

Discussion: High-Speed Internet, Financial Technology and Banking,

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What This Paper Does

- **Question:** What is the causal effect of lower transaction costs in interbank markets on credit supply?
- **Instrument for lower transaction costs:** Introduction of high-speed internet via installation of fibre-optic submarine cables in African coastal countries.
- **Mechanism:** Cable \rightarrow faster internet \rightarrow adopt real-time interbank settlement \rightarrow lowers transaction cost in interbank markets \rightarrow less liquidity buffer \rightarrow more lending

$$\text{2nd stage: } \Delta \log \text{credit}_{cbt} = \beta \Delta \text{transaction cost}_{ct} + \theta_b + \theta_t + \epsilon_{cbt}$$

$$\text{1st stage: } \Delta \log \text{transaction cost}_{cbt} = \delta \text{cable}_{ct} + \theta_b + \theta_t + u_{cbt}$$

- **Indirect evidence of first stage:** Cable leads to 14% higher probability of RTGS adoption.
- **Indirect evidence of first stage:** Interbank activity goes up with arrival of fast internet: 14% increase in loans to banks, 41% increase in deposits from banks
- **Reduced form:** 16% increase in lending after arrival of fast internet.

(Average annual percentage increase over 5-year horizon.)

1. If you are after the effects of fast internet, is RTGS/interbank first-order?

Abstract: “study how high-speed internet affects financial technology and banking”. Could imply..

- How does it affect availability of banking services (online services serve remote customers)?
- How does it affect entry of challenger banks?
- How does it affect underwriting and loan monitoring?
- How does it affect demand for lending and banking services?

2. If you are after frictions in interbank markets, is this a good IV?

- Also note that we have pretty well-identified papers on frictions in interbank markets (which you should cite!): e.g. Iyer, Peydró, da-Rocha-Lopes, Schoar (2014), Chodorow-Reich (2014)

Is This a Good Instrument?

Let's start with the country-level version of the IV:

- **Relevant:** 14% increase in probability of RTGS adoption + effect on interbank market. Seems ok.
- **Valid I:** Does high-speed internet affect lending **only through the effect of real-time settlement/lower interbank transaction costs**
 - Supply side
 - Increased ability to raise deposits from more remote customers
 - Increased ability to monitor borrowers
 - Change in cost
 - Change in the competitive landscape
 - Demand side
 - New business opportunities thanks to faster internet lead to more lending demand (e.g. Hjort, Poulsen AER 2019)
- **Valid II:** Is the arrival of high-speed internet uncorrelated with any other economic shocks or prior economic trends that would affect bank lending?

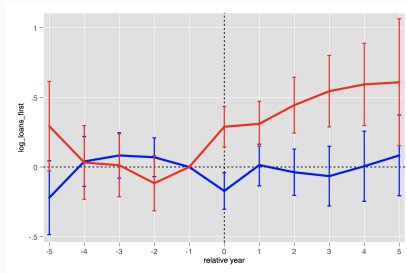
Both of validity assumptions rather unlikely to be satisfied..

Is This a Good Instrument

- Bank-level IV: Even when RTGS arrives in Ghana, not all banks choose to opt in.
- In the bank IV version, you compare banks in Ghana that choose to opt in (compliers) vs. banks in Ghana that don't choose to opt in (never takers).
- **But now you have thrown out the exogenous variation (the cable) and instead compare outcomes clearly driven by selection.**
- My recommendation
 - Stick with the country-level variation
 - Predicting who takes it is helpful to understand **who your compliers are vs. the never-takers.**

More On Validity

- Back to the country-level IV
- Replication: ✓
- Note: Results are driven by **weak lender** = below median use of interbank market



- Who are the weak lenders? What else might be going on?

More On Validity

- Weak banks (in year prior to cable) are
 - **smaller** (42 bn vs. 174 bn)
 - **better capitalized** (25% vs. 18%)
- “Weak banks” also **raise more deposits and increase deposit rates.**

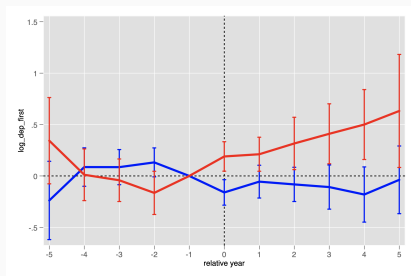


Figure 1: Log(deposits)

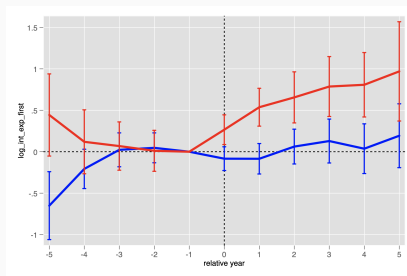


Figure 2: Log(interest expense)

Does Their Demand Exercise Help?

- **Main challenge:** “weak” subsidiaries better suited to take advantage of new online economy business opportunities
- Including **country x year FE** doesn't address this challenge
- Including **bank group x year FE** doesn't address this challenge
 - Also: Shouldn't internal capital markets undo frictions from interbank market?

Implementation Details

- Usually, we want to run DiD in a continuous sample. With three year window around event, the sample of continuously reporting banks shrinks to 68 banks and results go away

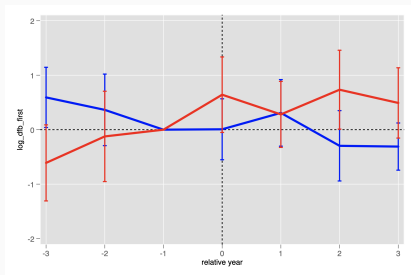


Figure 3: Log(deposits from banks)

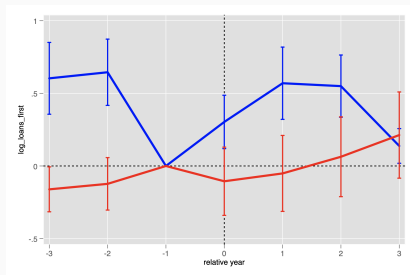


Figure 4: Log(lending)

Conclusion

- Interesting setting to learn about the effect of high-speed internet on banks.
- Re-visit whether interbank angle really is first-order?
- Right now, hard to swallow the causal effect.
- Put more work into investigating who the “weak” banks are, who the compliers are...