

# Central Bank Digital Currencies and International Payments

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# Today's Agenda

The outcome of an interview study with payments practitioners  
I will discuss the following:

1. CBDC and International Payments: What are we talking about?
2. Research design
3. Findings in detail

(If time, broader reflections on digital assets)

Long paper 84 pages, other material (as of early 2022):

- review of policy initiatives to improve cross-border payments
- review of various CBDC initiatives
- an overview of innovation, network effects and adoption

## Agenda items 1-3

He, Chusu and Milne, Alistair K. L. and Zachariadis, Markos, *Central Bank Digital Currencies and International Payments* (May 17, 2022). SWIFT Institute Working Paper No. 2020-2, Available at SSRN: <https://ssrn.com/abstract=4112382>

## And on agenda item 4. related papers

- *The Nexus international payments platform: is it business model viable?* (He, Milne and Zachariadis 2022), Journal of Payment Systems and Strategy, Oct
- *Defining digital assets:* (Milne 2022), the SWIFT institute.  
<https://swiftinstitute.org/research/defining-digital-assets/>
- *The law and regulation of digital assets:* (Milne 2023) in draft
- *Argument by false analogy: the mistaken classification of Bitcoin as token money* (Milne 2021, SSRN) (forthcoming Journal of Money, Credit and Banking)  
[https://papers.ssrn.com/abstract\\_id=3290325](https://papers.ssrn.com/abstract_id=3290325) )

