Discussion of “Digital Payments and Monetary Policy Transmission” by P. Liang, M. Sampaio and S. Sarkisyan

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Objective

- Broad: Impact of digital payments on transmission of monetary policy
- Specific: Impact of Pix on pass through of policy rate changes to deposit rates
  - High level empirical evidence related to a “market power” story
  - Circular city model with comparative statics
  - Calibration and estimation of dynamic model (Wang et al. 2022)

Market power story: Pix impacts banks' market power in 3 ways

1. More banks/PSPs
2. Reduces switching costs
3. Levels playing field

1. More banks

- PIX facilitates faster, cheaper payments
- All existing banks have ability to provide this service (banks with over 500K transactions mandated)
  - smaller banks who were not obliged to participate saw that it was in their interest to do so.
  - Non-bank PSPs also saw competitive incentives to enter
  - Importance here of the rise of digital banks in Brazil (currently over 22 digital banks in Brazil and at least 20 per cent of Brazilians use digital wallets daily)
- More banks means people have more choice; can lead to people holding more accounts and lower balances in each account
- Theoretical support for this channel in circular city model

2. Reduces switching costs

- Pix infrastructure (all its rules and logic) enables easy switching between PSPs.
- Open APIs form a key part of the rulebook, as they securely transmit only the data needed for a particular transaction
  - Includes both account information service (AIS) APIs and payment initiation service (PIS) APIs.
  - These APIs are defined and implemented by the Open Finance initiative governance body.
  - **They allow users to port their transaction history** (allows people to keep a continuous and comprehensive record of their financial transactions without losing any historical data; apply for credit)
- To switch you must still open an account in another PSP.
- Fintechs are really good at making this easy, so movement is likely (I'm guessing) more from traditional banks to digital banks
- Before Pix, transferring money came with real costs: customers would have to pay 15 BRL to send money to another bank. Cashing in and out was much harder and costly. People would cash checks to avoid fees.
- PIX also made it easier to switch across traditional banks

Test of market power: Within-branch regressions

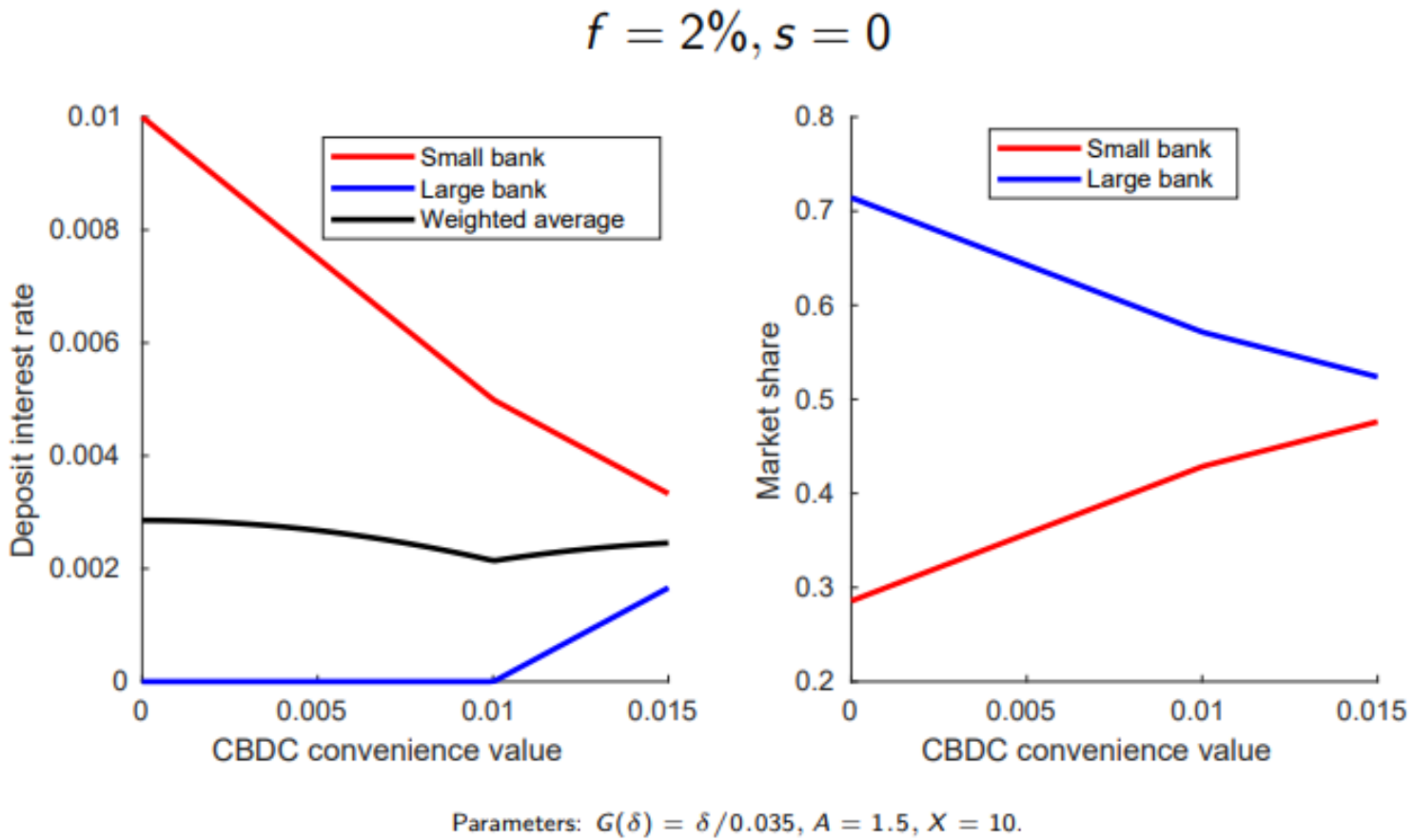
- Paper argues more PIX usage *implies* less market power *implies* more sensitivity of deposit rates to policy rate changes (through threat of switching)
- Initial empirical analysis uses the Drechsler et al. (2017) "elasticity" parameter that comes from regressing change in deposit spread on change in monetary policy rate and relates this to PIX usage
- *"a 1 p.p. increase in the policy rate generally increases banks' deposit spreads by 73 b.p. but in areas with R$1000 higher per capita Pix transactions, spreads increase only by 19 b.p."*

