CBDC and Cross-border Settlement
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An introduction to CBDC
CBDC: a primer

Retail CBDC
- digital payment instrument, denominated in the national unit of account, which is a direct liability of the central bank, like cash;
- for general purpose use (households and businesses);

Examples:
- Live CBDCs: Sand Dollar issued by the Central Bank of the Bahamas; Dcash issued by the Eastern Caribbean Central Bank
- Large scale pilot: e-CNY by People’s Bank of China
- Extensive research: Bank Of Canada, Bank of England, ECB, Sveriges Riksbank, etc.

Wholesale CBDC
- restricted access by financial institutions and similar to today’s central bank reserve and settlement accounts;
- for the settlement of large interbank payments or to provide central bank money to settle transactions of digital tokenised financial assets in new infrastructures;

Examples:
- Extensive research: Project Stella (ECB and BoJ); Project Jasper-Ubin (BoC and MAS); Inthanon-LionRock (HKMA and BoT) Project Aber (SAMA and UAE).
Work on CBDC around the globe

Share of respondent central banks

1 Share of respondents conducting work on CBDC.

Source: BIS central bank survey on CBDCs.
Ongoing CBDC Research and Development – Asia at the forefront

Project phase:
- Live retail CBDC
- Retail pilot ongoing
- Retail pilot completed
- Retail research
- Retail research and wholesale project
- Wholesale project
- N/A

BS = The Bahamas; ECCB = Eastern Caribbean Central Bank; HK = Hong Kong SAR; JM = Jamaica; SG = Singapore. The use of this map does not constitute, and should not be construed as constituting, an expression of a position by the BIS regarding the legal status of, or sovereignty of any territory or its authorities, to the delimitation of international frontiers and boundaries and/or to the name and designation of any territory, city or area.

Some motivations for CBDC – but not all are relevant for every central bank

- **Situation:**
  - Reduced use of cash (accelerated by the Covid-19 pandemic)
  - Growth of digital commerce
  - Possible emergence of a tokenised financial ecosystem

- **Role of CBDC:**
  - as risk-free means of payment (but deposit saving schemes...)
  - as competition-neutral payments backbone
  - as monetary anchor

- **Support specific use cases:**
  - Safer and more efficient cross-border payments
  - Increase financial inclusion
  - Enhance competition and provide backup infrastructure for payments
Implications of CBDC
Potential implications of CBDC with a focus on the international dimension

- Bank disintermediation (in particular in times of crisis)
- Digital dollarisation
- Magnifying cross-border transmission of shocks and increasing FX volatility
- Increased demand for the currency/appreciation
- International cooperation

Conclusion:

We do not know, no empirical evidence

CBDC implications will depend among others on:
- its design (eg, intraday vs. overnight),
- its use as store of value, and
- its use as a means of payment
Cross-border aspects of CBDC

Two dimensions:

<table>
<thead>
<tr>
<th>Cross-border access to and use of CBDCs</th>
<th>Interoperability between multiple CBDCs</th>
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<tbody>
<tr>
<td><strong>Access to CBDC</strong></td>
<td><strong>mCBDC Model 1</strong>: Enhanced compatibility</td>
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<tr>
<td>Domestic</td>
<td>• Compatible technical and regulatory standards with overlapping participation</td>
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<tr>
<td>Domestic CBDC</td>
<td><strong>mCBDC Model 2</strong>: Interlinking</td>
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<td>Access for tourists/visitors</td>
<td>• Interlinking through shared technical interfaces or by use of a (centralised or decentralised) common clearing mechanism</td>
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<td>International payments</td>
<td><strong>mCBDC Model 3</strong>: Integration into a single system</td>
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<td>(remittances, commerce)</td>
<td>• Multiple CBDC can be run on a single platform (e.g., &quot;M-CBDC bridge&quot;)</td>
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Project Jura: Cross-border wholesale CBDC
The BIS Innovation Hub’s six strategic focus themes

- **Suptech and regtech**
- **Next-generation financial market infrastructures**
- **Open finance**
  - APIs in the open banking context and related data issues
- **Cyber security**
- **Central bank digital currencies**
  - Aurum (HK)  Jura (CH)
  - Helvetia (CH)  mBridge (HK)
  - Dunbar (SG)
- **Green finance**
The BIS Innovation Hub – a global force for innovation
Project Jura – what we did

- In a cross-border context with Swiss and French banks...
- ... test full life-cycle of a tokenised commercial paper...
- ... and foreign exchange transactions...
- ... with three commercial banks having direct access to...
- ... intraday EUR and CHF wCBDC...
- ... having all tokens circulating on a single platform...
- ... but enabling control for the central banks...
- ... in a realistic setting
  - real-value transfers between three banks
  - current legal and regulatory environment
  - using an existing platform
Jura findings

- New approach to cross-border settlement of tokenised assets and FX, interlinking asset and cash settlement

- Governance: Novel technology affords controls, facilitating wCBDC issuance on privately operated third-party platform in a different jurisdiction
  - Subnetworks with unique issuer and notary node
  - Deployed on local clouds
  - Dual-notary signing for PvP and DvP

- Realistic setting: additional insights but also challenges =&gt; production setting would be different
  - wCBDC without legal force; settlement finality only in underlying systems
  - Integration into banking systems
Discussion