Integrating Fragmented Networks: Interoperability in Money and Payments

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What is this paper about?

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- **Question:** Does interoperability drive digital payment usage?
- Answer: interoperability increases digital payment usage
- The effects are driven by the regions with more ex-ante fragmentation

A lot to like about this paper

- Big question in this literature is whether payments should be interoperable
  - This paper adds discussion about it
- Unusually good data on transactions
- Proprietary data on legacy wallets that became integrated with UPI
- Tons of robustness tests and testing of alternative hypotheses

Overall asessment

- Important question as central banks try to make their payments interoperable
- Very detailed data that allows to explore this question in depth
- Comments:

1. Welfare implications of interoperability
2. Identification concerns
3. Interpretation of the results

Should payments be interoperable?

- I hope for a yes/no/depends answer
- The most successful attempt – Brunnermeier, Limodio, Spadavecchia (2023)
  - Interoperability reduces fees but also hurts financial inclusion
- Ayyagari et al paper: positive effects on market participation but also increased risks
- This paper: increases usage of digital payments
- Can we say more?

Suggestions

- What are the effects on household income, consumption, and welfare?
  - The paper's lending results already point towards this direction
- How does interoperability affect discount rates and rates of corporate investment?
- Are small business loans affected? Access to lending?
- What are the costs of interoperability?
  - Indirect cost: little incentive for new technology in the UPI-dominated world
- Is India's way to achieve interoperability welfare-improving? Maybe alternatives are better (e.g., Drex in Brazil)

Identification concerns

- Can we separate interoperability from broad FinTech development?
- Absent regulation, UPI could crowd out legacy systems because it is more user friendly
- This can happen even if pre-trends are flat

Specialized payment systems

- Imagine the legacy system is specialized and is used for agriculture
- Then it will naturally be more fragmented in some areas and less in others
- UPI penetration will affect more fragmented areas more
- The hub distance instrument loads exactly on this variation, and hub choice can be strategic

Suggestions

- Ideally, we need a closed-loop clone to UPI but we do not have that. Ayagari et al paper uses YONO but it has issues as well
- Provide more details about the legacy system
- Do Rambachan and Roth analysis to discuss parallel trends

Interpetation of the results

- UPI is getting very popular and maybe consumers want to use apps associated with UPI
- Similar to Apple – we want to use headphones that are compatible with Apple
- Suggestion: use consumption data coupled with details on the legacy system
  - Measure consumption trends that are applicable to the legacy system

Minor comments

- IV estimates are very different from OLS
- Value of cross-app payments declines over time – potentially hurts identification
- Cash preference should change with UPI development and interoperability
- The model is one-sided, without merchant's decision-making, but this is an important margin for UPI

Conclusion

- Important question and excellent data
- More welfare analysis would be interesting (maybe in future papers)
- Separating interoperability from broader digitilization is challenging but would be groundbreaking
- Good luck!