- Comment 1: How do we interpret this?
  - Key drivers are that Pix reduces switching costs and increase payment convenience
  - These are structural aspects that do not depend on payment volume; should apply regardless of volume
  - Perhaps argument is that switching only makes sense for larger accounts and perhaps transaction size is a proxy for account size?

3. Levels the playing field

- Idea is that Pix makes small banks more competitive by increasing convenience so that banks generally have to react more to rate changes
- More detailed analysis related to Pix in Sarkisyan (2024)
- Comment 2: In theory Pix should allow small banks to charge lower deposit rates – need impact on larger banks to be stronger. If not, this aspect works against other two

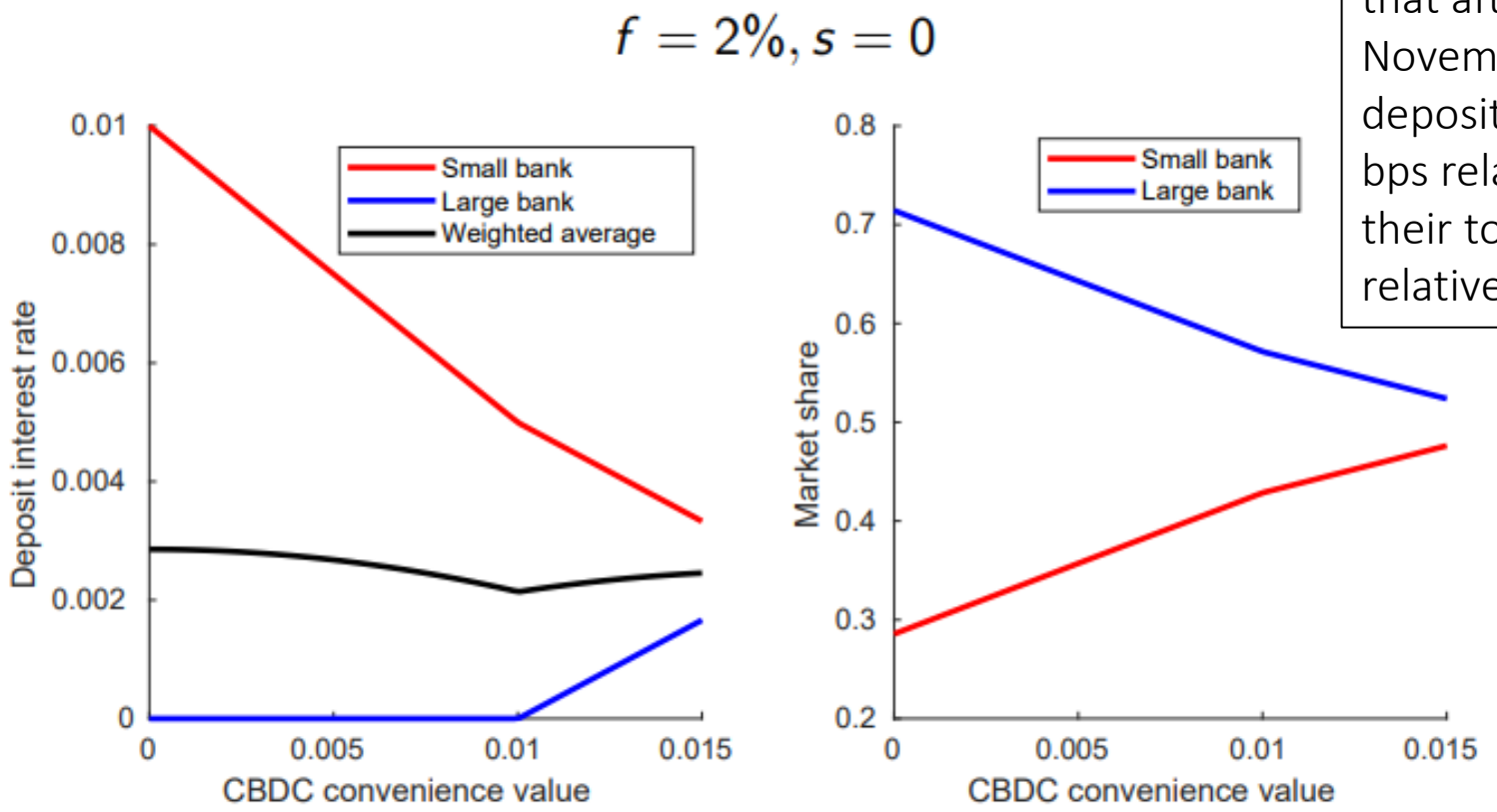
Impact of CBDC convenience value on deposit market



