Central Bank Digital Currency and the Future of Monetary Policy

Michael Bordo, Rutgers University
Andrew Levin, Dartmouth College

Dialogue of Continents Conference

Paris, France

September 5 2018

The Classical View of Money

Olim enim non ita erat nummus....Sed quia non semper nec facile concurrebat, ut, cum tu haberes quod ego desiderarem, invicem haberem quod tu accipere velles, electa materia est, cuius publica ac perpetua aestimatio difficultatibus permutationum aequalitate quantitatis subveniret.....Sed an sine nummis venditio dici hodieque possit, dubitatur.

Julius Paulus Prudentissimus, circa CCXXX A.D.

(Digesta Iustiniani Augusti, Liber XVIII)

The Classical View of Money

For there was once a time when no such thing as money existed....But it did not always and so easily happen that when you had something which I wanted, I for my part, had something that you were willing to accept. So a material was selected which, being given a stable value by the state, avoided the problems of barter by providing a constant medium of exchange.

Julius Paulus Prudentissimus, about 230 C.E.

(translation by A. Watson, The Digest of Justinian: Volume 2)

Virtual Currencies

- Digital currency is an asset in electronic form which has functions similar to paper currency.
- Virtual currencies are digital currencies established by private entities (e.g., bitcoin, ethereum, ripple).
- Real value can fluctuate sharply due to changes in relative supply & demand
- Verification can be costly and inefficient; e.g., bitcoin mining consumes huge amounts of electricity, similar to that of a large city.

Central Bank Digital Currency

- In contrast to digital currencies created by by private entities, the central bank can issue digital cash that has a fixed nominal value and serves as legal tender (like paper cash).
- Our analysis of digital cash draws on a long strand of literature in monetary economics.
- We focus on formulating broad design principles rather than logistical details.
- We conclude that digital cash can enhance all aspects of the monetary system.

Basic Functions of Money

- **Efficient medium of exchange for economic and financial transactions**
- **Secure store of value, bearing essentially the same return as other risk-free assets**
- **Stable unit of account for consumer items, wages, investment, retirement savings, etc.**

Why Should Central Banks Establish Digital Currency?

- Improve the effectiveness of the payments system for households and small businesses
- Facilitate cross-border financial transactions, including international trade and remittances
- Impede black-market activity (especially tax evasion) while protecting individual privacy
- Enhance the transparency and effectiveness of the monetary policy framework, especially in responding to severe adverse shocks

How Can the Design of Digital Cash Fulfill These Characteristics?

- **Legal Tender:** can be used for all public and private payment transactions
- **Real-Time Settlement:** payment network that eliminates counterparty risks and minimizes overhead costs
- **Interest-Bearing:** minimal spread between rates on retail digital cash accounts and bank reserves held at the central bank
- **Obsolescence of Paper Cash:** graduated fees on transfers between digital cash & paper cash

Who Should Provide Digital Currency to the Public?

Benefits of a public-private partnership between central bank & supervised financial institutions:

- **Fosters competition among providers**
- **Protects privacy of individual transactions**
- **Facilitates law enforcement and tax collection**
- **Strengthens public confidence in banks and other supervised financial firms**

In effect, the provision of digital cash would be similar to that of many other public goods (e.g., water, electricity, transportation).

How about the Future of Paper Currency?

- Paper cash is costly, so banks and retailers have strong incentives to curtail its use.
- Declining acceptance by retailers diminishes consumers' rationale for keeping paper cash; this feedback loop has been rapid in Sweden.
- A graduated fee system can prevent arbitrage between paper cash & digital cash, thereby eliminating the effective lower bound (ELB).
- Digital cash should be particularly beneficial for vulnerable households (elderly, disabled, and others who receive social assistance).

Stockholm Central Train Station
September 2017

How will Digital Currency Affect the Monetary Policy Framework?

- By eliminating the ZLB, there will no longer be a compelling rationale for targeting a positive inflation rate *(the "inflation buffer")*.
- The central bank can foster true price stability, i.e., zero average inflation of consumer prices.
- The interest rate on digital cash can serve as the primary tool of monetary policy, even in responding to severe adverse shocks.
- This framework will enable monetary policy to be more systematic, transparent, and effective.

How will Digital Currency Affect Central Bank Operational Independence?

- With the obsolescence of paper currency, the central bank will no longer generate significant amounts of seignorage revenue.
- Fiscal authorities will be solely responsible for determining the maturity composition of government debt held by the public.
- Thus, this policy framework will help insulate the central bank from political interference and fiscal pressures.

What if the Central Bank Refrains from Issuing Digital Currency?

- **Monetary control** could be impaired if the interest rate on reserves becomes delinked from financial markets and economic activity.
- **Systemic risks** could be exacerbated by the emergence of quasi-monopolistic payments.
- The central bank might be unable to mitigate **severe deflationary shocks**, resulting in a painful and protracted economic depression.

When Should Digital Currency Be Launched?

- Adjustments to the monetary system should occur via an open and deliberate process.
- Central banks can be quite inertial, but the payments system is now evolving rapidly.
- Central banks should actively engage with government officials, financial firms, and the general public in considering digital cash.
- The Sveriges Riksbank is now serving as a role model for this approach, and other central banks should follow its example.