



FX Liquidity and Cross-Border Payments: What Role for DLT Networks?

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Objectives of the paper

- **Explain how cross-border payments are underpinned by bilateral credit relationships**
 - By separating the X-border payments problem into two issues:
 - a) determine and secure the settlement asset (FX);
 - b) transfer funds
 - By focusing on salient features of FX markets in EMDEs
- **Demonstrate how DLT networks can help simplify such complex bilateral relationships**
 - By setting up a three-layered cooperation network structure that underlies the current system:
 - a) An information/knowledge structure
 - b) A trust structure
 - c) A credit/funding structure
 - By illustrating that trading digital tokens on DLT networks could have significant benefits as a new cooperation structure

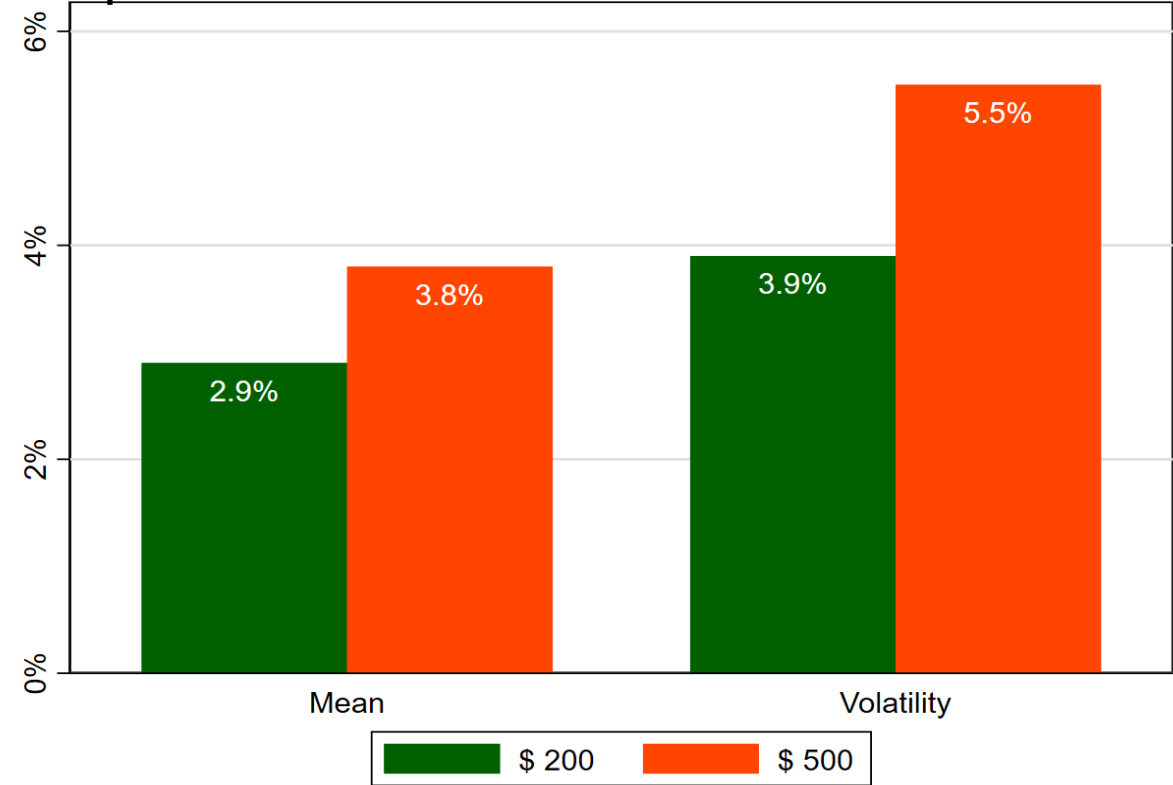
Roadmap

- **The importance of FX liquidity for the cost of X-border payments**
- **Determinants of the exchange structure and choice of settlement asset**
 - Transaction costs
 - Access to credit lines
- **The three-layered cooperation network underlying credit relationships**
- **The role of DLT networks**