Source: Garratt, Yu and Zhu, "The Case for Convenience: How CBDC Design Choices Impact Monetary Policy Pass-Through" BIS Working Paper No. 1046, November 2022.

Impact of CBDC convenience value on deposit market

Note: Sarkisyan (2024) finds that after the launch of Pix in November 2020 small banks' deposits rates decreased by 14 bps relative to large banks, and their total deposits increased relative to the large banks



Parameters: $G(\delta) = \delta/0.035$, $A = 1.5$, $X = 10$.

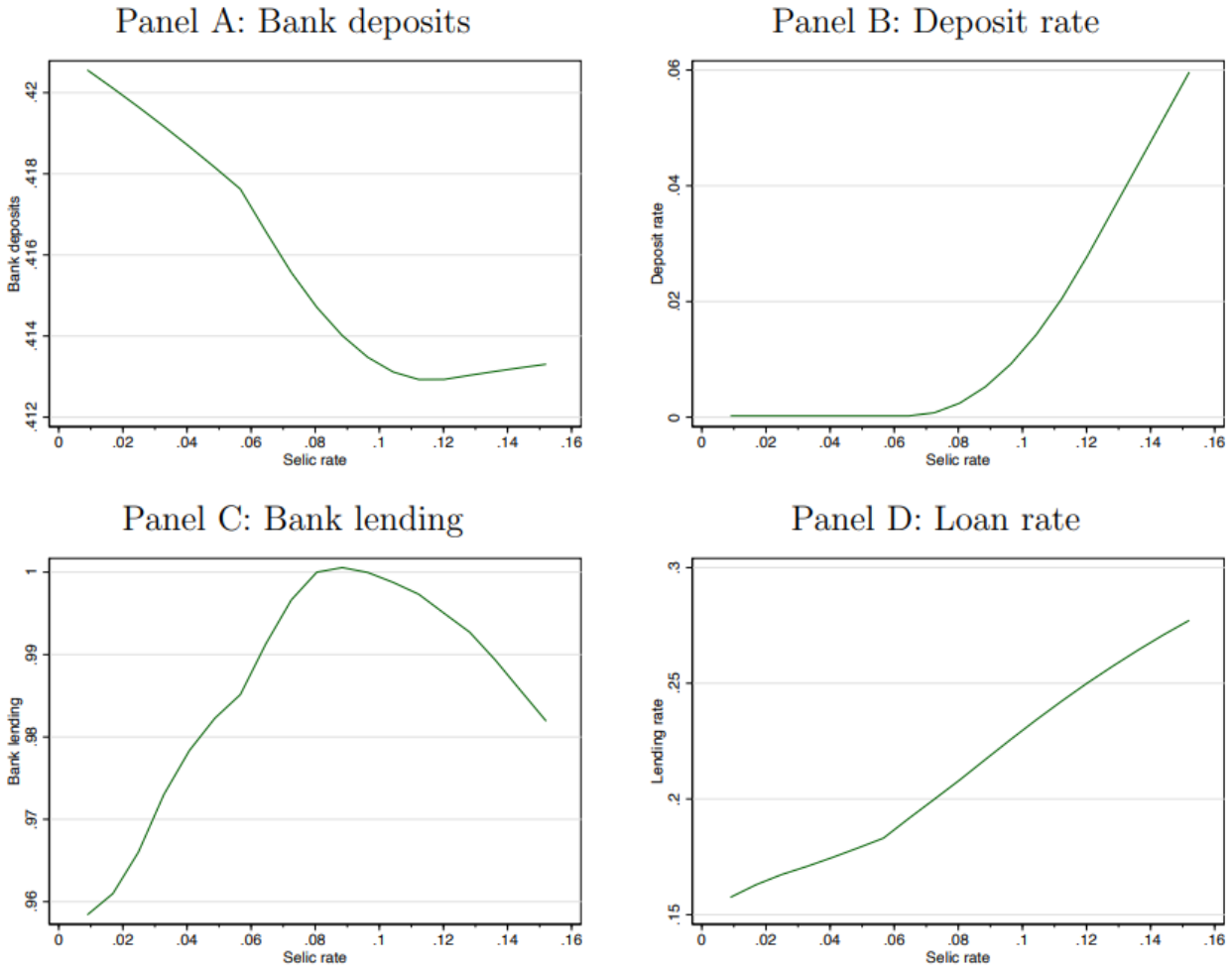
Source: Garratt, Yu and Zhu, "The Case for Convenience: How CBDC Design Choices Impact Monetary Policy Pass-Through" BIS Working Paper No. 1046, November 2022.