1. What are we talking about?

# “International payments do not exist”

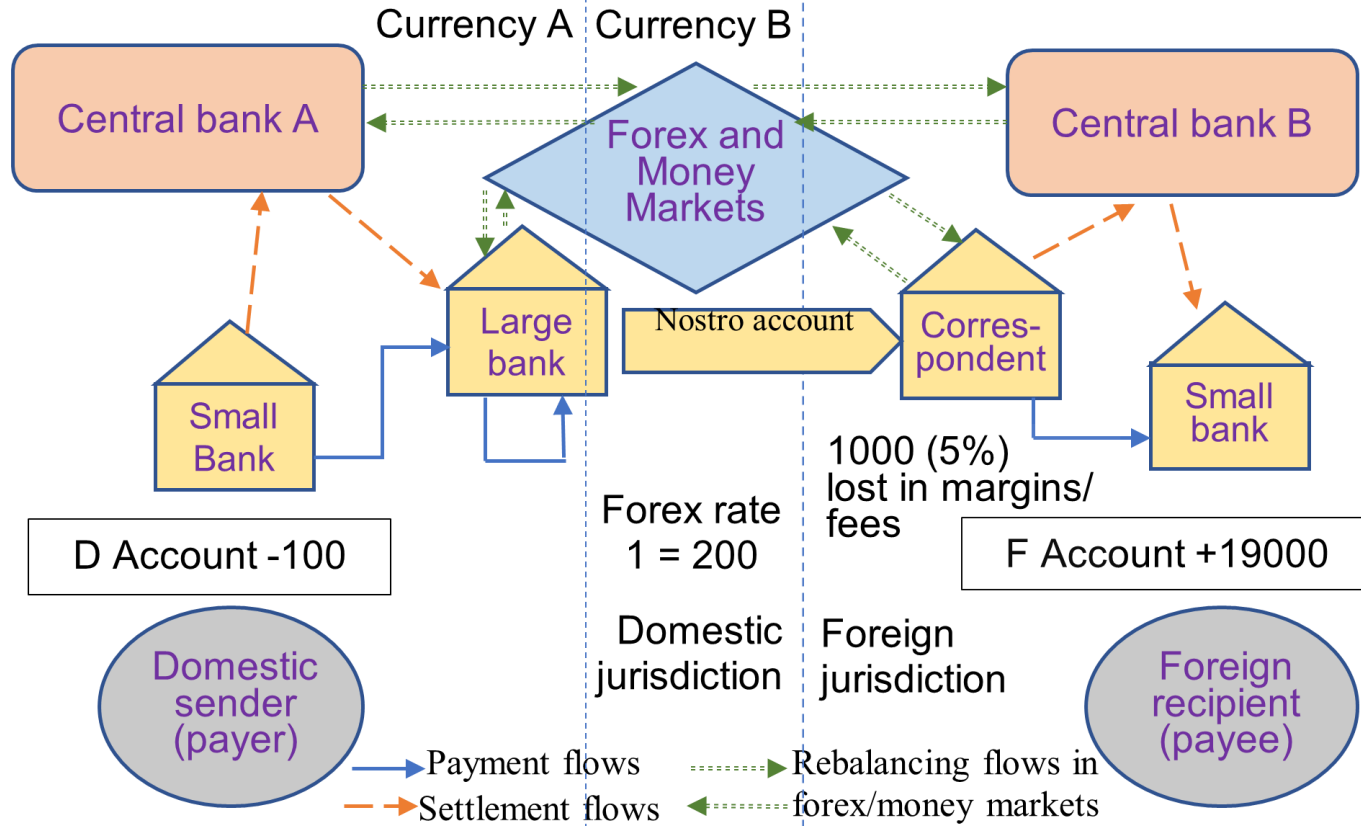


Figure 2 of He, Milne and Zachariadis (2022)

Key point – in international payments **money is not transferred; based on credit**

# Implications

Is CBDC in international payments about

- Supporting evolution of these existing arrangements

OR

is it about

- Transformative evolution of these arrangements to direct exchange of central bank money with no need for subsequent settlement

# Note our definition of CBDC

- We employ the widest possible definition: any new form of direct access to central bank balance sheet
  - Retail: end customer
    - User perspective - not easily distinguished from bank money
  - Wholesale: financial institutions, maybe large corporates
- Technology agnostic
  - We do not assume distributed ledger technologies or any particular systems architecture (e.g. hybrid v. direct)
- Implication – CBDC not “one thing”
  - a central bank might develop 0, 1, 2 or even more CBDCs ...

## 2. Research design



## 20 interviews with payments professionals

Each interview lasted at least 45 minutes, often longer

These were then transcribed and the transcription sent to the interviewees to add comments/ correct our summary. Around 100 pages in total.

### Our research questions

1. How do existing cross-border payments work?
2. Can CBDC help in cross-border payment? How?  
Via evolution of existing arrangements or transformation?

<b>Category (by main professional experience)</b>	<b>Number</b>
<b>International banks</b>	<b>5</b>
<b>International card schemes</b>	<b>2</b>
<b>Non-bank payment service providers</b>	<b>3</b>
<b>Regulators and infrastructure providers</b>	<b>7</b>
<b>Payment technology consultants</b>	<b>3</b>
<b>Total</b>	<b>20</b>

1. Small business payments
  2. Larger corporate transactions
  3. International retail purchases
  4. Remittances
- + the possibility of transformative change