The importance of FX liquidity

Cost of remittances is significantly affected by FX spreads

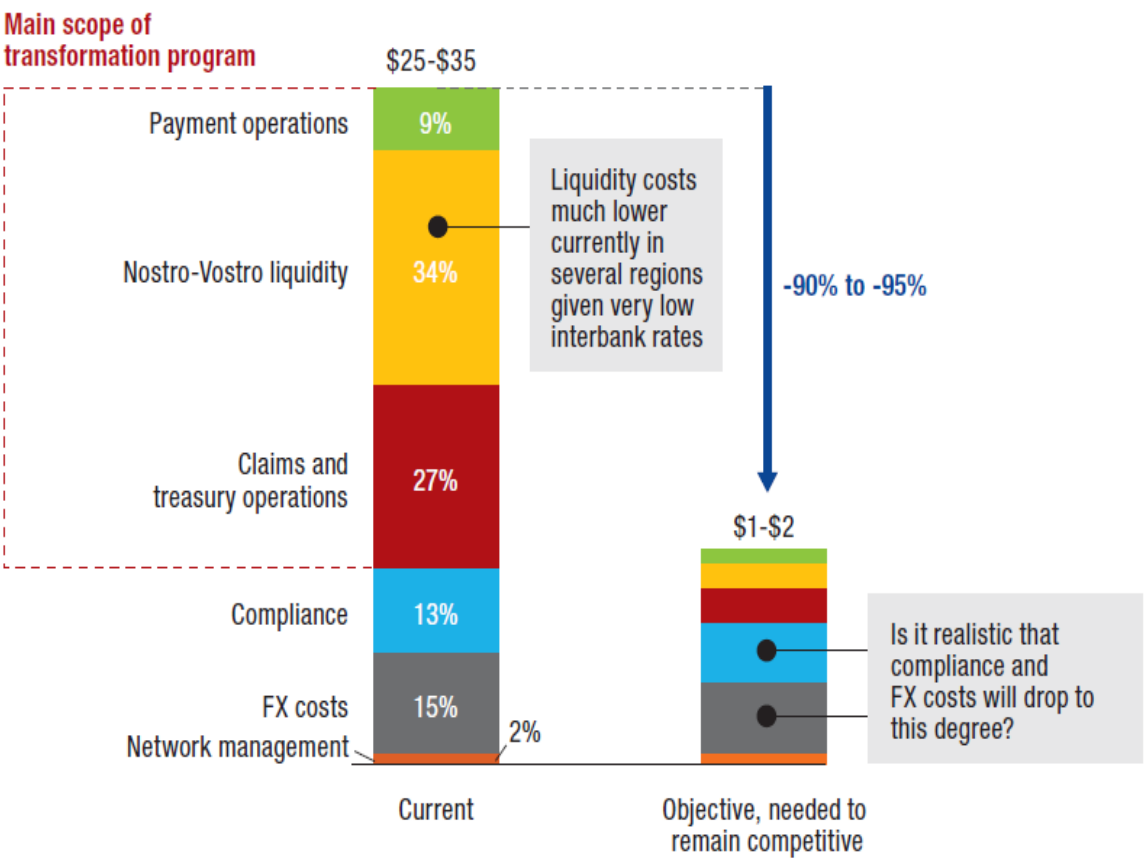
Impact of a 10% increase in the mean and volatility of FX spreads on the cost of remittances



Source: Author's calculation.