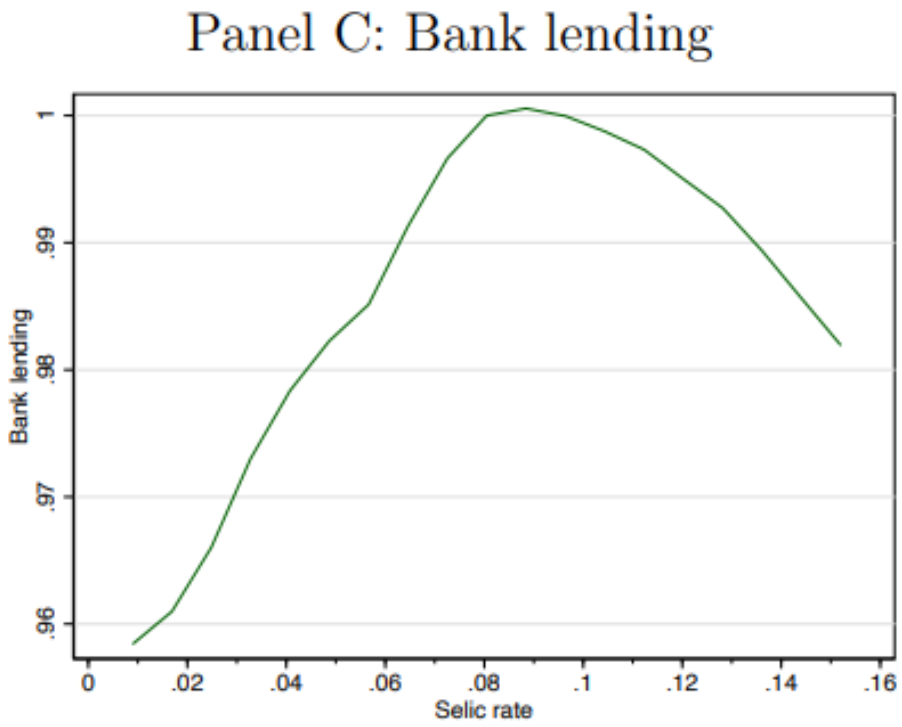
Calibration and estimation of dynamic model

