Banks' Physical Footprint and Financial Technology Adoption

Lucas A. Mariani   José Renato H. Ornelas   Bernardo Ricca

Discussed by Sergey Sarkisyan

May 19, 2023

Overview

- Bank branches make us use cash – why?

- Low costs of withdrawal

- Can deposit back anytime

- Branch closure $\Rightarrow$ demand for payment technology $\uparrow$

- Robberies – plausibly exogenous variation in branch closures

- Payment technology – *Pix*

Econometric framework

- Want to show: branch closure $\Rightarrow$ Pix usage

- Variation in branch closure from 'hit-and-runs' on branches

- Identification assumptions:

1. Parallel trends in treated and non-treated areas absent robberies

Econometric framework

- Want to show: branch closure $\Rightarrow$ Pix usage

- Variation in branch closure from 'hit-and-runs' on branches

- Identification assumptions:

1. Parallel trends in treated and non-treated areas absent robberies

2. Robberies $\Rightarrow$ branch closure – **relevance assumption**

3. Robberies $\Rightarrow$ Pix usage **only** via branch closure – **exclusion restriction**

Econometric framework

- Want to show: branch closure $\Rightarrow$ Pix usage

- Variation in branch closure from 'hit-and-runs' on branches

- Identification assumptions:

1. Parallel trends in treated and non-treated areas absent robberies

2. Robberies $\Rightarrow$ branch closure – **relevance assumption**

3. Robberies $\Rightarrow$ Pix usage **only** via branch closure – **exclusion restriction**

- **Summary of my comments:** Assumptions 1-2 are discussed but need more checks, assumption 3 should be discussed

Parallel trends

- Matching is useful but

- Explain why you need the coarsened matching. Do standard methods work?

- Show results without matching

Parallel trends

- Matching is useful but

- Explain why you need the coarsened matching. Do standard methods work?

- Show results without matching

- The matching variables should include crime rates

- Little correlation with homicides – what about other robberies?

Parallel trends

- Matching is useful but

- Explain why you need the coarsened matching. Do standard methods work?

- Show results without matching

- The matching variables should include crime rates

- Little correlation with homicides – what about other robberies?

- Municipal characteristics don't predict robberies – Table 6 regression might be misspecified

Table 6 specification has issues – show F-Stat

Table 6: Predictors of bank robberies

	Bank Robbery		
	(1)	(2)	(3)
3G Internet Area Coverage	-0.004	-0.002	0.002
	(0.008)	(0.011)	(0.012)
3G Internet Population Coverage	0.011	-0.008	-0.000
	(0.007)	(0.011)	(0.012)
Area	0.015*	0.025	0.012
	(0.008)	(0.025)	(0.019)
Population	0.040	0.111	-0.012
	(0.062)	(0.121)	(0.096)
Households	-0.003	0.038	0.034
	(0.063)	(0.126)	(0.098)
Municipal GDP	0.002	-0.013	-0.020
	(0.009)	(0.038)	(0.024)
N	3767	2735	2735
R2	0.020	0.055	0.002
Sample	All	CEM	CEM
CEM Weights	No	No	Yes

Relevance

- Relevance assumption – first stage

- Sample includes areas with < 10 branches – why? Show results with all

Relevance

- Relevance assumption – first stage

- Sample includes areas with < 10 branches – why? Show results with all

$$BranchOp_{it} = \alpha PostRobbery_t + \beta Treat_i + \delta \cdot PostRobbery_t \cdot Treat_t$$

- Relevance – $\delta < 0$

Table 8 can show estimation of the regression above instead

Table 8: Bank Robberies and Branch Outcomes

	(1)	(2)	(3)
Post Robbery Bank	-0.001	-0.025**	-3.547***
	(0.013)	(0.012)	(0.275)
Post Robbery Municipality	-0.016*	0.008	-0.201
	(0.009)	(0.008)	(0.126)
Bank X Municipality FE	Yes	Yes	Yes
Bank X Time FE	Yes	Yes	Yes
3G Internet Cov. X Time FE	Yes	Yes	Yes
N	155587	155587	155587
R2	0.939	0.876	0.762

Exclusion restriction

- Robberies disincentivize me to carry cash – direct impact on Pix usage

- If so, exclusion restriction **is not** satisfied

- Increased use of FinTechs might be caused by increased convenience

- Decline in TED usage:

- Maybe treated municipalities picked up Pix for different reasons?

- Debit and credit card usage can be affected by the same reasons or robberies themselves – ATMs don't operate

Suggestion

- Are effects weaker in areas with more branches?

- Need variation in branches by municipalities – might be tricky but doable

- Zipcode level analysis can help

Minor issues

- Tables are hard to read – add dependent variables and better footnotes

- Describe sample construction and empirical strategy in greater detail

- Describe the ideal experiment

Conclusion

- Insightful paper addressing a very important question

- Needs more work to sharpen the identification

- Look forward to reading the next draft!