...also at the wholesale level as reflected in survey data

Cost per international payments transaction, average for 2013-15

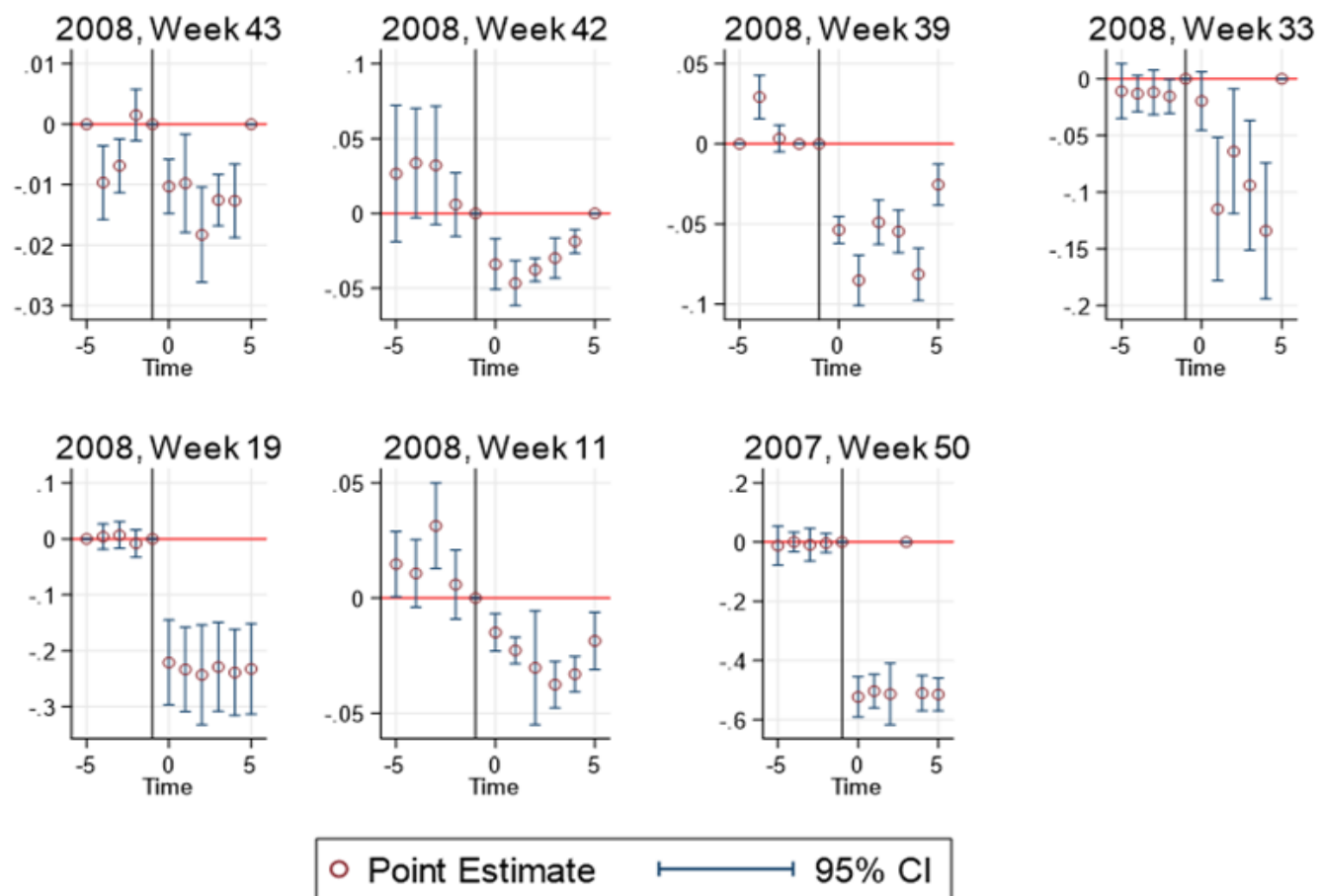


Source: McKinsey Global Payments Map

Settlement asset and exchange structure

- **The distinction between payment and exchange structures** (Krugman, 1984)
 - The use of one or a few dominant vehicle currencies
- **Settlement asset: pre-funded FX reserves or bilateral credit**
 - The former is likely more expensive as payment flows are inherently unpredictable
 - The latter requires a multi-layered cooperation structure (e.g. correspondent relationships) and willingness to take credit risks by vehicle currency lenders
- **Tradeoffs**
 - The fewer the currencies are used as settlement assets, the more efficient the FX market becomes
 - But it requires the core central bank that issues the currency to be willing to provide credit to a larger set of central banks and commercial banks