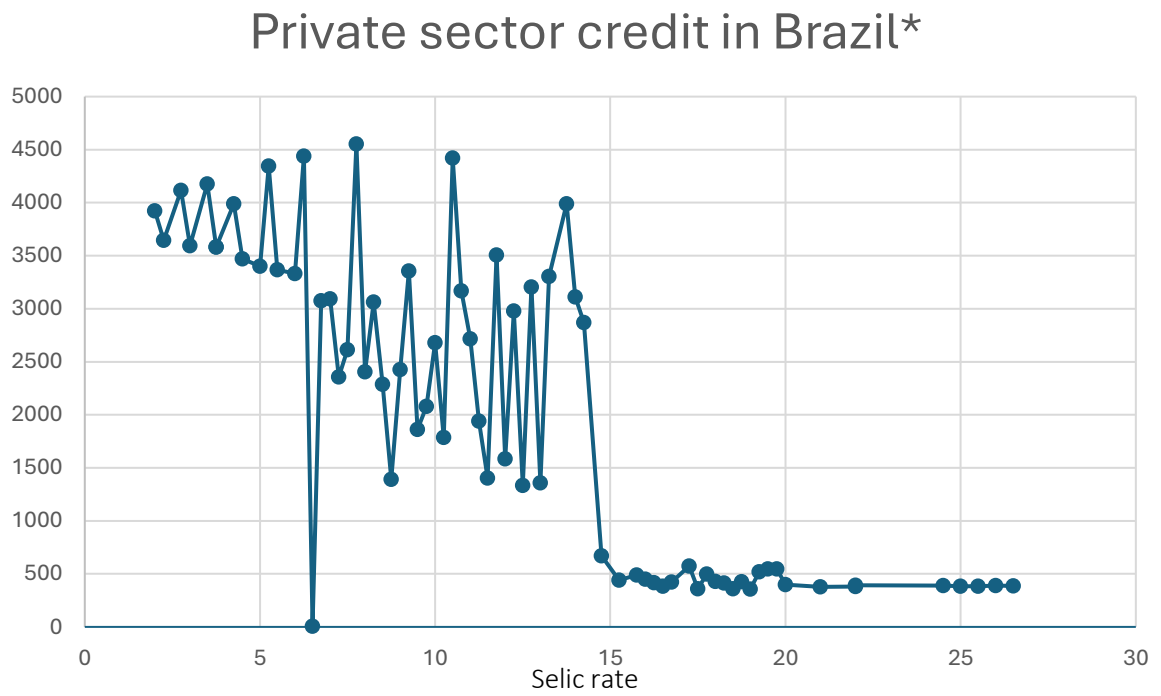
- Wang et al. (2022)
- Infinite-horizon dynamic equilibrium model with three sectors: households, firms and banks
- Pix increases sensitivity to deposit interest rate (proxy for being easier to move)
- Goal is to understand the mechanism that causes payments to affect monetary policy transmission
- Allows counterfactual: no Pix

- Baseline results with Pix show deposit levels decline as Selic rate increases (top left) and deposit rates below Selic rate (top right)
- Idea is that with high Selic rates alternative investments are more desirable.
- <u>Comment 3</u>: Should be able to compare these predictions to actual data.

