The Development of Digital Currencies and the Canadian Financial Landscape

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Outline of presentation

- Evolution of money
  - E-money and e-payments
  - E-money and the Bank of Canada

- What is e-money
  - Centralized e-money
  - Decentralized e-money

- E-money and the payments landscape

What is money?

1. Generally accepted medium of exchange

2. Unit of account

3. Store of value

Money and e-payments

- Money: cash and demand deposits
  - Traditionally, demand deposits transferred by cheques

- E-payments through:
  - debit cards
  - phone banking
  - Internet banking
  - mobile banking

- Allow **access** to demand deposits, do not lead to **creation** of money

E-money: reflection of societal trends

Demand

- Facilitates "long-distance" and online transactions
- Provides
  - Greater convenience
  - Lower fees
  - Increased security

Supply

- Technological progress
- Widespread use of Internet
- Adoption of mobile devices

E-money and the Bank of Canada

- The Bank as the issuer of currency
  - Banks notes a source of seigniorage revenue

- Promoting safety and efficiency in the payments system

- Potential role of the Bank

- Research agenda

E-money

- Monetary value stored in an electronic device
  - Often has an issuer for whom it is a liability

Example of e-money
- Multi-purpose prepaid cards issued by Visa

Increasingly issued by non-regulated entities
- E.g., Octopus card in Hong Kong

Two categories of E-money

Centralized

- Issuer controlling the currency
- Monetary value issued upon a receipt of funds
- Accepted as a means of payment by undertakings other than the issuer
- Example: a multipurpose prepaid payment card

Decentralized

- No central issuer
- Avoids intermediation
- Cryptography to avoid double-spending
- (Relatively) quick settlement of transactions
- More privacy (pseudonymity)
- Example: bitcoin

How well do cryptocurrencies perform as "money"?

- "Generally accepted" means of payment?
  - At present, relatively few establishments accept them

- Unit of account?
  - At present, few products have prices quoted in bitcoin

- Store of value?
  - High volatility of value when expressed in state currencies

The potential role of cryptocurrencies

- What needs do cryptocurrencies satisfy?

  – Reduce costs of financial intermediation

  – Irreversibility of payments

  – High degree of privacy

Other cryptocurrencies

- **Litecoin**
  - Similar to bitcoin
  - Attempts to lower settlement speed
  - Larger but still fixed "money supply"

- **Peercoin**
  - Proof of stake
  - "Money supply" to increase by 1% per year

- **Ripple**
  - "Payment system, currency exchange, and remittance network" rather than "digital currency"

Summary

- E-payments familiar part of financial landscape

- Bank's roles in terms of currency, monetary policy and efficiency of payments
  - Research and analysis
  - Share findings with Canadians

- E-money a relative newcomer
  - Centralized
  - Decentralized

- Canada's payments landscape changing rapidly
  - New innovations, participants, and systems