## 3. Findings

# Fig 2 (again)

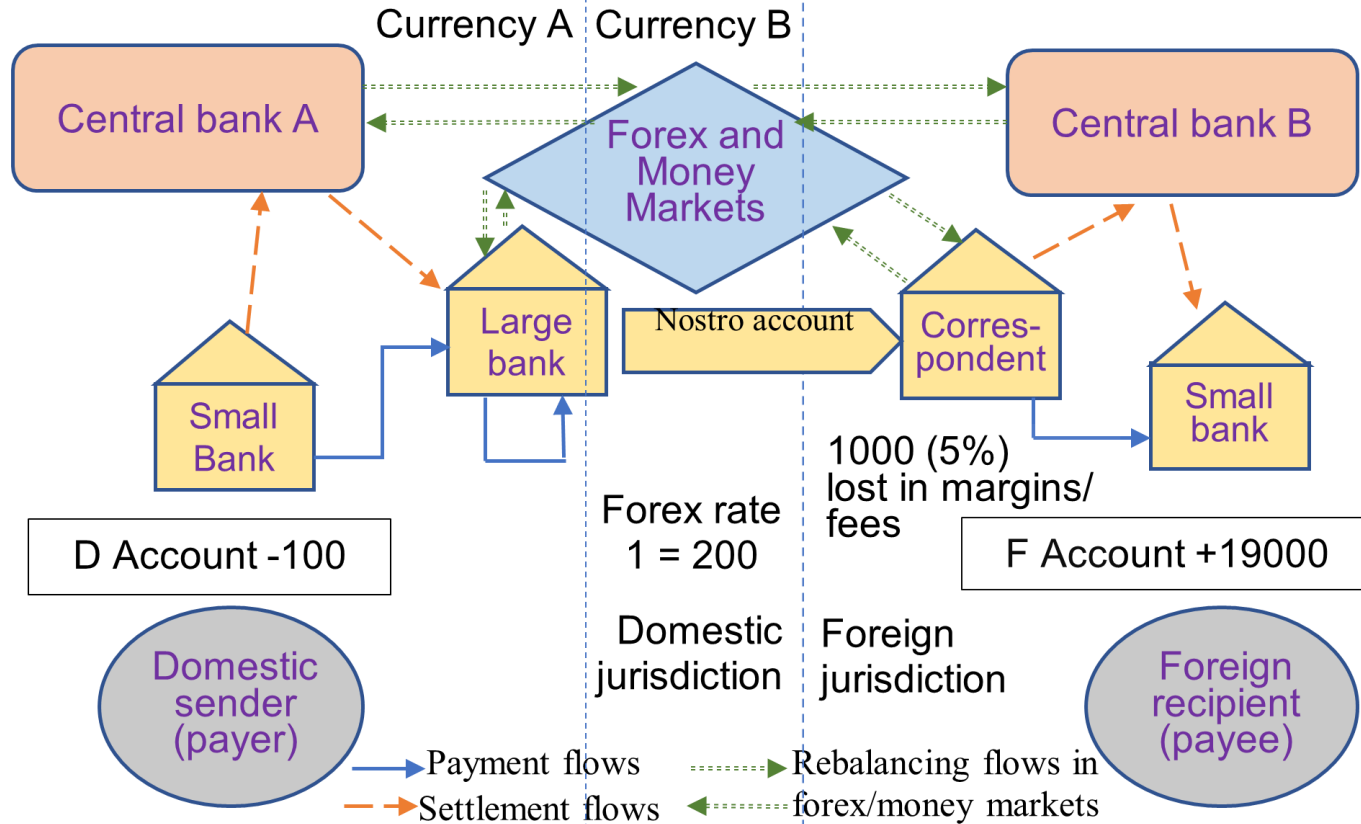


Figure 2 of He, Milne and Zachariadis (2022)

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# Potential impacts: overview

Scenario	Evolutionary change: Wholesale CBDC	Evolutionary change: Retail CBDC	Transformative change - replacing Fig 2
Small business	Reducing barriers to competition	Indirect: standards and identities	(not in paper) may help micro SMEs
Remittances		As e-money may help cashing out	Direct exchange of retail CBDC
Large Corporate	Better liquidity management	-	Reducing barriers to competition
International retail	Reducing barriers to competition	May be useful to tourists	Direct exchange of retail CBDC

# 1. Small business payments

- Existing arrangements bank to bank via SWIFT messaging; increasingly non-bank alternative foreign exchange as well
- Delays, costs and lack of transparency have been a major concern
- Wholesale CBDC offers the possibility to tackle high costs and poor service quality *through greater market competition in correspondent banking service provision.*
- Benefits of Retail CBDC not so obvious.  
But could help in encouraging associated innovation e.g. adoption of global identity standards. These could lower the costs of compliance and reduce the delays that arise when there are mistakes in payment instructions

## 2. Remittances

- The ‘poster child’ for claims about low cost CBDC
  - *Crypto esp Bitcoin does support low cost remittance in some contexts!*
- Issues
  - Slow speed
  - High costs – especially for “cashing out”
    - Especially for cashing out
    - And compliance with AML and sanctions
  - Issues being addressed, especially through the range of new providers
- Retail CBDC
  - Broad adoption, as an e-money, will reduce costs of “cashing out”
- Wholesale CBDC
  - Can again help new providers compete



## 3. Larger corporate transactions

- Customers with regular payments of \$100,000 or more.  
Prompted much less discussion
- The principal challenge is not so much international payments as international liquidity management.  
They hold many currencies, effectively internalising the role of Large bank in Figure 2
- Costs, speed and transparency, not really a concern.
- Possibly, the holding of wholesale CBDC could be of interest to some of these large businesses  
especially if this eases their ability to lend and borrow in wholesale money markets .

