

The Bank of Canada's Blockchain Experiment



The views expressed in this presentation are my own and not necessarily those of the Bank of Canada.

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Bank of Canada's Fintech Agenda

- Began in 2013 as a study of electronic money and payments and their potential effects on central bank policies of currency issuance, financial stability, and monetary policy
- Now expanded to cover all fintech innovations and how they could change banks and the financial sector in ways that have macro implications that could be of concern to a central bank
- Comprises monitoring to keep up to date with the changes and research to understand their implications
- Also working closely with international partners to share information and coordinate responses as required

What is Project Jasper?

- An ongoing collaboration initiated by Payments Canada and the Bank of Canada to explore the possibility of **issuing, transferring and settling central bank-issued assets on a distributed ledger network**



Motivation for Project Jasper

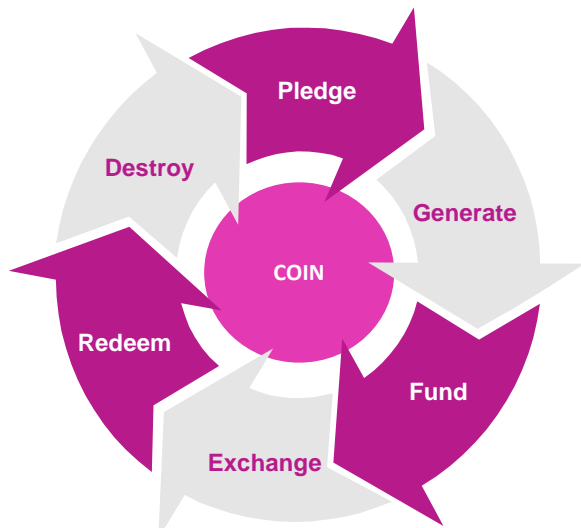
■ Why DLT?

- Comprehensive shared data source:
 - Reduce effort/cost of reconciliation
 - Regulatory & Compliance
 - Future Overlay Services
- No single point of failure
- Interoperability – Base Layer for future Securities Settlement Systems

■ Key Questions?

- Satisfies relevant PFMLs?
- Reduces costs?
- Lower barriers to direct participation?
- Improves security and resiliency?
- Increases transparency and access?
- Better collateral management?

The Jasper Distributed Ledger Settlement Platform



- 1 Participants **pledge** T1 cash collateral into a special pooled account held by Central Bank
- 2 Central Bank converts cash collateral to **generate** COIN
- 3 Central Bank transfers COIN to **fund** participants' accounts
- 4 Identifiable, trusted counterparties **exchange** assets on the COIN platform
- 5 Participants **redeem** COIN for T1 cash collateral
- 6 Central Bank **destroys** redeemed COIN

Design Assumptions

- Network participants (FIs) each set up a digital currency account as part of a COIN asset registry
- The COIN asset registry is owned by the Central Bank; the digital funds belong to the FI
- The Central Bank issues depository receipts, not tokens
- The COIN shared ledger reflects real-time accurate account balances for each digital currency account
- All network participants are trusted and authorized to perform transactions

Lessons Learned

- A substantial amount of centralization was still required (e.g. key and node management)
- Proof of Work Ethereum system unlikely to be more cost effective than current system
- Most cost savings unlikely to be in core system itself; most savings likely to come from bank reconciliation efforts no longer required
- Even more savings could come from what could be built on top of a core cash payment distributed ledger system

Lessons Learned

- Current version of the system has too much information sharing compared to what would be desired in a production system
- PFMI concerning collateral, credit risk, money settlement, and liquidity risk met by Jasper DLT
- Concerns exist with respect to PFMI for settlement finality, operational risk, as well as access and participation requirements
- 11 other PFMI deemed out of scope because they relate primarily to governance and legal aspects of the system

Questions?

