by the Riksbank or by Riksbank approved participants (banks and PSPs)



RIKSBANK NODE

The Riksbank creates and destroys the e-krona against debiting or crediting of the participants account in the RTGS-system (RIX).



NOTARY NODE

Technical function run by the Riksbank. Controls that a token used in a transaction has not been used before (double spending)



PARTICIPANT NODES

Participants, e.g. banks and PSPs, run their own nodes with the technical functionality to demand issuance and store e-krona, distribute the e-krona to the end users, enable transactions and validate authenticity of the e-krona.

END USERS

Keep their own e-krona wallets connected to their participant with the ability to exchange commercial bank money to e-krona and initiate transactions with the e-krona. The digital wallet is connected to a payment instrument like a mobile app or card.

Phase 2 of the technical pilot

- Started phase 2 of the pilot where we will continue to test the technical solutions possibilities and limitations
- Some focus areas for the second stage of the pilot:
 - Involve real potential participants to test the integration of the network with "the world outside"
 - Implement local storage of tokens to test offline functionality and its limitations
 - Integrate the network with a POS-terminal
 - Further tests of performance and scaling in the token and DLT-network
- A brief report of stage 1 of the pilot was published on April 6



The road ahead for the e-krona

Parliamentary inquiry
~ nov 2022

Pilot project
Phase 1
~ Feb 2021

Pilot project
Phase 2
~ Feb 2022

Pilot project,
further extension?
~ Dec 2026

Preparation for the issuable e-krona?

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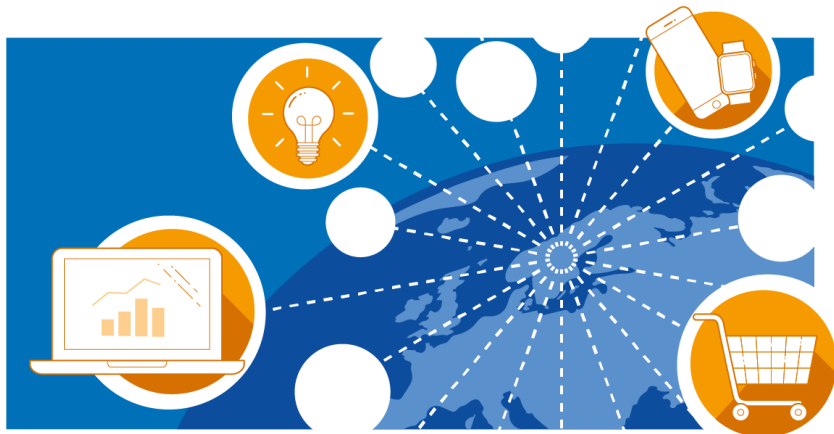


Thoughts on CBDC adoption



- Needs to fulfill unmet user needs
- Should achieve network effects – by targeting one-sided market segments or by building on existing user bases
- CBDC adoption likely more successful if CBDC does not require users to buy new devices

Thoughts on the merchant side of CBDC



- Two-sided nature of the payments market
- To accept CBDC in payments, merchants must integrate CBDC into their payment infrastructure
- Merchants with older technology cannot simply add CBDC payment functionality by installing software
- For online retailers, integrating new payment methods is easier and lower cost than upgrading physical PoS equipment in stores
- Merchants may also have financial incentives for adopting a CBDC