Figure 7: Policy functions





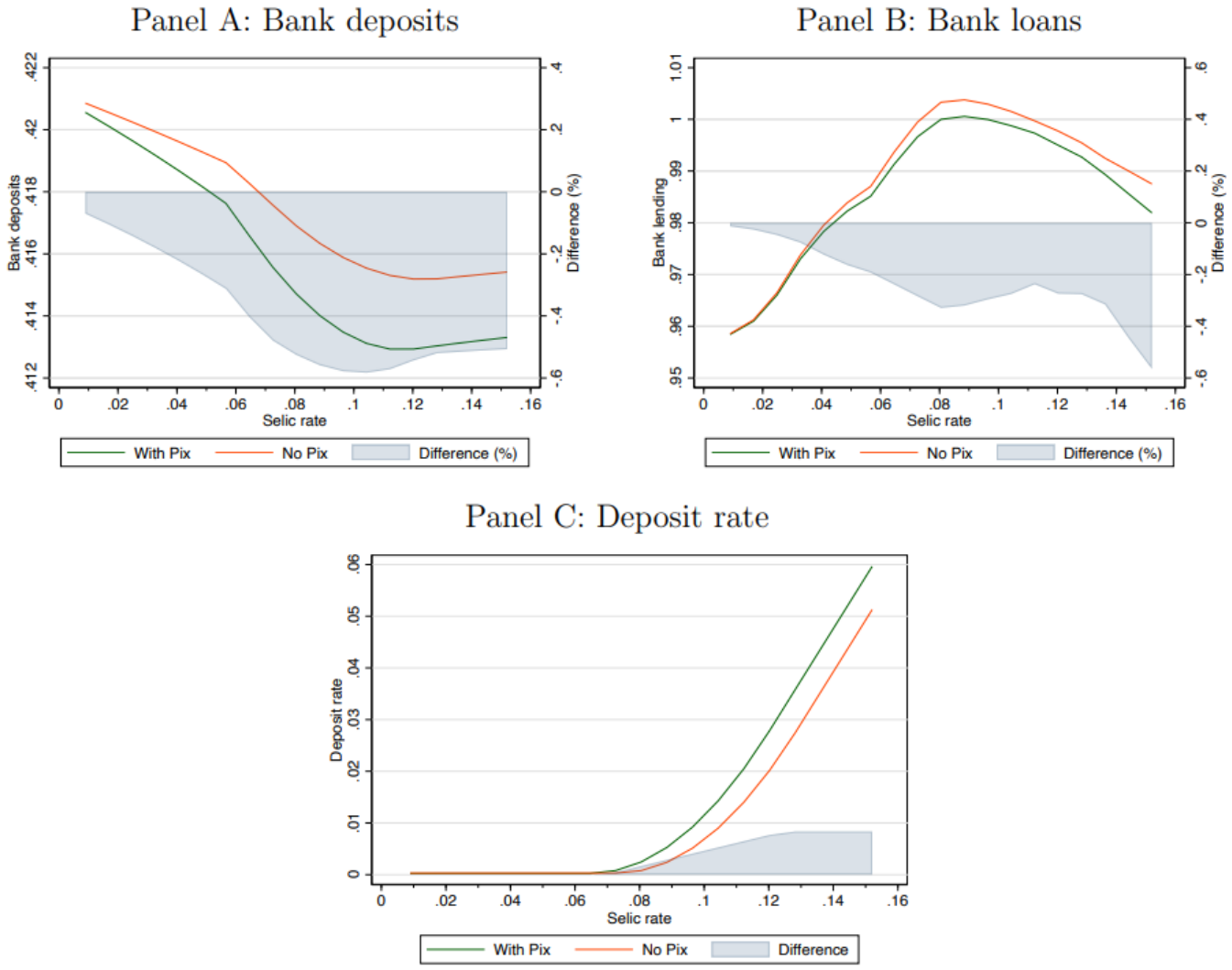


*Private sector credit refers to the credit extended by commercial banks and other deposit-taking institutions (excluding central banks) to private non-financial firms and households. Included are all credit institutions: domestic and foreign owned as well as private and public ones.

Source: theglobaleconomy.com

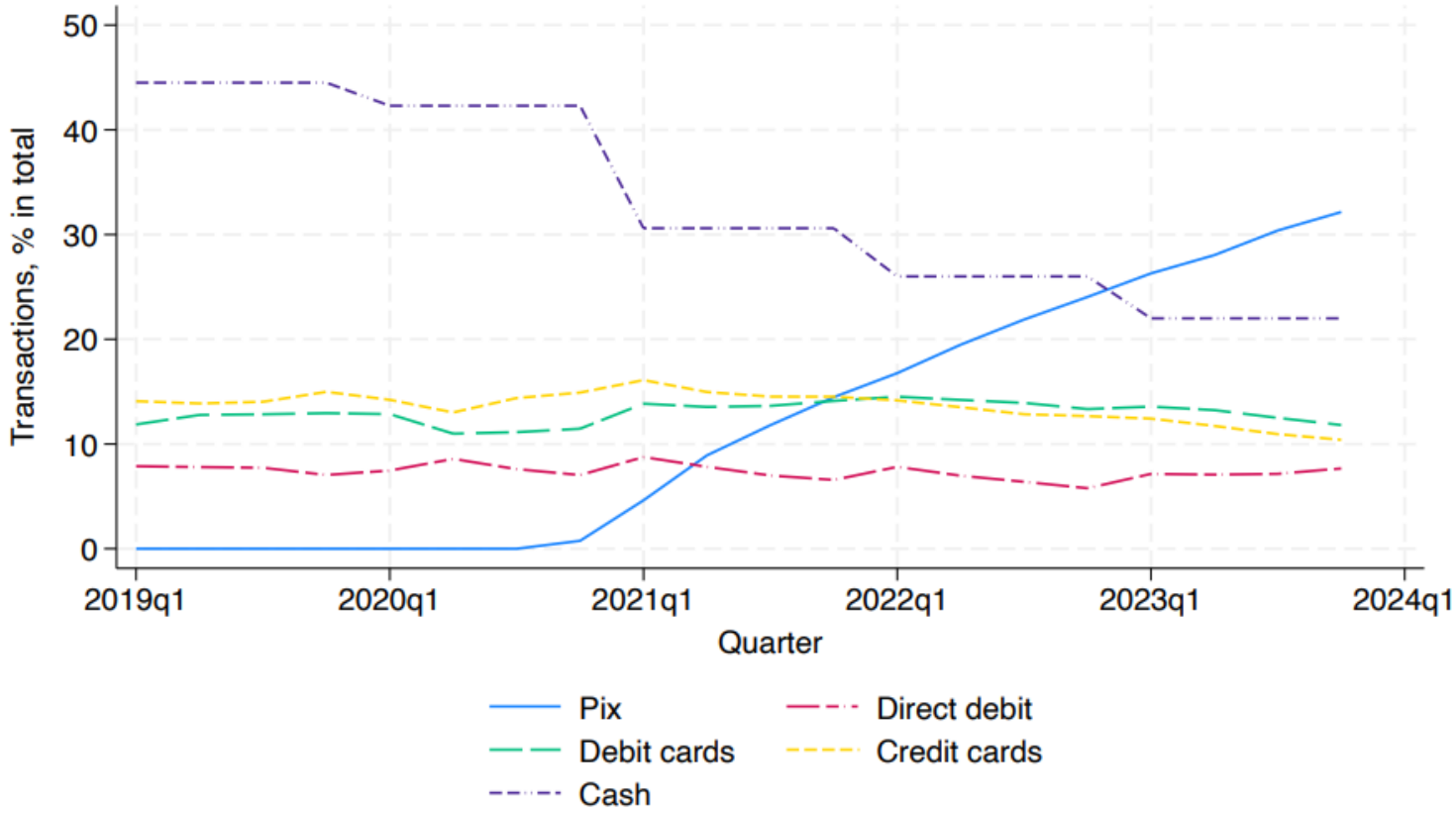
- Counterfactual shows less deposits (top left), less loans (top right) and higher deposit rates (bottom) with Pix.
- **Comment 4**: How do we reconcile this with "Means of Payment in Brazil" graph (Figure 1 in paper)?