Illustration: impact of swap line announcements on FX spreads



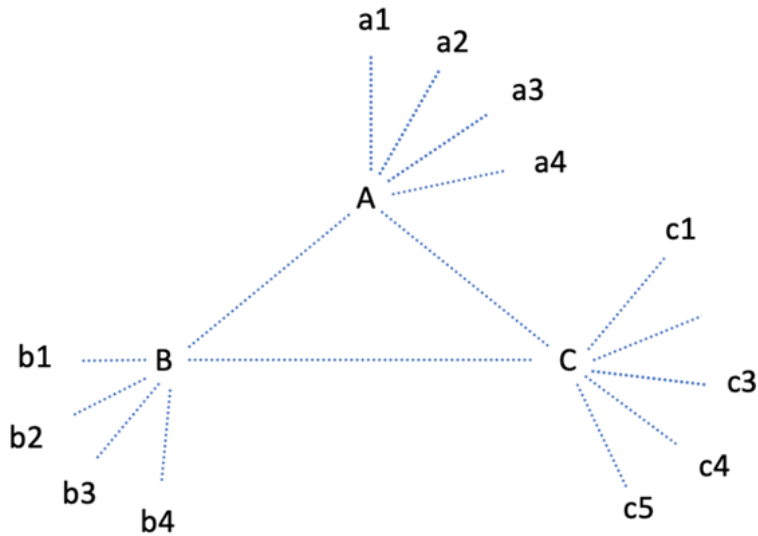
Source: authors' calculation

A Three-Layered Cooperation Structure

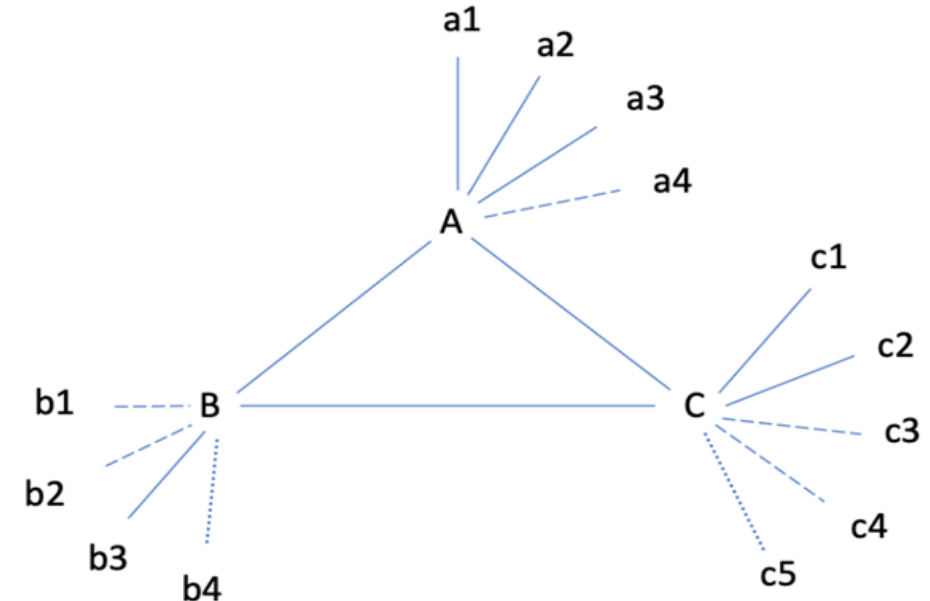
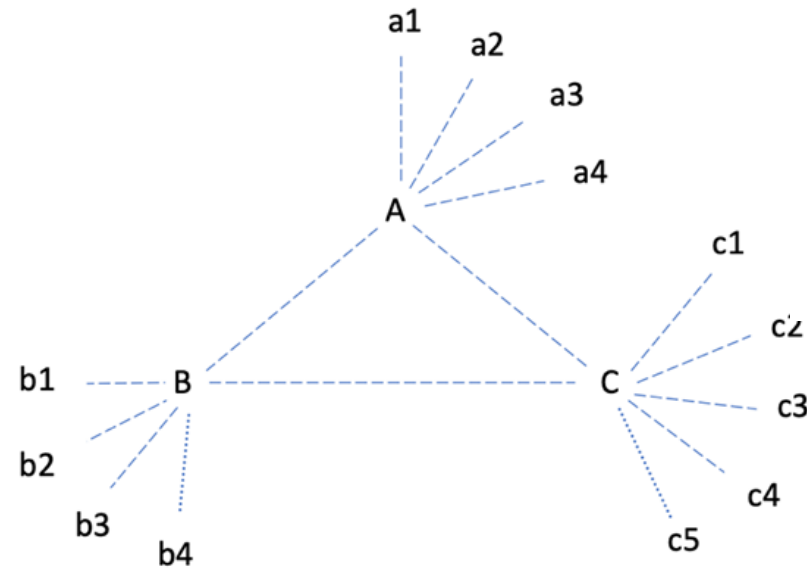
- The cooperation structure often fails to work across small EMDEs and between small EMDEs and large countries
- This can prevent efficiency gains from coordinating on dominant currencies

Information plus Trust plus Credit networks

Information network



Information plus Trust network



The role of DLT networks

- **DLT has the potential to increase efficiency by:**
 - reducing cost of verification and cost of networking (Catalini and Gans, 2020)
 - shifting trust from identity to object, underpinned by technology and governance of a collective network (Kahn and Roberds, 2009)
- **How DLT networks may improve the cooperation network for cross-border payments**
 - DLT networks and the information structure
 - DLT networks and the trust structure
 - DLT networks and the funding structure
 - Liquidity pools
 - Decentralized LSM

Conclusions

- **New platforms for trading digital tokens on a DLT network can improve the cooperation structure underlying X-border payments by**
 - Alleviating information requirements through scale and geographic reach
 - Shifting trust from bilateral counterparts to a network governed by a collective body of participants, from identity authentication to object authentication
 - Democratizing/atomizing funding and reducing credit risks through smart contracts, liquidity pool, and decentralized LSMs
- **This paper helps make the case for Focus Area E of the G20 roadmap by explaining why**