International cooperation

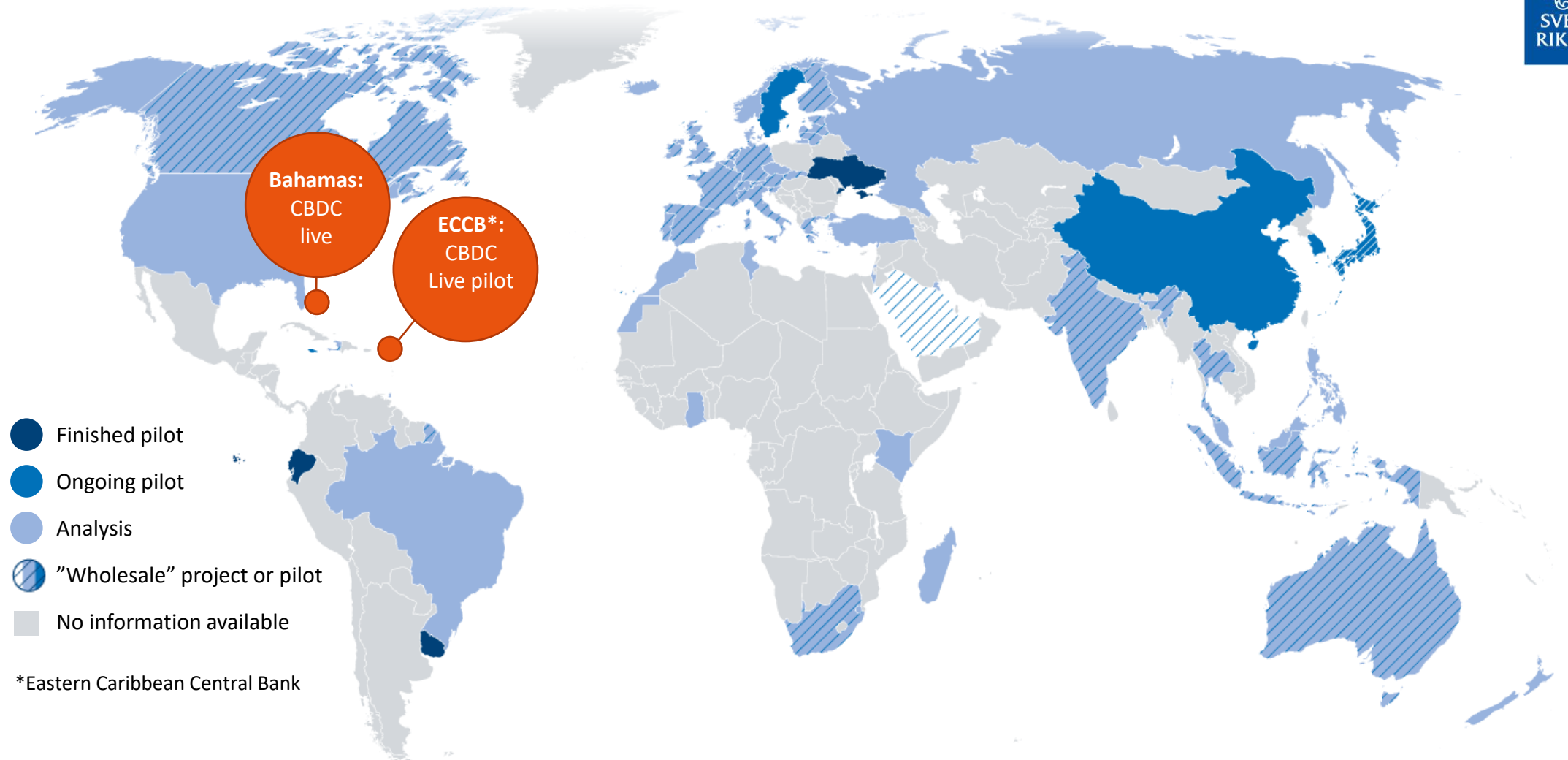


- CBDC – Coalition of central banks
- G20 initiative on improving cross-border payments

The pandemic, crypto asset *hype* and concerns about BigTechs have stimulated major central banks' CBDC interest even further

- **Fabio Panetta**, ECB, 26 May
 - *"[A] digital euro would help to keep competition open and stimulate innovation, while strengthening Europe's autonomy and financial resilience"*.
- **Jon Cunliffe**, BoE, 13 May
 - *"[I]t looks probable in the UK that if we want to retain public money [...], the state will need to issue public digital money that can meet the needs of modern day life"*.
- **Lael Brainard**, Fed, 24 May
 - *"With [...], the Federal Reserve is stepping up its research and public engagement on CBDCs"*.
- **Also other central banks are stepping up their CBDC preparations:**
 - **Norway**, Georgia, Israel, Russia, Eastern Caribbean, Jamaica

Most central banks are working on CBDC



Source: Updated version of data in April, from Auer, R. Cornelli, G. and Frost, J. (2020), "Rise of the central bank digital currencies: drivers, approaches and technologies". BIS WP No 880, data downloaded from BIS web page.

Coalition of central banks*

Principles for a CBDC

- i. “do no harm” to monetary and financial stability
- ii. co-exist with cash and other types of money
- iii. promote innovation and efficiency

Work in 2021

- Analysis of technological and design choices
- Focus on interoperability and user cases
- Domestic outreach

** Bank of Canada, Bank of England, Bank of Japan, ECB, Federal Reserve, Swiss National Bank, and Sveriges Riksbank*

Need to improve cross-border payments

- **Payment infrastructure is usually built for domestic use**
 - Global card systems are rare exceptions
 - Settlement is especially difficult
- **Correspondent banking is backbone of cross-border payments**
 - Slow and expensive
- **Diem (previously Libra) was a wake-up call**
- **G20 work stream – Future of Payments**
 - Cross-border payment systems, stable coins, CBDCs

Thank you