Figure 8: Deposits and loans without Pix

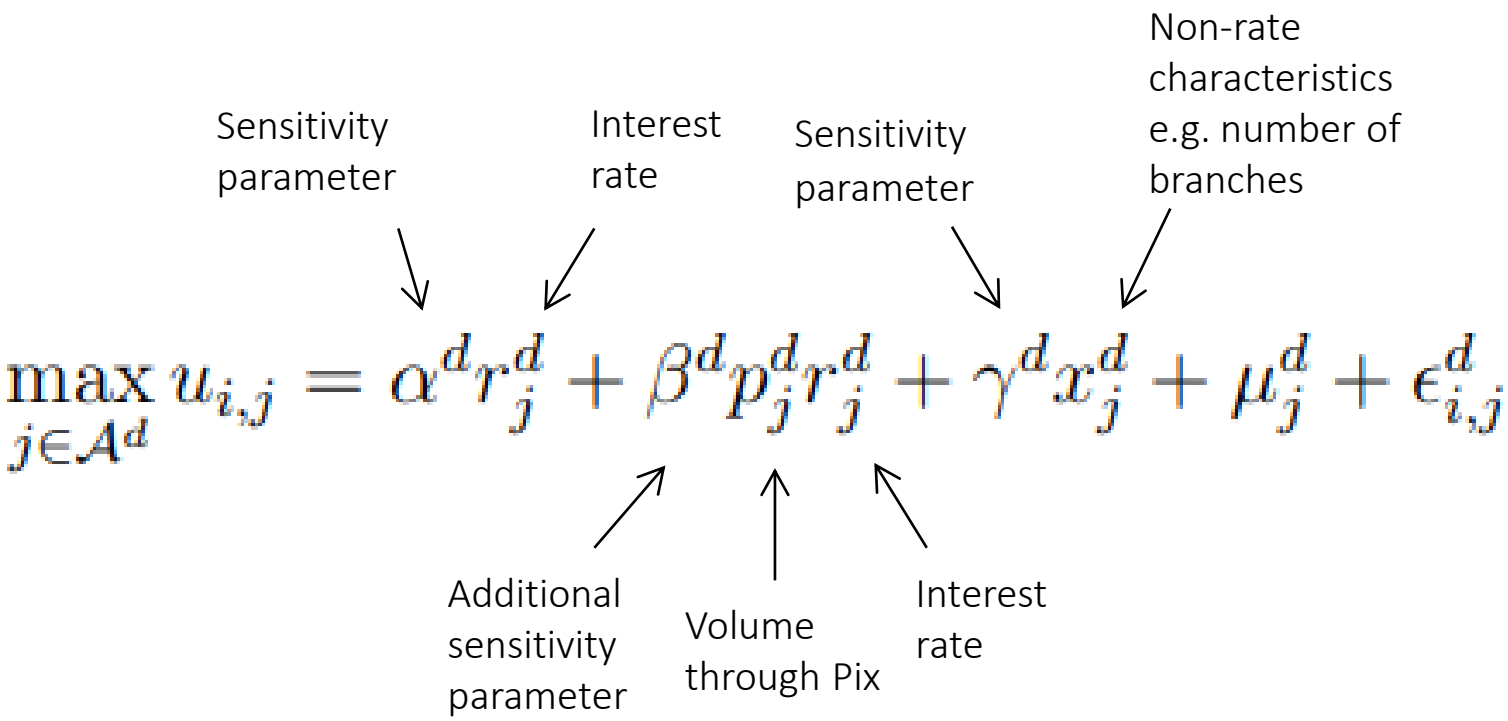


- Large move from cash to digital
- No reduction in debit transactions
- Digital banks include banks and non-bank PSPs. The relevant players in this "digital banks" category are banks that can lend (Nubank being the largest, MercadoPago a second very big player)

Figure 1: Means of Payment in Brazil, % of Transactions



Household utility function



- <u>Comment 5</u>: Improve the counterfactual by accounting for change in convenience.