## 4. International retail purchases

- the world of card payments, Visa, Mastercard etc.
  - International tourists/ travellers *or* cross border retail purchases
  - A more complicated version of Figure 2 !
- Issues
  - Speed of payment not an issue
  - Transparency matters occasionally
    - e.g. if there is a dispute or suspected fraud
  - Large costs but only the foreign exchange costs visible to the payee
    - Alternative forex providers are beginning to offer lower cost services
- Retail CBDC
  - May help with lack of acceptance at POS, if available to tourists
    - Example – eCNY during the 2022 winter olympics*
  - More broadly potential concerns with market power of card associations (but this is not a specifically cross-border issue)
- Wholesale CBDC
  - May facilitate business models of alternative forex providers

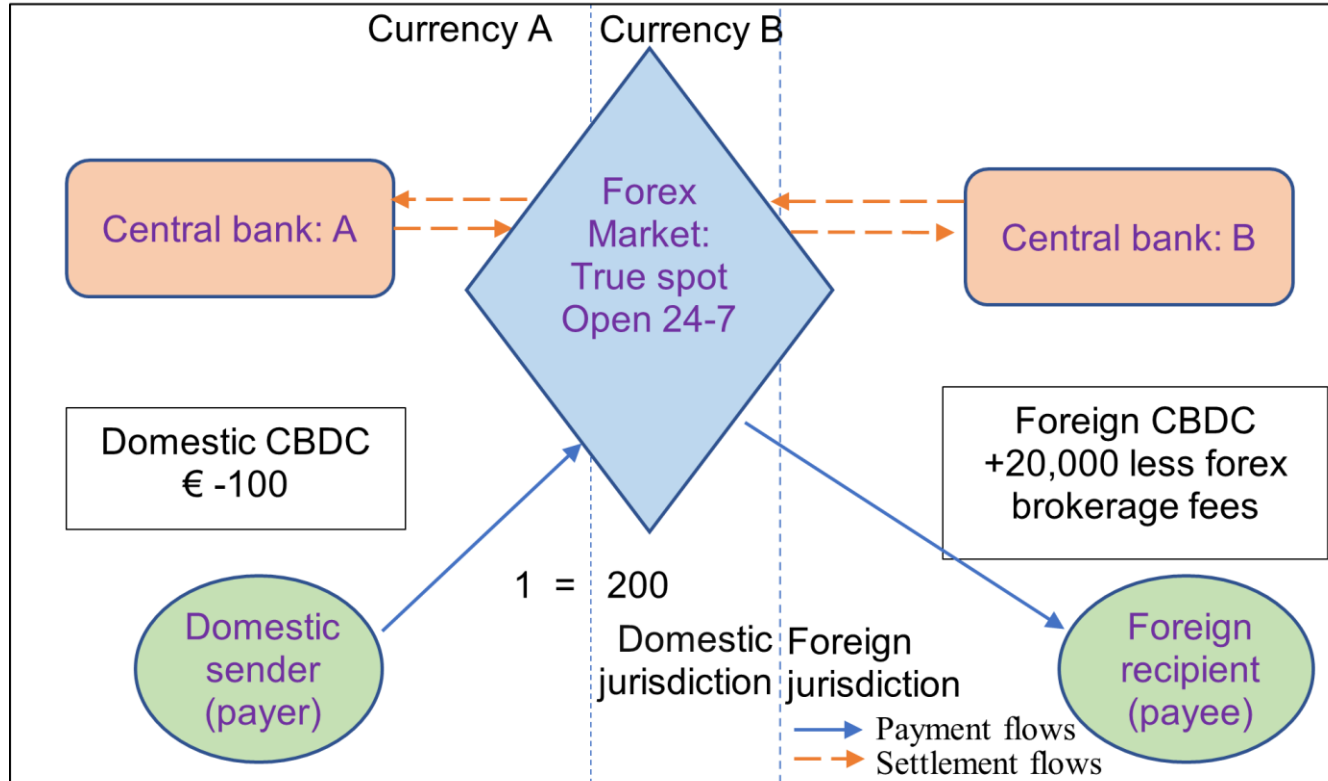
## 5. Transformative change?

- Only with change to the architecture of Figure 2
- We discuss two possibilities
  1. Wholesale CBDC – held by financial institutions worldwide & directly exchanged
    - Allowing 24/7 cross currency liquidity management
    - Near real-time settlement

Note that currently little demand – the CLS-now service has not taken off

2. Retail CBDC – held directly or indirectly by natural and legal persons worldwide & directly exchanged
  - With financial institutions acting as brokers
  - Illustrated on next slide

# An m-CBDC based redesign?



Future reality?

