Monetary Policy and Payments: The Distributed Ledger Technology

Professor Laurie Simon Hodrick
A. Barton Hepburn Professor of Economics in the Faculty of Business, Columbia Business School
Visiting Professor of Law, Stanford Law School
Visiting Fellow, Hoover Institution

May 4, 2017
Monetary Policy and Payments: The Distributed Ledger Technology

Payment Systems and the Federal Reserve

A central function of the Federal Reserve is to manage the payment system: “A U.S. payment system that is safe, efficient and broadly accessible is vital to the U.S. economy, and the Federal Reserve plays an important role in promoting these qualities as a leader, catalyst for change and provider of payment services to financial institutions and the U.S. Treasury.”

Effectiveness criterion:
“An ubiquitous, safe, faster electronic solution(s) for making a broad variety of business and personal payments, supported by a flexible and cost-effective means for payment, clearing and settlement groups to settle their positions rapidly and with finality.”

Distributed Ledger Technology

Overview: Bitcoin => Blockchain => Distributed Ledger

“Distributed ledger” is a collective term that encapsulates continuously-growing decentralized consensus databases that authenticate ownership provenance by recording transactions and that are secured by cryptography.

Alternative to classic double entry bookkeeping maintained by central authority.
Distributed Ledger Technology

Potential Benefits: Greater transparency of ownership and the ability to safely transfer more quickly at lower cost without the need for an intermediary

- Ubiquity: Broad application and accessibility if standardization
- Safety and Security: Non-falsifiable cryptographic integrity without central authority or “trusted third party”
- Speed: Nearly instantaneous
- Cost Efficiency: Eliminates intermediaries and infrastructure costs (allows direct settlement)
- Finality: Immutable record which cannot be altered retrospectively
Monetary Policy and Payments: The Distributed Ledger Technology

- **Distributed Ledger Technology**

- Potential Challenges: Operational, technological, legal, regulatory, and other hurdles
  - Ubiquity: Lack of standardization and interoperability, including across jurisdictions
  - Safety and Security: Issues of privacy and transparency, hacks, who has permission to update the code and to legally enforce transactions, compulsory anti-money-laundering and know your customer processes
  - Speed:
  - Cost Efficiency: Question of scalability
  - Finality: How to satisfy regulatory requirements, how are disputed claims handled
Monetary Policy and Payments: The Distributed Ledger Technology

Summary

The distributed ledger, while not yet ready for wide scale adoption, may be a transformative technology that provides ubiquitous, safe, faster electronic solution(s) for making a broad variety of business and personal payments, supported by a flexible and cost-effective means for payment, clearing and settlement groups to settle their positions rapidly and with finality.

“The Blockchain and its Implications for Corporate and Securities Law and Practice” (joint with David J. Berger and Joseph A. Grundfest)

If you’d like to receive this research when its completed: LHodrick@Stanford.edu