Final Remarks

- The more people know about Pix the better, so keep writing on this topic!
- Great start to deeper understanding of how FPSs impact monetary policy
- Different experience in United States with FedNow
- Comment 6: Could ask whether these results make a case for policies/regulations to encourage enrollment in FedNow
- Comment 7: Could ask how these results can be used in the design of retail CBDC (eg. Digital Euro)

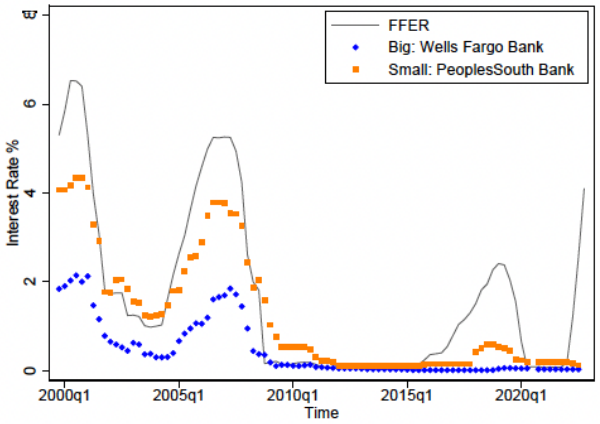
Thank you

Looking beyond Market Power

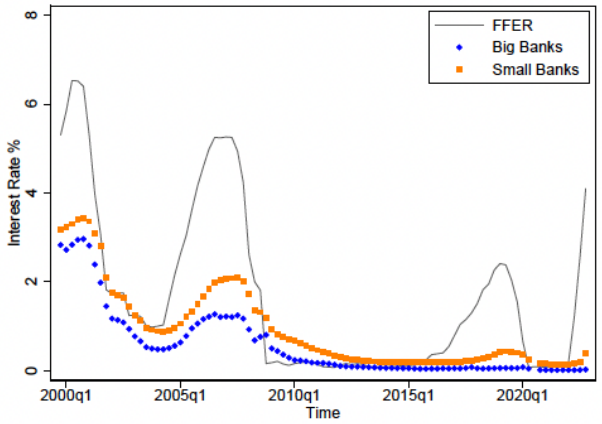
- Drechsler et al. does not explain differences in pass through at different rate levels

- <u>Comment 8</u>: Need to account for other factors that may not be impacted by Pix, or may be differentially impacted by Pix

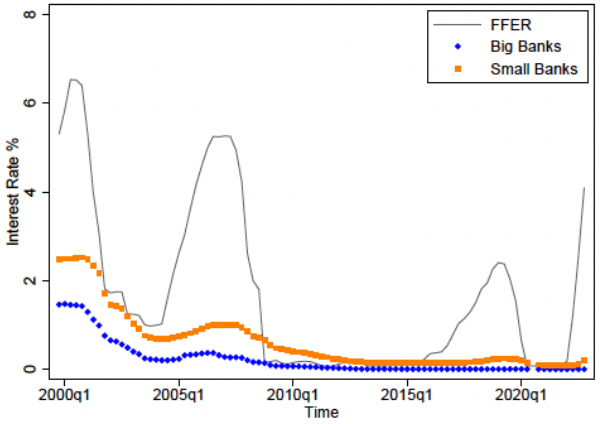
(a) Wells Fargo vs. PeoplesSouth Bank ($25K Money Market Accounts)



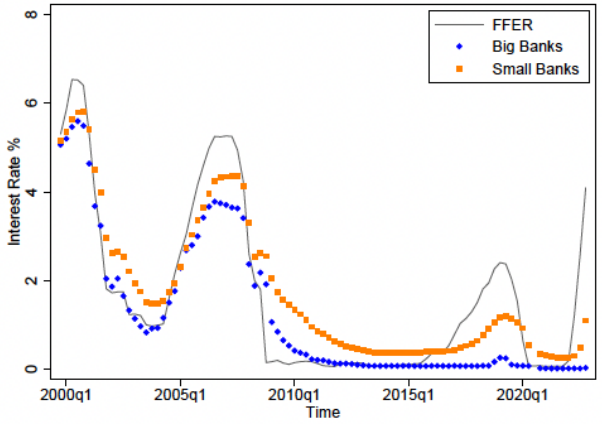
(b) Big Banks vs. Small Banks ($25K Money Market Accounts)



(c) Big Banks vs. Small Banks ($2.5K Savings Accounts)



(d) Big Banks vs. Small Banks ($10K 12-month CDs)



Source: Garratt, Yu and Zhu, "Monetary Policy Pass-Through in High and Low Interest Rate Regimes," mimeo, 2024.