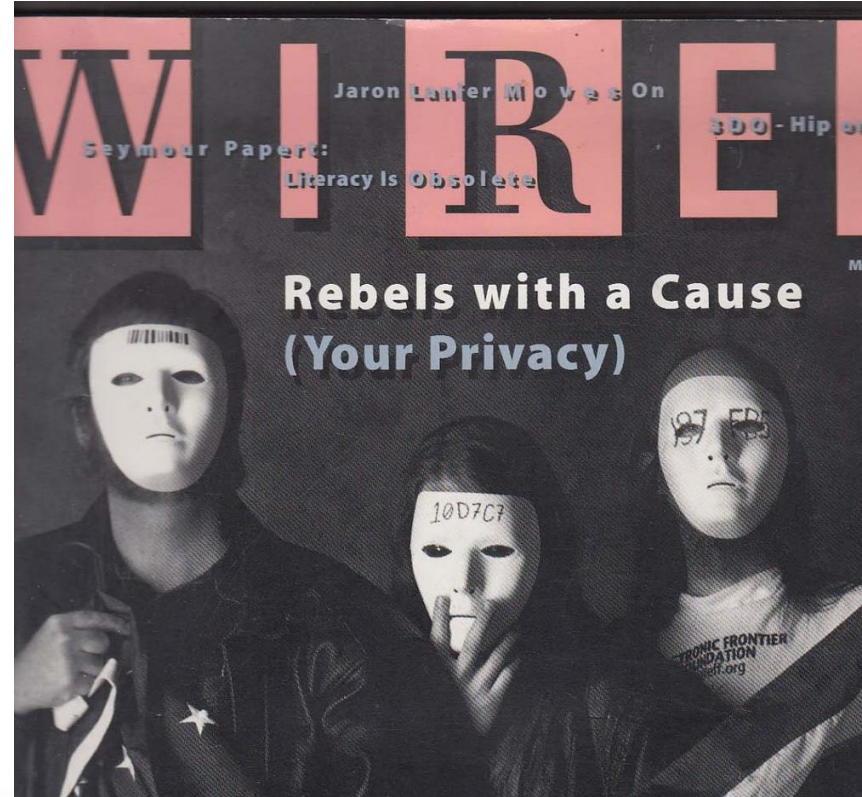
Figure 3 of He, Milne and Zachariadis (2022)

But (i) many variations possible (ii) major change in business models (iii) a key issue is adoption

## 4. Further reflections

# The “Cypherphunks” (dreamers)

John Gilmore , Eric Hughes and Timothy C. May



1. DLT = Shared database, no single controller, immutable records
2. Either *permissionless*  
(the cryptophunk dream, must use blockchain)
3. Or *permissioned*  
(practical reality, completely different)  
closer to conventional database  
in most use cases (e.g. CBDC) DLT v. conventionally managed database is a secondary issue

# Widespread terminological confusion ...

- Useful terms

Notes & coin (one definition of currency)

Fractionally v. fully reserved money

Single v. multiple record systems

Promise to pay v. directly held money

Automatically executed contracts

Payment schemes (and their supporting information exchange)

- Unhelpful terms  
(confused or poorly understood)

Digital assets (I have a lot more on this)

Virtual currency

Digital currency

Token money

Atomic settlement

Smart contracts

Legal tender

If you cannot express your self without these terms, you have not understood what you are saying



- G20 Roadmap for Enhancing Cross-border Payments – first consolidated progress report Oct 2021

*Focus area A: Committing to a joint public and private sector vision to enhance cross-border payments*

The vision is regulatory reporting ! (very much a regulator's vision ☺)

- We have not even begun to discuss the architecture of cross-border payments...
  - implications for RTGS – much less netting/ fractional reserving
- Whatever the direction of travel we must pay attention to the viability of business models (see further JPSS paper)
  - Mostly likely this means focusing on standards development not creating new platforms

# Thank you!

<https://www.lboro.ac.uk/departments/sbe/staff/alistair-milne/>

[https://papers.ssrn.com/sol3/cf\\_dev/AbsByAuth.cfm?per\\_id=148057](https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=148057)

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